Dividend policy and stock returns: Evidence from Jordan

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Abstract

The purpose of this study is to examine the empirical relationship between the two dividend policy measures (dividend yield and dividend payout ratio) and the stock return, after controlling for the excess return on the market, the size of the firm, financial leverage, and the ratio of the book value per share to the market value per share in the context of the Jordanian stock market. All firms listed on the Amman Stock Exchange are selected for analysis over the period from 2002 to 2008. The unbalanced panel data (cross-sectional and time series) is used to examine the relationship between dividend policy and stock returns. The results of this study show a positive and significant relationship between dividend yield and stock return while stock return is inversely associated with dividend payout ratio. The contribution of this thesis is to reduce the dearth of previous research on dividend policy in emerging markets regarding the empirical relationship between dividend policy and stock return.

Key words: Dividend Yield, Payout Ratio, Stock Return, Market Return, Amman Stock Exchange.

1. Introduction

Dividend policy is a central strategic concern around which other corporate financial policies rotate. Ross et al. (2005) define corporate dividend policy, simply, as determining the amount to be paid to the shareholders and that to be retained in the company to reinvest in profitable projects or for retention in case of future needs.

Dividend policy has attracted the interest of numerous researchers in the field of corporate finance over a long period (e.g. Lintner, 1956; and Gordon, 1963); however, the subject of corporate dividend policy remains a focus in many recent articles (e.g. Bhargava, 2010; Kooli and Her, 2010; Blouin et al., 2011; Grullon et al., 2011; John et al., 2011; and Renneboog and Trojanowski, 2011).
Corporate dividend policy is one of the most important financial policies in corporations regardless of the type of industry activity. Therefore, a vast literature has examined corporate dividend policy (e.g. Miller and Modigliani, 1961; Lintner, 1962; Al-Malkawi, 2007; and Al-Najjar and Hussainey, 2009). Dividend policy is recognized as conveying information to stockholders in relation to the performance of the company (e.g. Bhattacharya, 1979 and 1980; Ross et al., 2005). In addition, dividend policy could provide some information regarding where the company is located on its life cycle curve (e.g. Block and Hirt, 2008).

Dividend payments give precise indications of firms’ true value (apGwilymet et al., 2000). Firms’ managers can use dividend policy to send private information to investors and share prices may alter to reflect this information (Miller and Rock, 1985; John and Williams, 1985). Dividend policy might be used by investors, as a means, to obtain information concerning the expected future firm’s performance (Bhattacharya, 1979, 1980; Richardson et al., 1986; Healy and Palepu, 1988). Firms’ managers can signal good news to investors with respect to the stability of earnings growth by keeping or increasing dividend payout ratios in the light of increased earnings (McManus et al., 2004). In addition, the stock market return is the ultimate goal for portfolios managers and investment strategists. Dividend payments can use to signal the future earnings.

Investors typically demand higher return on their stocks, so, they can invest in firms that provide them high returns and hence firms can attract more investors through increasing dividend yields, in turn, increase stock returns. In addition, information regarding the firm’s future prospects might be based on the size and stability of dividends (apGwilymet et al., 2000). That is, if the firm keeps a certain size of dividends for long time series, it might give an indicator about the future prospects of firm.

2. Previous Research

Dividend policy has been received much interest among corporate finance researchers over a long time period, especially the relationship between corporate dividend policy and stock returns. This is mainly due to the potential influence of dividend policy on a firm’s share prices.

The relationship between corporate dividend policy and stock market returns in developed countries is empirically investigated by a considerable number of researchers (e.g. Keim, 1985; Christie, 1990; Fama and French, 1992; Li, 1998; Morgan and Thomas, 1998; and McManus et al., 2004). Dividend policy and its effect on stock returns is examined in developed countries by a number of researchers (e.g. Keim, 1985; Fama and French, 1992; Morgan and Thomas, 1998; and McManus et al., 2004). They find a positive association between dividend yield and stock market returns. This implies that increasing dividend yields are associated with increase stock returns. The higher the dividend yield, the higher the stock returns. The tax rate on dividend income is higher than the tax rate on capital gains, so, this reason is presented as an interpretation for the positive relationship between dividend yield and stock returns (e.g. Litzerberger and Ramaswamy, 1979, 1982; Blume, 1980; and Keim, 1985). On the other hand, some researchers (e.g. Ben-Zion and Shalit, 1975; and Fama and French, 1992) find that stock
return is positively associated with financial leverage. This implies that financial leverage leads to increase the risk of stock and hence increase its returns.

Early, Keim (1985) examines the empirical relationship between dividend yield in the long run and stock prices as well as risk-adjusted return. The results show that there is a non-linear relationship between dividend yield and the prices of stock in the month of January, which is similar to Gordon (1959) and Ben-Zion and Shalit (1975) while different from Brown et al. (1977); Litzenberger and Ramaswamy (1979); Blume (1980) and Litzenberger and Ramaswamy (1982). In addition, he does not find relationship between dividend yield and the size of the firm. Dividend yield and raw returns are concentrated in the month of January.

Fama and French (1992) investigate the impact of some explanatory variables such as market risk, the size of the firm, earnings-price ratio, the book to market ratio of stock and financial leverage on stock returns by using cross-sectional regression analysis. They find a strong association between the size of the firm, financial leverage, the book to market value of equity, earnings-price ratio, and stock returns which is consistent with Ben-Zion and Shalit (1975) and Chan et al (1991).

Morgan and Thomas (1998) examine the empirical relationship between dividend yields and stock prices after taking into consideration the effect of income tax rate. The results show a positive and significant association between dividend yields and stock prices, which involves the refusing of the tax-based hypothesis, which is similar to Litzenberger and Ramaswamy (1979); Blume (1980); Litzenberger and Ramaswamy (1982); Liu and Gombola (1993), while in contrast with Gordon (1959) and Keim (1985). The results also show that the risk-adjusted returns are positively affected by high yielding stocks, negatively influenced by low yielding stocks, which is in line with Keim (1985).

In a recent study, McManus et al (2004) investigate the relationship between stock returns and dividend yields by introducing the effect of dividend payout ratio, the size of the firm and seasonality. The results reveal a high correlation between earnings yield and dividend yields, which is similar to Wu and Wang (2000). They also find that stock prices and the size of the firm are negatively correlated, which is similar to Ben-Zion and Shalit (1975); Fama and French (1992) and Rao et al (1992) while in contrast with Chan et al (1991). High dividend yields lead to high abnormal stock prices. There is a highly positive significant and strong relationship between stock returns and dividend yield, which is similar to Litzenberger and Ramaswamy (1979); Blume (1980); Litzenberger and Ramaswamy (1982) and contradicts with Keim (1985). In addition, there is inverse and significant relationship between stock returns and dividend payout ratio, which is consistent with Walter (1956). Finally, the relationship between dividend yield and returns is not changed and remains significant by the addition of dividend payout as an extra independent variable.
3. Hypotheses

Previous research suggests that there is a relationship between dividend policy and stock returns as well as a relationship with other control variables (e.g. Keim, 1985, 1986; Fama and French, 1992; Morgan and Thomas, 1998; and McManus et al., 2004). Therefore, those relations are constructed in the form of hypotheses (six hypotheses); each hypothesis represents an expected relationship between one independent variable and the dependent variable (stock returns). Therefore, the following are the hypotheses:

H1: there is a positive relationship between the excess return on the market and the excess return on the firm’s stock in Jordan.
H2: there is a positive relationship between dividend yield and the excess return on the firm’s stock in Jordan.
H3: there is a negative relationship between dividend payout ratio and the excess return on the firm’s stock in Jordan.
H4: there is a negative relationship between the size of the firm and the excess return on the firm’s stock in Jordan.
H5: there is a positive relationship between financial leverage and the excess return on the firm’s stock in Jordan.
H6: there is a positive relationship between the ratio of the book value per share to the market value per share and the excess return on the firm’s stock in Jordan.

4. Research Method

4.1 The sample of the study

As a sample, all firms listed on the Amman Stock Exchange during the period from 2002 to 2008 are taken to examine the empirical relationship between dividend policy and stock returns. This study includes both firms which are dividend-paying and those not paying cash dividends. The exclusion of non-dividend-paying firms would result in a well-known selection bias problem (AL-Malkawi, 2007). Concerning the number of firms that used to examine the empirical relationship between dividend policy and stock returns, firms enter and leave the sample each year, so, the number of firms is different from year to year (unbalanced data), and thus there is no survival bias in the data (e.g. Morgan and Thomas, 1998; McManus et al., 2004). Some firms are excluded from the sample because they have negative book value per share, as well as some firms are also excluded from the analysis because they have zero stock return (highly illiquid shares). In addition, one services firm is excluded in 2007 because it has financial leverage equal to one, which means there is no equity issuance (all-debt listed firm) for this firm in that year. The final number of observations which included to examine the empirical relationship between dividend policy and stock returns is 1093.

4.2 Statistical approach

First of all, summary statistics such as minimum, maximum, mean, and standard deviation are utilized to provide a broad description of the characteristics of all variables that are used in the analysis. The unbalanced panel data (cross-sectional and time series) is used to examine the empirical relationship between the two dividend policy measures (dividend
yield and dividend payout ratio) and stock returns after controlling for the market return, the size of the firm, financial leverage, and the ratio of the book value per share to the market value per share. In addition, the correlation coefficients are used to test the strength and the direction of the relationship between each pair of independent variables as well as between each explanatory variable and dependent variable. Therefore, t test and F test are used for checking the significance of the multiple regression. On one hand, t test is used to test if the relationship between each independent variable individually is significant or not, on the other hand, F test is used to check if the relationship between the dependent variable and the set of all independent variables is significant or not. Therefore, the quantitative methods are used to examine the previous relationships. SPSS statistical software package (version 18) is used for running the multiple regressions in order to obtain the results.

4.3 Variables definition

The variables of the relationship between dividend policy and the excess return on the firm’s stock are derived from the studies of a number of the previous researchers (e.g. Fama and MacBeth, 1973; Ben-Zion and Shalit, 1975; Blume, 1980; Reinganum, 1981; Banz, 1981; Keim, 1985; Lakonishok and Shapiro, 1986; Chan et al., 1991; Fama and French, 1992; Morgan and Thomas, 1998; McManus et al., 2004; and Adamiet al, 2010).

4.3.1 Dependent variable

Excess return on the firm’s stock \((\text{Ln} R_t - R_{t},t)\)

This variable can be computed by taking the natural logarithm of the closing price of stock (at the end of the year) plus the dividends per share divided by the price of stock at the beginning of the year (opening price) minus risk-free rates for each year. In Jordan, there is no 3-month Treasury Bills as well as the data concerning the risk-free rates on 6-month and 12-months treasury Bills are not available for the whole period of study (2002-2008), so, the weighted-average interbank interest rates can be used in lieu of risk-free rates. This is represented algebraically as follows.

\[
(\text{Ln}R_t - R_{t},t) = \ln\left(\frac{P_t + D_t}{P_{t-1}}\right) - R_{f,t}
\]  

(1)

Where, \(R_{f,t}\) denotes the weighted-average interbank interest rates, \(P_t, P_{t-1}\) the closing and opening price of stock, respectively, \(D_t\) denotes the dividends per share.

4.3.2 Independent variables

Excess return on the market \((\text{Ln} R_{m,t} - R_{f,t})\)

To calculate this variable, the risk-free rate is subtracted from the yield of the division of the natural logarithm of market index (Amman Stock Market index) in the current year by the market index in the previous year. This is represented algebraically as follows.
\[(\text{Ln}R_{m,t} - R_{f,t} = \text{Ln} \left( \frac{\text{INDEX}_t}{\text{INDEX}_{t-1}} \right) - R_{f,t}) \] (2)

Where, \(\text{INDEX}_t, \text{INDEX}_{t-1}\) are denote the market index (Amman Stock Market index) in the current year by the market index in the previous year.

**Dividend yield (DY)**

To calculate this variable, cash dividends paid to common stockholders divided by the market value of stock (market capitalization) at the beginning of the year. This is represented algebraically as follows.

\[DY_t = \sum \frac{DIV_i}{P_{i-1}} \] (3)

**Logarithm of market value (SIZE)**

This variable is calculated by multiplying the number of subscribed shares by the share price at the beginning of the year (market capitalization) for each year and then the natural logarithm is applied. This is represented algebraically as follows.

\[\text{SIZE}_t = \text{Ln}(P_{t-1} \times \# \text{shares}) \] (4)

**Financial leverage (LEV)**

To calculate this variable, total debt (total liabilities) is divided by total assets for each year. This is represented algebraically as follows.

\[\text{LEV}_t = \sum \frac{DEBT_i}{ASSET_i} \] (5)

**Book to Market ratio (B/M):**

To calculate this variable, the book value per share is divided by the market value per share for each year. This is represented algebraically as follows.

\[(B/M)_t = \frac{B_i}{M_i} \] (6)

**4.4 The regression model**

The following regression model is used in this study in an attempt to examine the empirical relationship between dividend policy and the excess return on the firm’s stock in the Jordanian context after controlling for the excess return on the market, the size of the firm, financial leverage, and the ratio of the book value per share to the market value per share that are likely affect the relationship between dividend policy and the excess return on the firm’s stock. This model is based on Keim (1985), Fama and French (1992), Morgan and Thomas (1998), and McManus et al (2004). I extend these models by including the six independent variables together (dividend yield, dividend payout ratio, market return, financial leverage, the size of the firm, and the ratio of the book value per share to the market value per share).
\[(\text{Ln}R_t - R_{f,t}) = \beta_0 + \beta_1 (\text{Ln}R_{m,t} - R_{f,t}) + \beta_2 DY_t + \beta_3 PR_t + \beta_4 (B/M)_t + \beta_5 \text{LEV}_t + \beta_6 \text{LnSIZE}_t + \epsilon_t \]

\[(7)\]

Where, \(R_t\) denotes the stock returns, \(R_{f,t}\) denotes the risk-free (3-month Treasury Bills) rates, \(R_{m,t}\) denotes the Amman Stock market return, \(DY_t\) denotes the dividend yield, \(PR_t\) denotes the dividend payout ratio, \((B/M)_t\) denotes the ratio of the book value per share to the market value per share, \(\text{LEV}_t\) denotes the financial leverage, \(\text{SIZE}_t\) denotes the size of the firm (market capitalization), \(\epsilon_t\) is a random variable referred to as the error term.

5. The Results of Hypotheses Testing

5.1 Summary statistics

Table 1 presents the minimum, maximum, mean, and standard deviation of all variables utilized in the analysis of the relationship between dividend policy and the excess return on the firm’s stock.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\text{Ln}R_t - R_{f,t})</td>
<td>-.9777</td>
<td>1.9470</td>
<td>.0489</td>
<td>.4527</td>
</tr>
<tr>
<td>(\text{Ln}R_{m,t} - R_{f,t})</td>
<td>-.4109</td>
<td>.4586</td>
<td>.0860</td>
<td>.3298</td>
</tr>
<tr>
<td>(DY)</td>
<td>.0000</td>
<td>.5882</td>
<td>.0229</td>
<td>.0368</td>
</tr>
<tr>
<td>((B/M)_t)</td>
<td>.0588</td>
<td>5.5555</td>
<td>.7943</td>
<td>.5381</td>
</tr>
<tr>
<td>(\text{LEV}_t)</td>
<td>.0002</td>
<td>.9745</td>
<td>.3844</td>
<td>.2574</td>
</tr>
<tr>
<td>(\text{LnSIZE}_t)</td>
<td>12.5245</td>
<td>24.4984</td>
<td>16.5758</td>
<td>1.6225</td>
</tr>
</tbody>
</table>

\(N = 1093\)

Note: \(\text{Ln}R_t - R_{f,t}\) denotes the excess return on the firm’s Stock (%), \(\text{Ln}R_{m,t} - R_{f,t}\) denotes the excess return on the market (%), \(DY\) denotes the dividend yield (%), \((B/M)_t\) denotes the ratio of the book value per share to the market value per share (%), \(\text{LEV}_t\) denotes the financial leverage (%), \(\text{LnSIZE}_t\) denotes the (natural logarithm of) the size of the firm (JD thousands).

In Table 1, the excess return on the market (the natural logarithm of the market return minus the risk free rate) is the first independent variable. Its values range from a minimum of \(-.4109\) to a maximum of \(.4586\). It has mean value equal to \(.0860\), and standard deviation equal to \(.3298\), implying that high variations in terms of excess return on the market across the period of the study.

Dividend yield is the second explanatory variable. It varies from \(.0000\) to \(.5882\); i.e. some firms did not pay cash dividends at all, while some firms pay high cash dividends, whereas its mean is \(.0229\), indicating that everyone Jordanian Dinar (JD1) invested yields, on average, about 2.3 cents in the form...
of cash dividend, and standard deviation is .0368, suggesting slight variations among firms listed on the Amman Stock Exchange over the period of study (2002-2008).

The ratio of the book value per share to the market value per share is the fourth variable. It ranges from .0588, telling that some firms have small book value for their stocks, to 5.5555, which means that some firms have book value per share five and half times greater than their market value per share, with mean of .7943, indicating that the book value per share for the firms listed on the Amman Stock Exchange, on average, is equal about 79% of their market value per share, and standard deviation of .5381, which means high variations amongst firms in terms of the ratio of the book value per share to the market value per share.

The fourth variable is financial leverage. Its values range from a minimum of .0002 to a maximum of .9745. That means, the ratio of total liabilities to total assets is very small for some firms, indicating that some firms depend heavily on issuing equity to finance their assets, while total liabilities is close to total assets for some firms, implying that some firms rely largely on debt to finance their assets. Its mean value equal to .3844, which shows that the firms listed on the Amman Stock Exchange, in general, do not depend highly on debts to finance their assets, and standard deviation equal to .2574, implying that high variations among firms regarding the financial leverage variable.

The size of the firm is the last independent variable. Its values vary from 12.5245 (the natural logarithm of market capitalization) to 24.4984, its mean equal to 16.5758, and standard deviation of 1.6225, showing high variations among the firms in their size. You can find some firms listed on the Amman Stock Exchange have a huge number of shares and, at the same time, high stock prices, while, on the other hand, you can find some ones have small number of shares and high stock prices.

Excess return on the firm’s stock (the natural logarithm of the return on the firm’s stock minus the risk free rate) is the dependent variable. Its values range from the minimum of -.9777 to the maximum of 1.9470, with mean value equal to .0489, and standard deviation measuring .4527, indicating high variations amongst the firms listed on the Amman Stock Exchange in terms of excess returns on their stocks.

5.2 Hypothesis testing

Before proceeding to discuss the testing of hypotheses, the correlation coefficients between the independent variables will be presented to show the strength and the direction of the relationship between any pair of independent variables, as well as the dependent variable.
Table 2: Correlation coefficients of dependent and independent variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>$LnR_t - R_f$</th>
<th>$LnR_m - R_f$</th>
<th>$DY$</th>
<th>$PR$</th>
<th>$B/M$</th>
<th>$LEV$</th>
<th>$LnSIZE$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$LnR_t - R_f$</td>
<td>1</td>
<td>.508**</td>
<td>.297*</td>
<td>.063</td>
<td>-.225*</td>
<td>.022</td>
<td>-.221**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
<td>.000</td>
<td>.037</td>
<td>.000</td>
<td>.474</td>
<td>.000</td>
</tr>
<tr>
<td>$LnR_m - R_f$</td>
<td>.508**</td>
<td>1</td>
<td>.133*</td>
<td>.022</td>
<td>-.054</td>
<td>.003</td>
<td>-.177**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
<td>.000</td>
<td>.477</td>
<td>.077</td>
<td>.931</td>
<td>.000</td>
</tr>
<tr>
<td>$DY$</td>
<td>.297*</td>
<td>.133*</td>
<td>1</td>
<td>.712*</td>
<td>-.008</td>
<td>-.077</td>
<td>.021</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
<td>.000</td>
<td>.781</td>
<td>.011</td>
<td>.478</td>
<td></td>
</tr>
<tr>
<td>$PR$</td>
<td>.063</td>
<td>.022</td>
<td>.712*</td>
<td>1</td>
<td>-.121*</td>
<td>-.081*</td>
<td>.238**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.037</td>
<td>.477</td>
<td>.000</td>
<td>.000</td>
<td>.007</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>$B/M$</td>
<td>-.225*</td>
<td>-.054</td>
<td>-.008</td>
<td>-.121*</td>
<td>1</td>
<td>-.143*</td>
<td>-.409**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.077</td>
<td>.781</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>$LEV$</td>
<td>.022</td>
<td>.003</td>
<td>-.077</td>
<td>-.081*</td>
<td>-.143*</td>
<td>1</td>
<td>.236</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.474</td>
<td>.931</td>
<td>.011</td>
<td>.007</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>$LnSIZE$</td>
<td>-.221**</td>
<td>-.177*</td>
<td>.021</td>
<td>.238*</td>
<td>-.409*</td>
<td>.236*</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.478</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
</tbody>
</table>

**, * Correlation is significant at the 0.01, 0.05 levels (2-tailed), respectively.

Note: the table shows Pearson correlation coefficients. The number of cases is 1093.

Table 2 shows the correlation coefficients among the variables used in this study. It can be seen that the correlation coefficient between the excess return on the firm’s stock and dividend yield is $0.297^*$, which is strongly positive and highly significant. That is, the higher the dividend yield, the higher the excess return on the firm’s stock and the lower the dividend yield, the lower the excess return on the firm’s stock.

The highest correlation is $0.712^*$ between dividend yield and dividend payout ratio (the two measures of dividend policy), which is strongly positive and highly significant, which leads to the existence of Multicollinearity (one of the violation in the model assumptions). Therefore, these two variables should not be included together in the same regression model.

Expected relationships between dividend yield and some of control variables and stock returns that formed the hypotheses are tested below one by one.

The previous literature suggests that the excess return on the market has an effect on the excess return on the firm’s stock (e.g. Fama and MacBeth, 1973; Blume, 1980; Reinganum, 1981; Keim, 1985, 1986; Lakonishok and Shapiro, 1986; Fama and French, 1992; Morgan and Thomas, 1998; and McManus et al., 2004). Generally, the lower the excess return on the market, the lower the excess return on the firm’s stock and the higher the excess return on the market, the higher the excess return on the firm’s stock. Therefore, based on the above discussion regarding the relationship between the excess return on the market and the excess return on the firm’s stock, the following hypothesis can be formulated.
H1: there is a positive relationship between the excess return on the market and the excess return on the firm’s stock in Jordan.

In order to test this and the remaining hypotheses, the following multiple regression model is used.

\[ \ln R_t - R_{f,t} = \beta_0 + \beta_1 \ln R_{m,t} - R_{f,t} + \beta_2 DY_t + \beta_3 (B / M)_t + \beta_4 LEV_t + \beta_5 \ln SIZE_t + \epsilon_t \] (8)

Where, \( R_t \) is denotes the stock returns, \( R_{f,t} \) is denotes the risk-free rates, \( R_{m,t} \) is denotes the market return, \( DY_t \) is denotes the dividend yield, \( (B / M)_t \) is denotes the ratio of book value per share to the market value per share, \( LEV_t \) is denotes the financial leverage, \( SIZE_t \) is denotes the size of the firm, \( \epsilon_t \) is a random variable referred to as the error term.

As can be seen from Eq. 8, dividend payout ratio is not included. This is for two reasons. If the correlation coefficient between two independent variables is 0.70 or more, it leads to the existence of Multicollinearity. Dividend payout ratio variable, not dividend yield, is excluded because the correlation coefficient of payout ratio is materially less than that of dividend yield. However, dividend payout ratio will be added to Eq. (8) later to examine its relationship with the excess return on firm’s stock after the discussion of all hypotheses.

The results of the relationship between the set of independent variables (except dividend payout ratio) and the dependent variable, as represented in Model 8 are presented in Table 3.

Table 3: Regression Coefficients of independent variables 2002-2008

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.473</td>
<td>.130</td>
<td>11.357</td>
<td>.000</td>
</tr>
<tr>
<td>( \ln R_{m,t} - R_{f,t} )</td>
<td>.555</td>
<td>.033</td>
<td>16.836</td>
<td>.000</td>
</tr>
<tr>
<td>( DY )</td>
<td>3.097</td>
<td>.289</td>
<td>10.731</td>
<td>.000</td>
</tr>
<tr>
<td>( B / M )</td>
<td>-.264</td>
<td>.022</td>
<td>-12.234</td>
<td>.000</td>
</tr>
<tr>
<td>( LEV )</td>
<td>.115</td>
<td>.042</td>
<td>2.739</td>
<td>.006</td>
</tr>
<tr>
<td>( \ln SIZE )</td>
<td>-.083</td>
<td>.007</td>
<td>-11.207</td>
<td>.000</td>
</tr>
</tbody>
</table>

N = 1093  a. Dependent Variable: \( \ln R_t - R_{f,t} \)

Eq. (8):

\[ \ln R_t - R_{f,t} = \beta_0 + \beta_1 \ln R_{m,t} - R_{f,t} + \beta_2 DY_t + \beta_3 (B / M)_t + \beta_4 LEV_t + \beta_5 \ln SIZE_t + \epsilon_t \]

Table 3 shows that the Sig. value associated with the t test for the excess return on the market of .000, therefore, the relationship between the excess return on the market and the excess return on the firm’s stock is positive and highly significant, implying that market return might lead to increase risk and hence high stock return as predicted by SLB model. The slope coefficient of this variable is .555, suggesting that a 1 unit increase in the excess return on the market would have an increase of .555 units in the excess return on the firm’s stock, other things being constant. For firms listed on the Amman Stock
Exchange, the lower the excess return on the market, the lower the excess return on the firm’s stock and the higher the excess return on the market, the higher the excess return on the firm’s stock. The $t$ value of the excess return on the market is 16.722, which is the highest value among the other variables, i.e., the excess return on the market is the more dominant effect on the excess returns on the firm’s stock.

Furthermore, this result is consistent with Fama and MacBeth (1973), Blume (1980), Reinganum (1981), Keim (1985, 1986), Lakonishok and Shapiro (1986), Fama and French (1992), Morgan and Thomas (1998); and McManus et al (2004), who find a positive and significant relationship between the excess return on the market and the excess return on the firm’s stock. Therefore, the result of the coefficient of the excess return on the market from as identified in Table 8 supports H1 hypothesis.

The previous literature suggests that dividend yields have an effect on the excess return on the firm’s stock (e.g. Black and Scholes, 1974; Brown et al., 1977; Litzenberger and Ramaswamy, 1979; Blume, 1980; Morgan, 1982; Miller and Scholes, 1982; Elton et al., 1983; Hess, 1983; Keim, 1985, 1986; Fama and French, 1988; Levis, 1989; Morgan and Thomas, 1998; and McManus et al., 2004). Generally, firms with lower dividend yield might display lower stock returns and firms with higher dividend yield might display higher stock returns. Therefore, based on the previous discussion regarding the relationship between dividend yield and the excess return on the firm’s stock, the following hypothesis can be formulated.

$\textbf{H2:}$ there is a positive relationship between dividend yield and the excess return on the firm’s stock in Jordan.

Table 3 shows that the Sig. value associated with the $t$ test for dividend yield of .000 is less than .05, .01 (significance levels), therefore, the relationship between dividend yield and the excess return on the firm’s stock is positive and highly significant, implying that the higher dividend yield might be because the reducing of stock price which leads to increase risk and hence high stock market returns. For firms listed on the Amman Stock Exchange, the lower the dividend yield, the lower the excess return on the firm’s stock and the higher the dividend yield, the higher the excess return on the firm’s stock. The coefficient of (DY) is large and highly significant.


Concerning the third hypothesis, the previous research suggests that the excess return on the firm’s stock might be affected by the size of the firm (e.g. Ben-Zion and Shalit, 1975; Banz, 1981; Keim, 1983, and 1985; Chan et al., 1991; Fama and French, 1992; Rao et al, 1992; Morgan and Thomas, 1998; and McManus et al, 2004). Small firms demonstrate higher excess returns on the firm’s stock while large firms show lower excess returns on the firm’s stock.

Considering all previously discussed arguments regarding the association between the size of the firm and the excess return on the firm’s stock, the following hypothesis can be constructed.
H3: there is a negative relationship between the size of the firm and the excess return on the firm’s stock in Jordan.

Table 3 reports that the Sig. value associated with the t test for the size of the firm (the natural logarithm of market capitalization) is .000, therefore, the relationship between the size of the firm and the excess returns on the firm’s stock is negative and highly significant at both significance levels of 0.05 and 0.01, implying that small firms are more likely to be firms with poor prospects, low prices of stocks, high stock risk and hence stock market returns. That is, large firms show lower excess returns on the firm’s stock, while small firms display higher excess returns on the firm’s stock.

In addition, this result is similar to Ben-Zion and Shalit (1975), Banz (1981), Keim (1983, 1985), Chan et al (1991), Fama and French (1992), Rao et al (1992), and McManus et al (2004), who find a negative and significant relationship between the size of the firm and the excess returns on the firm’s stock, as well as in line with Morgan and Thomas, 1998 in the month of September but, at the same time, in contrast with Morgan and Thomas, 1998, who find a positive and significant relationship between the size of the firm and the excess returns on the firm’s stock in January and April while. So, the result of the coefficient of the size of the firm from Table 3 supports H3 hypothesis.

With respect to the fourth hypothesis, the previous research suggests that the excess returns on the firm’s stock might be affected by financial leverage (e.g. Fama and MacBeth, 1973; Ben-Zion and Shalit, 1975; Basu, 1983; Bhandari, 1988; Fama and French, 1992; Korteweg, 2004; and Adamiet al., 2010). There is a positive relationship between financial leverage and excess returns on the firm’s stock, i.e. the higher the financial leverage, the higher the excess returns on the firm’s stock and the lower the financial leverage, the lower the excess returns on the firm’s stock.

Therefore, based on the previous discussion concerning to the relationship between financial leverage and the excess return on the firm’s stock, the following hypothesis can be formulated.

H4: there is a positive relationship between financial leverage and the excess return on the firm’s stock in Jordan.

Table 3 reports that the Sig. value associated with the t test for the financial leverage is (.006), therefore, the relationship between the financial leverage and the excess returns on the firm’s stock is strongly significant, implying that firms with high financial leverage might display higher stock risk and hence higher stock market return than firms with low financial leverage. That is, the leveraged firms in the Jordanian stock market display higher excess returns on the firm’s stock, while non-leveraged firms show lower excess returns on the firm’s stock. The coefficient of the financial leverage is equal to .115, suggesting that a 1 unit increase in the financial leverage would have increase of.115 units in the excess returns on the firm’s stock, other things being constant. The t value of financial leverage is 2.739; the smallest value among the other variables, i.e, financial leverage has less impact on the excess returns on the firm’s stock.

Moreover, this result is in line with Fama and MacBeth (1973), Ben-Zion and Shalit (1975), Basu (1983), Bhandari (1988), Fama and French (1992), Korteweg (2004) and Adami et al (2010), who find a positive and significant relationship between financial leverage and the excess returns on the firm’s
stock. So, the result of the coefficient of financial leverage from Table 3 supports H4 hypothesis.

With regard to the last hypothesis, the previous literature suggests that the excess returns on the firm’s stock might be influenced by the ratio of the book value per share to the market value per share (e.g. Stattman, 1980; Rosenberg et al., 1985; Chan et al., 1991; Fama and French, 1992; and Griffin and Lemmon, 2002). That is, the lower the book value per share to the market value per share, the lower the excess returns on the firm’s stock and the higher the book value per share to the market value per share, the higher the excess returns on the firm’s stock.

Therefore, based on the above discussion concerning the relationship between the ratio of the book value per share to the market value per share and the stock return; the following hypothesis can be formulated.

**H5**: there is a positive relationship between the ratio of the book value per share to the market value per share and the excess return on the firm’s stock in Jordan.

Table 3 shows that the Sig. value associated with the t test for the ratio of the book value per share to the market value per share is .000, therefore, the relationship between the ratio of the book value per share to the market value per share and the excess returns on the firm’s stock is negative and highly significant at both level of significance of .05 and .01. The coefficient of the ratio of the book value per share to the market value per share is equal to -.264, suggesting that a 1 unit increase in the ratio of the book value per share to the market value per share would have decrease of .264 units in the excess returns on the firm’s stock, other things being constant.

Furthermore, this result is in contrast with Stattman (1980), Rosenberg et al (1985), Chan et al (1990), Fama and French (1992) and Griffin and Lemmon (2002), who find a positive relationship between the ratio of the book value per share to the market value per share and the excess returns on the firm’s stock. So, the result does not confirm H5 hypothesis. This result might be because of the high correlation between the ratio of the book value per share to the market value per share and the size of the firm.

The relationship between the excess returns on the firm’s stock and the set of independent variables is provided by the following estimated regression equation.

\[
L_nR_t - R_{f,t} = 1.473 + .555 L_nR_{m,t} - R_{f,t} + 3.097 D Y_t - 2.64(B / M)_t + .115 L_nE V_t - .08 L_nS I Z E_t
\]

(9)

**Table 4**: Model Summary for Eq. (8)

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.646^a</td>
<td>.418</td>
<td>.415</td>
<td>.34623931</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), LNSIZE, DY, L_nR_m - R_f, LEV, B/M

**Eq. (8)**:

\[
L_nR_t - R_{f,t} = \beta_0 + \beta_1 L_nR_{m,t} - R_{f,t} + \beta_2 D Y_t + \beta_3 (B / M)_t + \beta_4 L_nE V_t + \beta_5 L_nS I Z E_t + \epsilon_t
\]
Table 4 shows that approximately 42% of the variability in the excess return on the firm’s stock can be explained by the linear relationship between (excess return on the market, dividend yield, the ratio of the book value per share to the market value per share, financial leverage, and the size of the firm) as independent variables and the excess return on the firm’s stock, while 58% of the variability in the excess return on the firm’s stock caused by external factors.

The Sig. value associated with the F test can be used to check for the overall significance. Generally, the F test (overall significance) is used to determine whether a significant relationship exists between the dependent variable and the set of independent variables. Therefore, the following table can be used to test that.

**Table 5: ANOVA for Eq. (8)**

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>93.556</td>
<td>5</td>
<td>18.711</td>
<td>156.081</td>
</tr>
<tr>
<td>Residual</td>
<td>130.311</td>
<td>1087</td>
<td>.120</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>223.867</td>
<td>1092</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), LNSIZE, DY, LnRm – Rf, LEV, B/M
b. Dependent Variable: LnRt – Rf

Table 5 shows that the Sig. value is less than .05 and .01 (levels of significance), which means that the relationship between both the set of independent variables and the dependent variable is highly significant.

This section discusses the empirical relationship between dividend payout ratio, which is dropped from the previous analysis because of high correlation between it and dividend yield as identified in Table 2, and stock returns. Therefore, the following multiple regression model will be used to analyze the above relation.

\[
\text{LnR}_t - R_f = \beta_0 + \beta_1 \text{LnR}_{m,t} - R_f + \beta_2 \text{DY} + \beta_3 \text{PR}_t + \beta_4 (B/M)_t + \beta_5 \text{LEV}_t + \beta_6 \text{LnSIZE}_t + e_t
\]  

(10)

Where, PR denotes the dividend payout ratio.

The results of the relationship between (dividend yield, dividend payout ratio, excess return on the market, the ratio of the book value per share to the market value per share, financial leverage, and the size of the firm) and stock returns are presented in the following table.
Table 6: Regression Coefficients of independent variables

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.313</td>
<td>.131</td>
<td>10.040</td>
<td>.000</td>
</tr>
<tr>
<td>$\ln R_m - R_f$</td>
<td>.546</td>
<td>.033</td>
<td>16.765</td>
<td>.000</td>
</tr>
<tr>
<td>$DY$</td>
<td>4.819</td>
<td>.413</td>
<td>11.668</td>
<td>.000</td>
</tr>
<tr>
<td>$PR$</td>
<td>-.250</td>
<td>.043</td>
<td>-5.750</td>
<td>.000</td>
</tr>
<tr>
<td>$B/M$</td>
<td>-.270</td>
<td>.021</td>
<td>-12.700</td>
<td>.000</td>
</tr>
<tr>
<td>$LEV$</td>
<td>.086</td>
<td>.042</td>
<td>2.055</td>
<td>.040</td>
</tr>
<tr>
<td>$\ln SIZE$</td>
<td>-.071</td>
<td>.008</td>
<td>-9.305</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Dependent Variable: $\ln R_t - R_f$

$$\ln R_t - R_f = \beta_0 + \beta_1 \ln R_m - R_f + \beta_2 DY + \beta_3 P - OUT_t + \beta_4 (B/M)_t$$

+ $\beta_5 LEV_t + \beta_6 \ln SIZE_t + \epsilon_t$

Table 6 shows that the relationship between dividend payout ratio and the excess return of firm’s stock is negative and highly significant as identified from the Sig. value associated with payout ratio which is in line with McManus et al. (2004), implying that the firms with higher dividend payout ratios are more likely to display less risk and hence low stock market returns than firms with lower dividend payout ratios. That is, the higher the payout ratio, the lower the excess return on the firm’s stock and the lower the payout ratio, the higher the excess return on the firm’s stock. Furthermore, the coefficients of all independent variables remain significant.

6. Summary and Concluding Remarks

The purpose of this study is to examine the empirical relationship between dividend policy and stock returns in the Jordanian context. The results show that there is a positive and significant relationship between the excess market return and the excess return on the firm’s stock which is similar to Fama and French, (1988), Levis (1989), Morgan and Thomas (1998), and McManus et al. (2004). This implies that market return might lead to increased risk and hence high stock returns as predicted by Sharpe (1964), Lintner (1965), and Black (1972) model.

The results also show that there is a strongly positive and significant relationship between dividend yield and the excess return on the firm’s stock which is similar to Fama and French (1988), Levis (1989), Morgan and Thomas (1998), and McManus et al. (2004). The positive relationship between dividend yield and stock returns could be caused by information bias as suggested by Miller and Scholes (1982). The tax rate on dividend income is higher than the tax rate on capital gains among US companies, so, this reason is presented as an interpretation for the positive relationship between dividend yield and stock returns (e.g. Litzerberger and Ramaswamy, 1979, 1982; Blume, 1980; and Keim, 1985), while clientele effect could be another interpretation for this relationship (Scholz, 1992). However, in the case of the Jordanian firms there is no tax on dividend income nor on capital gains. The positive relationship between dividend yield and stock returns for Jordanian firms might be because of dividend signalling by firms’ managers and a
delayed price response to these signals from investors (e.g. as in Morgan and Thomas, 1998).

The results show a positive and significant relationship between financial leverage and the excess return on the firm’s stock which is in line with Fama and MacBeth (1973), Ben-Zion and Shalit (1975), Basu (1983), Bhandari (1988), Fama and French (1992), Korteweg (2004), and Adamiet et al (2010) for the firms listed on the Amman Stock Exchange, implying that financial leverage leads to increase stock's risk and hence high stock market returns. That is, the firms which have high financial leverage have higher excess returns and the firms which have low financial leverage display lower excess returns.

There is a negative and significant relationship between the ratio of the book value per share to the market value per share and the excess return on the firm’s stock which is inconsistent with (e.g. Stattman, 1980; Rosenberg et al., 1985; Chan et al., 1991; Fama and French, 1992; and Griffin and Lemmon, 2002). It implies that the firms with high ratio of the book value per share to the market value per share display lower the excess return on the firm’s stock and, in turn, firms with low ratio of the book value per share to the market value per share display higher the excess return on the firm's stock. This result might be because of the high correlation between the ratio of the book value per share to the market value per share and the size of the firm.

The results also show that there is a negative and significant relationship between the size of the firm and the excess return on the firm’s stock which is similar to (e.g. Ben-Zion and Shalit, 1975; Banz, 1981; Keim, 1983, 1985; Chan et al., 1991; Fama and French, 1992; Rao et al, 1992; Morgan and Thomas, 1998; and McManus et al, 2004). It implies that small stocks are more likely to be firms with poorer prospects, lower stock prices, higher the ratio of the book value per share to the market value per share and higher stock risk and hence higher stock returns. On the other hand, firms with high market equity are more likely to have strong prospects, leading to high stock prices and low the ratio of the book value per share to the market value per share (Fama and French, 1992).

Finally, after the addition of dividend payout ratio to the multiple regression, the results demonstrate that dividend payout ratio is negatively associated with the excess return on the firm’s stock. This implies that firms with higher dividend payout ratios are more likely to display less risk and hence low stock market returns than firms with lower dividend payout ratios. That is, firms which paid higher cash dividends display lower stock returns which is similar to (e.g. McManus et al., 2004). This result might be because of income clientele effect rather than tax clientele effect. Therefore, firms could attract more investors who prefer current income by paying high dividends. On the other hand, firms could pay high dividends to monitor the conflict between stockholders and management (agency cost).

Overall, the results are strongly support the prior hypotheses, and demonstrate broad consistency with a large body of literature from studies on other countries. The empirical examination of the relationship between dividend policy and stock market returns has some limitations such as (i) The time series is short (2002-2008). Therefore, the precise comparison between this study and the above mentioned studies is not direct, (ii) The Jordanian Stock Market is small compared to the UK, and the US Stock Markets, therefore, the
comparison will not be direct between Jordanian Stock Market and the others, and (iii) The number of firms included in the analysis is relatively small. So, it was difficult to classify the firms into portfolios to examine the empirical relationship as done by Keim (1985); Fama and French (1992); Morgan and Thomas (1998); and McManus et al (2004).

Based on the empirical results of the relationship between dividend policy and stock market returns, further related research is recommended (i) Future researchers should conduct similar study in other emerging markets similar to Jordanian market, (ii) Examine the empirical relationship between dividend policy and stock market returns by using monthly data to show the concentration of dividend (or the seasonality of dividend), (iii) Examine the effect of earnings to price (E/P) on the relationship between dividend policy and stock market returns.
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