The Effect of Ownership Structure on Dividends Policy
in Jordanian Companies

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Abstract
This paper aims at investigating the effect of ownership structure on corporation dividend policy using 35 Jordanian corporations listed on the Amman Stock Exchange over the period 2005-2010. Two empirical models of dividend are used, namely, Full Adjustment Model and Partial adjustment Model, to examine the potential associations between ownership structures and dividend policy. Institutional ownership and managerial ownership were regressed against dividends. Full Adjustment Model was superior since it could explain 61.57% of the variation in dividend, compared to 20.65% for Partial Adjustment Model. The results suggests that institutional ownership provides incentives for controlling shareholders to use their influence for maximizing the value of firms by reducing the use of funds in low return projects, thus implying that more cash flows can be distributed as dividends. Moreover, managerial ownership has a negative coefficient in the Partial Adjustment Model, and the critical values are significant, whereas the Full Adjustment Model does not produce only the unexpected sign, but also it is significant. The unexpected sign for managerial ownership implies that Jordanian firms do not use dividends as a mechanism to reduce the agency problem between managers and shareholders.

Key words: Dividends Policy, Corporate Governance, Institutional Ownership, Managerial Ownership, Amman Stock exchange.

1. Introduction:
Dividends policy is one of the most important issues widely addressed in modern financial literature. The decisiveness of theories on perceived importance of dividend policy in determining the corporations value has made it one of the most debatable topics for researchers. This is
because the vast majority of empirical work does not provide the optimal explanation of corporations value with dividend policy.

The debate was on the ground of the unrealistic assumptions of Miller and Modigliani (1961), who posits that under certain assumptions, dividend policy is irrelevant. They assume that the capital market is perfect with no market frictions such as no tax, no asymmetric information, no agency cost, and no bankruptcy regardless of the amount of debt used. These assumptions make the corporations value independent of its dividend policy, suggesting that the value of the firm is not affected by the way of distributing income between dividends and retained earnings. More presicely, the irrelevancy propostion makes internal and external funds perfectly substitutes for each other. Hence, firms are indifferent between using internal or external funds for financing, making them able to distribute income as dividends to common stockholders. This propisiton was supported by Friend and Phuket (1964); Black and Scholes (1974).

In reality, the capital market is not perfect, making the dividend policy relevenat and largely affected by the presence of market frictions. Jensen and Meckling (1976); Rozeff (1982); Myers and Majluf (1984); Myer (1984); Easterbrook (1984); Jensen,(1986); and Stulz (1990) amongst others provide different explanations as to why the presence of market frictions such as agency costs and information asymmetries makes the dividend policy relevant.

Myers and Majluf (1984) and Myer (1984) suggest that, in the presence of asymmetric information, firms follow the hierarchy behavior with respect to each source of financing, implying that dividend policy is sticky. The underlying statement behind their argument is that dividend policy is used to accommodate the unforeseen fluctuation in profitability and investment opportunity.

According to the Agency Theory, Jensen and Meckling (1976) argue that high concentration may simultaneously lead major shareholders to give priority to their own interests, and subsequently agency problems may occur between shareholders and managers. In order to minimize agency problems, shareholders have to endure agency costs. Moreover, managerial ownership prevents conflicts of interest between the managers and owners and increases the value of the firm. Significant managerial ownership can align managers’ interests with those of outside shareholders, so that managers can have strong incentive to pursue value-maximizing behavior (alignment effects).

In contrast, Demsetz (1983) argue that too large ownership stake by managers could potentially lead them to worry more about their own
interests, not those of outside shareholders, hence decreasing the corporations value (entrenchment effects). Literature suggests different techniques for handling the agency problem to reduce its impact on the firm's value. Easterbrook (1984) suggests the use of both debt and dividend to reduce the free cash under management control. This is because management uses free cash flow for their own interests while it ignores those of shareholders, consequently harming the corporations value. Moreover, he argues that the responsibility of money management for the benefit of shareholders would have increased when managers would have to resort to capital markets for new cash funds. Therefore, dividends will be a way to get the money out of managers and distribute it to shareholders. Jensen(1986) argue that debt and dividend serve as a main substitute for mitigating the agency costs. However, using debt will create another type of agency problem, resulting from the expected conflict between shareholders and debtholders because of the assets substitution problem.

Debt and dividend are not the only tools suggested by literature to solve the agency problem, or at least reducing its costs and impact on the value. The presence of large institutional shareholders or managerial ownership are expected to align the interest of both shareholders and managers. Hence, one could expect that the ownership structure would affect the corporate dividend decisions.

Prior research on the relationship between ownership structure and dividend policy has largely focused on the corporations in the US and UK, where the markets in these countries are characterized as well regulated and ownership is widely distributed. Therefore, the present paper is distinguished from the previous ones on the basis of proxies of dependent and independent variables used and the empirical dividend model used to investigate relationship between dividend policy and ownership structure of Jordanian corporations listed on the Amman Stock Exchange.

This paper is organized as follows. Section 1.2 presents a review of the related literature. Section 1.3 develops the theoretical models and discusses the research methodology. Section 1.4 present and analyze the estimation results with some conclusions and recommendation.
2. Literature Review

Since the 1960’s, dividend policy has been a puzzle. Dividend puzzle is a concept in finance in which corporations that pay dividends are rewarded by investors who value their stocks accordingly, even though, according to many economists, it should not matter to investors whether a firm pays dividends or not. The reasoning goes that dividends, from the investor’s point of view, should have no effect on the process of valuing equity because the investor already owns the firm and, thus, he/she should be indifferent to either getting the dividends or having them re-invested in the firm. The reasons for the dividend puzzle have been attributed to a wide range of factors, including, among others, uncertainties, psychological /behavioral economic issues, tax-related matters and asymmetric information, (Ruben, 2002).

Ownership structure is an influential factor on firm policies. One of these policies is dividend policy. Prior researches examined the role of concentrated institutional ownership. Institutional stock ownership can reduce agency costs by monitoring firms. Rozef (1982) had initiated the adoption of agency cost in dividend determinant. He tested the agency theory of Jensen and Meckling (1976) by constructing a model of optimal dividend payout in which increased dividends lower agency costs, but raise transaction costs. He shows that dividend payout is negatively related to the percentage of stock held by insiders. Furthermore, he finds that outside shareholders demand a higher dividend payout if they own a higher fraction of the common equity and if their ownership is more disperse.

According to Shleifer and Vishny (1986), concentrated institutional ownership creates the incentives to monitor management, which overcomes the free-rider problem associated with dispersed ownership whereby small shareholders have not enough incentives to incur monitoring costs for the benefits of other shareholders. Due to the active monitoring of shareholders, managers are better aligned towards the objective of delivering shareholder value. In addition, institutional investors also find that it increasingly difficult to sell large portions of stock without depressing stock prices. Therefore, many institutional investors choose to effectively monitor manager’s behavior to increase stock performance rather than sell their holdings at a loss. Consequently, institutional investors are actively working to effect corporate policy decisions. The relationship between ownership and dividend may be positive or negative.
Lloyd et al., (1985) replicate the study conducted by Rozeff’s (1982) to introduce agency theory as an explanatory factor of dividend payout ratio. Their results provide a strong support to dividends as a partial solution to agency problems. Shleifer and Vishny (1986) examine the effects of ownership structure on dividend payout policy, Jensen et al., (1992) show that insider ownership is associated with significantly lower dividend payout among US firms. Their results also support Rozeff’s (1982) proposition that benefits of dividends in the firms with higher insider ownership have smaller effect reducing agency cost. However, as new evidence for Rozeff’s (1982) findings, Alli et al., (1993) conduct a study to investigate the alternative explanation of corporate dividend payout ratio. Their results support the positivity of relationship between institutional and insider ownership and dividend where it used to mitigate agency problem. Supporting Jensen et al (1992) results, Agrawal & Jayaraman (1994) find that firms with higher managerial holdings have lower dividend payout ratio. La Porta et al., (2000) conduct a study to investigate the dividend policy practices of large corporations on 33 countries. They conclude that, in countries with high legal protection, the minority shareholders receive higher dividends. Moreover, rapid growth firms pay lower dividends than those of less growing firms, which supports the idea that, when the company investment opportunities are good, shareholders prefer not to obtain dividends. Short et al., (2002) conduct a study considered the first example of using well established dividend payout models to examine the potential association between ownership structure and dividends policy. By using dividend models of Lintnre (1956); Waud (1966); and Fama and Babiak (1968), they conclude that a positive association between dividend payout policy and institutional ownership may go beyond increasing the dividend payout ratio. They also found some evidence to support a negative association between dividend payout policy and managerial ownership. Maury and Pajuste (2002); Farinha (2002) conclude that a negative relationship between ownership concentration and dividend. Hofler et al (2004) study this relationship for a sample of German corporations and show that institutional ownership is not significant in determining dividend payout. Karathanassis and Chrysanthropoulou (2005) extend the study of Short et al (2002), and examine the relationship between ownership structure and corporate dividend policy. Their results show inverse relationship between the strong presence of institutional portfolios and the high degree of concentration of the managerial ownership and the dividend change between the two most recent time periods was brought out. More specifically, in most of the models –except for the earnings trend model–,
there appears to be a statistically significant positive relationship between the adjusted independent variables and the presence of institutional investors, while, on the contrary, the adjusted independent variables show statistically significant negative correlation with the managerial ownership variable.

By using a sample of U.S firms, Bichara (2008) conduct a study to examine a theory that links dividends to institutional ownership in a framework of both information signaling and agency costs. He find that institutions are considered sophisticated investors with superior ability and stronger incentive to be informed about the firm quality compared to retail investors. Institutional investors display monitoring capabilities and can detect and correct managerial pitfalls, thus their presence serves as an assurance that the firm will remain well run. Moreover, institutional holders respond positively to dividend initiation announcements by adjusting their portfolios through buying or increasing their holdings of the dividend paying stock following the announcement. In addition, the results reveal that positive abnormal returns to dividend initiation announcements are a decreasing function of institutional holdings in the dividend initiating firm, and that this mitigating effect of institutional ownership on the market reaction to dividend initiations is stronger for firms with higher information asymmetry and more potential for agency problems. El-Masry et al., (2008) provide additional evidence on significant relationship between institutional ownership and dividend policy that is because institutional blockholders voted for higher payout ratios to enhance managerial monitoring by external capital markets. Harada & Nguyen (2009) provide evidence that supports the hypothesis that ownership concentration is associated with significantly lower dividend payments in proportion of operating earnings as in proportion of book equity. They also investigate the reasons of the difference between the high concentration and low concentration groups which is found to be in the order of 10% focusing on the role of profitability, growth opportunities and changes in leverage in explaining the decision to change dividends. Using a sample of Australian publicly firms, Setia-Atmaja (2009) find that ownership concentration has a significant negative impact on the independence of board, which means that closely held firms have lower proportion of independent directors on the board, and the blockholders may exacerbate the agency problems by paying lower dividends. Kouki & Guizani (2009) conclude that Tunisian corporations have a significant negative correlation between the institutional ownership and dividend per share and significantly negative relationship between the state ownership and the level of dividends.
distributed to shareholders. They also find that corporations with highly concentrated ownership distribute more dividends. Lambrecht & Myers (2010) develop a model assuming that dividend payout, investment and financing decisions are made by managers who attempt to maximize the benefits they take from the firm. But the threat of intervention by outside shareholders constrains benefits and forces benefits and dividends to move in lockstep. Managers are risk-averse, and their utility function allows for habit formation. They show that dividends follow Lintner's (1956) target-adjustment model. They provide closed-form, structural expressions for the payout target and the partial adjustment coefficient. Risk aversion causes managers to underinvest, but habit formation mitigates the degree of underinvestment. Changes in corporate borrowing absorb fluctuations in earnings and investment. The results of Ramli (2010) suggest that controlling shareholders does influence the dividend policy. Also, the presence of other large shareholders in corporations encourages the largest shareholders to pay out higher dividends. In a study made in the Middle East area for the Egyptian Market. Mehrani et al., (2011) provide additional evidence on a negative association between institutional ownership and dividend payout. Firms are forced to distribute more dividends to decrease agency costs when big institutional investors exist in ownership structure, while managerial ownership was not significantly associated with dividend payout.

Several studies have been made using Jordanian corporations data to study the determinants and the behavior of dividends in Jordan. Omet (2004) finds an empirical evidence shows that Jordanian corporations follow stable dividend policies. Indeed, his results indicate that lagged dividend per share is more important than current earning per share in determining current dividend per share and that the imposition of taxes on dividends did not have any significant impact of dividend behavior of corporations. Moreover, Al-Malkawi (2007) suggests that the proportion of stocks held by insiders and state ownership significantly affect the amount of dividends paid. Size, age, and profitability of the firm seem to be the main determinants of corporate dividend policy in Jordan. The findings of the study support the agency costs hypothesis and are broadly consistent with the pecking order hypothesis. However, the study does not provide evidence supporting the signaling hypothesis in the Jordan market. Al-Najjar (2009) shows that determinants of dividend policy in Jordanian firms are similar to those suggested in developed markets. Moreover, the study provides evidence suggesting that Jordanian firms have target payout ratios, to which they adjust to their target ratios. Therefore, the Lintner model is fit for the purpose of analyzing Jordanian
data. In another study, Al-Najjar (2010) shows that institutional investors in Jordan consider firms capital structure, profitability, business risk, asset structure, asset liquidity, growth rates, and firm size when they take their investment decisions. In addition, institutional investors in Jordan prefer to invest in services rather than manufacturing firms. Furthermore, the study does not provide evidence of any significant relationship between firms’ dividend policy and institutional investors. By assuming asymmetric adjustment toward the target dividend payout, Zurigat and Gharaibeh (2011) test the partial adjustment model based on Linter (1956), using 38 Jordanian firms. They find that these firms have a target dividend payout with low rate of target adjustment. In addition, target adjustment is an asymmetrical process depending on whether dividend payout is above or below target. Dividend adjustment is found to be asymmetric for below-target dividends adjustment as well for above-target with positive and negative earnings. Their findings support the asymmetric information of agency explanation of dividend smoothing. By running several multiple regressions using return on assets as proxy for dividend payout policy instead of Tobin’s Q, Warrad et al., (2012) study the relationship between ownership structure and dividend payout policy for the Jordanian industrial firm. Their findings reveal that no relationship between private ownership, government ownership, foreign ownership structure and the dividends policy measured by Tobin’s Q. However, their results show positive and significant relationship between foreign ownership and dividend payout policy.

3. DATA AND EMPIRICAL MODELS

The current study aims at investigating the impact of ownership structure on the dividend policy of corporations listed in Amman Stock Exchange over the period of 2005 – 2010. Therefore, this section provides the method and tools used to accomplish the objectives of study.

3.1 The Study Sample and Data:

The population of the study consists of all Jordanian corporations listed in Amman Stock Exchange, with total number of (234) corporations are listed at the end of the year 2010. They consist of (15) banks, (26) insurance corporations, (126) service corporations and (67) industrial corporations.

The sample of the study is consist of firms that have been continuously listed on the Amman Stock Exchange during the period 2005-2010. The firms should distributed cash dividend for three years as minimum during the period of the study. Thus, this study is confined to
35 firms (17 firms from industrial sector; 18 firms from services sector). Data of this study were extracted from the firm's annual reports, the Amman Stock Exchange publications and the Securities Depository Center records.

3.2 Variables and Measurement:

This section consists of two sub-sections; the first identifies the dependent variable, while the second one presents independent or explanatory variables.

3.2.1 Dependent Variable:

The dependent variable in this study is the dividend policy; mainly we employ the dividend payout ratio as a proxy of dividend policy.

**Dividends**

Following Mehrani *et al.* (2011), Harada & Nguyen (2009), Karathanassis and Chrysanthopoulou (2005) and Short *et al.* (2002), the dividend is a sum of declared dividends for every ordinary share issued. Dividends Per Share (DPS) are calculated as the total amount of distributed dividends paid out over an entire year (including interim dividends but not including special dividends) divided by the number of outstanding shares. DPS can be calculated by using the following formula:

\[ \text{DPS} = \frac{D}{S} \]

Where:

D: Dividends over a period (usually 1 year)
S: Shares outstanding for the period as deloused in companies guide for corporation \(i\).

3.2.2 The Independent Variables:

**Institutional ownership**

It’s the percentage of equity owned by institutional investors. Institutional block holders may act as a monitoring device on the corporation’s managers. Shleifer and Vishny (1986) and Allen and Michaely (2001) argue that large institutional investors are more willing and able to monitor corporate management than are smaller and more diffuse owners. Following Short *et al.* (2002), Karathanassis and Chrysanthopoulou (2005), institutional ownership is defined as the percentage of shares held by foreign and domestic institutional investors - mutual funds and investment trusts owning 5% or more of equity for the period of 2005-2010. The empirical analysis uses a dummy variable
(INST), the value of which is (1) when the percentage ownership by institutional investors is higher than the mean percentage of the sample and equals (0) otherwise.


Managerial ownership

Following Harada & Nguyen (2009), Short et al (2002), and Karathanassiss & Chrysanthopoulou (2005), managerial ownership refers to the total percentage of equity held by the shareholders that take part in the company’s management, either through their natural presence or representation in the Board of Directors, or through the undertaking of managerial tasks —or through a combination of the two.

The empirical analysis uses a dummy variable (MAN), which equals (1) when the percentage managerial ownership is higher than the mean percentage of the sample and equals (0) otherwise.

Manos (2002), Short et al (2002), Harada & Nguyen (2009), find a significant negative relationship between dividend and percentage ownership held by the shareholders that take part in the company’s management, either through their natural presence or representation in the Board of Directors, or through the undertaking of managerial tasks —or through a combination of the two.

3.2.3 Control Variables:

Firm Size

Larger firms may have more resources and hence the ability to pursue socially responsible activities. Thus, they may have the scope to achieve economic efficiency. The literature indicates that the potential impact of firm size on corporate performance is unclear.

Smith and Watts (1992) document that firms with more assets in place have higher dividend payout ratios. However, Gadhoum (2000) shows that the signaling efficiency of dividends diminishes for the larger firms, since larger firms produce much information than smaller one. Therefore, the inclusion of size may be best regarded as a simple control variable, with no particular sign expectation. The firms’ size in the current study is measured the natural log of total assets. Following Beiner et al (2006) and Chaing (2005).

\[ \text{Size}_{it} = \ln(\text{Total Assets}_{it}) \]
Where:
Size\textsubscript{it} : refers to the size of firm i for year t.
TA\textsubscript{it} : refers to the total assets for firm i in year t.
ln (TA\textsubscript{it}) : refers to natural log of total assets for firm i in year t.

**Free cash-flow (FCF)**

According to Jensen (1986), free cash-flow hypothesis suggest that if firms have excess cash, it is better to pay this cash as dividend in order to reduce managerial discretionary funds and, thus, avoid agency costs of free cash-flow. Rozeff (1982), Jensen et al., (1992) and Mollah et al. (2000) find evidence supporting this hypothesis, thus we predict a positive relationship between free cash-flow and dividend payout ratio. The measure of free cash flow has developed from Crutchley (1987) study of dividend policy as part of managerial decision-making. In addition, Alli et al. (1993) argue that dividend payment depends on cash flow which reflects the corporation's ability to pay dividend. They define FCF as the funds available to managers before discretionary capital investment decisions. This includes net income, depreciation, and the interest expense of the firm. Needed capital expenditure is subtracted from these cash flows to account for investment in positive-NPV projects.

**Future growth opportunities**

Too insufficient cash to distribute dividend, and consequently making dividend and growth opportunity are negatively related. Rozeff (1982) and Amidu & Abor (2006) argue that the predicted relationship between the anticipated growth and dividend payout ratio is negative because firms prefer to avoid transaction costs of external financing, hence retain a greater proportion of cash for financing if they have opportunities of growth.


\[
\text{MV/BV} = \frac{\text{Share Price Beginning of the year}}{\text{Net Asset Value per Share}}
\]

**Leverage (LEV)**

According to Jensen and Meckling (1976), Jensen (1986) and Stulz (1990), financial leverage has an important role in monitoring managers’ behavior, and reducing the agency cost of the shareholders -managers’ conflict, consequently increasing value. Jensen (1986) concludes that the use of debt may reduce the need for using dividend to mitigate the agency conflicts between shareholders and dividend. Hence, the agency theory of
free cash flow predicts a negative relationship between debt and dividend. Moreover, some debt contracts include protective covenants limiting the payout. Following Kouki and Guizani (2009), financial leverage is defined as the long term debt deflated by the book value of equity. Hence, the current study hypothesizes that the financial leverage and dividend payout are negatively related.

\[
\frac{TL}{SE} = D/E
\]

Where:
- D/E: Debt to Equity Ratio
- TL: Total Liabilities
- SE: Shareholders’ Equity

3.3 The Dividends Models:

The current study tries to investigate the possible relationship between ownership structure and corporations dividend policy. Following Mehrani et al (2011), Harada & Nguyen (2009), Short et al (2002), and Karathanassis & Chrysanthopoulou (2005), two empirical dividend models are used to test the hypothesized positive link between institutional ownership and managerial ownership and dividend policy: the Full Adjustment Model and Partial Adjustment Model (Lintner, 1956). These empirical models are modified by interactive dummy variables to account for the possible effects of institutional ownership and managerial ownership and dividend policy (Rozeff, 1982; Easterbrook, 1984). There is a significant body of empirical literature to suggest a negative link between the two i.e, (Rozeff, 1982; Jensen et al., 1992; Eckbo and Verma, 1994; Agrawal & Jayaraman, 1994; and Moh’d et al., 1995). The current study hypothesized that a positive relationship between the presence of institutional ownership and dividend payout ratio and a negative relationship between the presence of managerial ownership and dividend payout ratio.

3.3.1 The Full Adjustment Model (FAM)

To construct the first empirical model, the study has used dividend per share, earning per share (EPS), institutional ownership and managerial ownership. It has been argued that the presence of institutional ownership and managerial ownership has a significant impact on corporations dividend policy. The theoretical framework links the change in dividend policy to the change in earnings, assuming that firms change their dividend payout ratio only if it makes sure that the
change in its earning is permanent and can be sustained in the future. This argument can be explained using the following equation:

$$D_{ti} - D_{(t-1)i} = \alpha + r(E_{ti} - E_{(t-1)i}) + \mu_{ti}$$  \hspace{1cm} (a)$$

Where:

- $E_{ti}$: Earning Per Share of firm $i$ at time $t$
- $E_{(t-1)i}$: Earning Per Share of firm $i$ at time $t-1$ (for the Previous Year)
- $D_{ti}$: Dividend Per Share at time $t$
- $D_{(t-1)i}$: Dividend Per Share at $t-1$ (for the Previous Year)
- $r$: desired payout ratio
- $\mu_{ti}$: error term

To investigate the impact of institutional ownership and managerial ownership on dividend policy, this study uses the interaction dummy form using (dummy variable), which equal (1) for the firm having institutional ownership and zero otherwise. This dummy variable is used to construct the interaction dummy term which will be added to equation (a) as additional explanatory variable. Interaction dummy variable is constructed by multiplying the dummy variable by the change in earnings ($(E_{ti} - E_{(t-1)i})*D_{inst}$). The same procedure will be followed to construct the variable that will be used in equation (a) to investigate the impact of managerial ownership on dividend policy. By adding new interaction dummy terms of institutional and managerial ownership the model can be reformalized as follows:

$$D_{ti} - D_{(t-1)i} = \alpha_0 + \alpha_1(E_{ti} - E_{(t-1)i}) + \alpha_2(E_{ti} - E_{(t-1)i})*D_{inst} + \alpha_3(E_{ti} - E_{(t-1)i})*D_{man} + \alpha_4 SIZE + \alpha_5 LEV + \alpha_6 MTBV + \alpha_7 FCF + \mu_{ti}$$  \hspace{1cm} (Model 1)$$

Where:

- $E_{ti}$: Earning Per Share of firm $i$ at time $t$
- $E_{(t-1)i}$: Earning Per Share of firm $i$ at time $t-1$ (for the Previous Year)
- $D_{ti}$: Dividend Per Share at time $t$
- $D_{(t-1)i}$: Dividend Per Share at $t-1$ (for the Previous Year)
- $D_{inst}$: is a dummy variable taking (1) if the ownership of a significant percentage of shares by institutional investors and zero, otherwise.
- $(E_{ti} - E_{(t-1)i})*D_{inst}$: is the interaction dummy term on institutional ownership.
- $D_{man}$: is a dummy variable taking (1) if the ownership of a significant percentage of shares by managerial and zero, otherwise.
\( (E_{it} - E_{(t-1)i}) \times D_{\text{man}} \): is the interaction dummy term on managerial ownership.

- **Size**: is the natural log of total assets
- **LEV**: Financial leverage which is measured by total liabilities deflated by the shareholder’s equity.
- **MTBV**: Future growth opportunities measured as the ratio of market to book value of equity
- **FCF**: is free cash flow, which includes net income, depreciation, and the interest expense of the firm i
- **\( u_{it} \)**: error term
- **\( \alpha_i \)**: are to be estimated.

This model will be tested under the hypotheses that institutional ownership is positively linked to the dividend payout ratio, whereas managerial ownership is expected to be negatively linked to dividend payout ratio. Hence, the coefficient \( \alpha_2 \) is expected to be positive and statistically significant and the coefficient \( \alpha_3 \) is expected to be negative and statistically significant.

### 3.3.2 The Partial Adjustment Model (PAM)

To construct the second empirical model, we used dividend per share, earning per share (EPS), institutional ownership and managerial ownership. It has been argued that the presence of institutional ownership and managerial ownership has a significant impact on corporations dividend policy. The theoretical framework links the change in dividend policy to the change in earnings, assuming that for any year, \( t \), the target level of dividend, \( D \), for firm i at time \( t \) is related to profits, \( E_{it} \), by a desired payout ratio, \( r \) can be explained using the following equation:

\[
D_{\text{it}}^* = rE_{it}
\]  

**(A)**

Where:

- **\( D_{\text{it}}^* \)**: the target level of dividend for firm i at year \( t \).
- **\( r \)**: the optimal amount of dividend as a percentage of the profit for firm i , its value will be between (0) and (1) since firm usually won’t pay dividends more than that there was profit.
- **\( E_{it} \)**: the profit for the firm i made at year \( t \).

If firms with significant institutional ownership and/or managerial ownership have a different \( r \), then the equation (A) becomes:

\[
D_{it} - D_{(t-1)i} = \alpha + c(D_{\text{it}}^* - D_{(t-1)i}) + u_{it}
\]  

**(B)**

Where

- **\( D_{it} \)**: Dividend Per Share at time \( t \)
- **\( D_{(t-1)i} \)**: Dividend Per Share at \( t-1 \) (for the Previous Year)
• α is a coefficient representing the reluctance of managers to cut the dividends.
• c is the speed of an adjustment coefficient to the desired level of dividend distribution.
• D*_{ti} : the target level of dividend for firm i at year t.

To investigate the impact of institutional ownership and managerial ownership on dividend policy, this study uses the interaction dummy form (dummy variable) which equals (1) for firms having institutional ownership and zero otherwise. This dummy variable is used to construct the interaction dummy term which is added to equation (B) as an additional explanatory variable.

Interaction dummy variable is constructed by multiplying the dummy variable by the earnings E_{ti}. The same is followed to construct the variable will be used in the equation (B) to investigate the impact of managerial ownership on dividend policy. By adding new interaction dummy terms of institutional and managerial ownership, the model can be re-formalized as follows by assuming that corporations have different target payout ratios (r), equation (B) becomes:

\[ D_{ti} - D_{(t-1)i} = \alpha_0 + \alpha_1 E_{ti} + \alpha_2 E_{ti} D_{inst} + \alpha_3 E_{ti} D_{man} - cD_{(t-1)i} + \alpha_4 SIZE + \alpha_5 LEV + \alpha_6 MTBV + \alpha_7 FCF + u_{ti} \] (Model 2)

Where:
• D_{ti} : Dividend Per Share at time t
• D_{(t-1)i} : Dividend Per Share at t-1 (for the Previous Year)
• E_{ti} : Earning Per Share of firm i at time t
• D_{inst} : is a dummy variable taking 1 if the ownership of a significant percentage of shares by institutional investors and zero, otherwise.
• E_{ti} * D_{inst} : is the interaction dummy term on institutional ownership.
• D_{man} : is a dummy variable taking 1 if the ownership of a significant percentage of shares by managerial and zero, otherwise.
• E_{ti} * D_{man} : is the interaction dummy term on managerial ownership.
• Size: is the natural log of total assets
• LEV: financial leverage which is measured by total Liabilities deflated by the shareholder’ equity.
• MTBV: Future growth opportunities measured as the ratio of market to book value of equity
• FCF: is free cash flow, which includes net income, depreciation, and the interest expense of the firm i
• u_{ti} : is the error term
• \( \alpha_i \): are to be estimated.
This model will be tested under the hypotheses that, institutional ownership is to be positively linked to the dividend payout ratio, whereas managerial ownership is expected to be negatively linked to dividend payout ratio. Hence, the coefficient $\alpha_2$ is expected to be positive and statistically significant and the coefficient $\alpha_3$ is expected to be negative and statistically significant.

These models will be tested using pooled and panel data analysis techniques, where panel data analysis are usually estimated by fixed effect and random effect techniques (Gujarati, 2003; Green, 2003), while pooled data are tested using Ordinary Least Square (OLS) regression.

To identify the best one for analyzing the current data set, the study uses Breusch and Pagan (1980) Lagrange multiplier (LM) for testing random effects models against pooled OLS model under the null hypothesis that the cross-sectional variance components are zero. The significant Lagrange multiplier (LM) test leads to the rejection of the null hypothesis, and suggests that the individual effect is not equal to zero and that the estimate coefficients obtained from pooled model are not consistent. Hausman test is used to discriminate between fixed effects and the random effects model. under the null hypothesis that the coefficients estimated by the efficient random effects estimator are the same as the ones estimated by the consistent fixed effects estimator. The rejection of the null hypothesis, on the other hand, suggests that fixed effects estimations are more appropriate than random effects estimations.

4 ESTIMATION RESULTS
4.1 Descriptive Analysis

Table 4.1 presents a summary of the descriptive statistics of each hypothesized variables of the 35 corporations. Focusing on the dependent variable, it can be seen that the standard deviation for dividends is 0.095 while the average dividend distributed among the corporations in the sample is 0.109 per share. The earnings per share show an average of 0.196, with a minimum value of −0.409 and a maximum value of 3.593.

The institutional ownership range from 0.09 to 1, with a standard deviation of 0.229391. The mean of the INST is 0.521157 which implies that almost 52.1157% percent of shares ownership is concentrated in hands home which have 5% or more in the capital of firms among Jordanian firms.

The managerial ownership (MAN) ranges from 0 to 0.966, with both a mean 0.472 percent, and standard deviation of 0.236.
Table (4.1)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observation</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>$D_{it}$</td>
<td>209</td>
<td>0.109</td>
<td>0.095</td>
<td>0</td>
<td>0.5</td>
</tr>
<tr>
<td>$E_{it}$</td>
<td>210</td>
<td>0.196</td>
<td>0.330</td>
<td>-0.409</td>
<td>3.593</td>
</tr>
<tr>
<td>MAN</td>
<td>210</td>
<td>0.472</td>
<td>0.236</td>
<td>0</td>
<td>0.966</td>
</tr>
<tr>
<td>INST</td>
<td>210</td>
<td>0.521</td>
<td>0.229</td>
<td>0.09</td>
<td>1</td>
</tr>
<tr>
<td>LEV</td>
<td>210</td>
<td>0.983</td>
<td>3.795</td>
<td>0.015</td>
<td>32.168</td>
</tr>
<tr>
<td>MTBV</td>
<td>210</td>
<td>1.183</td>
<td>0.803</td>
<td>0.02</td>
<td>5.7</td>
</tr>
<tr>
<td>FCF</td>
<td>210</td>
<td>0.098</td>
<td>0.080</td>
<td>-0.201</td>
<td>0.608</td>
</tr>
</tbody>
</table>

$D_{it}$: dividend payout ratio, $E_{it}$: Earning per share
INST: total percentage of shares held by foreign and domestic institutional investors - mutual funds and investment trusts owning 5% or more of equity
MAN: measured by the summation of total percentage of equity held by the shareholders that take part in the corporation's management, either through their natural presence or representation in the Board of Directors, or through the undertaking of managerial tasks – or through a combination of the two
Control Variables are: Size which is natural log of total assets, Lev which is long term debt deflated by the book value of equity, MTBV which is measured as the ratio of market to book value of equity, FCF which is measured as the funds available to managers before discretionary capital investment decisions. This includes net income, depreciation, and the interest expense of the firm.

4.2 The Estimation Results of Dividends Models:

4.2.1 The Estimation Results of The Full Adjustment Model (FAM):

The results presented in table 4.2 show that the Hausman $\chi^2$ is found to be statistically significant, suggesting that the Fixed Effect model is the preferred specification for the current data set. Although the current study reports the estimation results of all economic techniques, discussion will be restricted only to the one that has been found to be the best specification. Furthermore, the diagnostic tests for Multicollinearity suggest that the model does not suffer from any multicollinearity problem where the VIF of all variables ranged between 1.07 - 7.55. In addition, the results reveal that the variance error of term is constant or homogeneous, implying that no heteroskedasticity exists where $\chi^2$ is found to be statistically insignificant. Hence, the null hypothesis that the variance of error term is homogeneous is accepted.

As can be seen from table 4.2, the estimation results of the Full Adjustment Model suggest that the coefficient of earning ($E_{it}$) variable is found to be positive and statistically significant at 1% level, which implies that current earnings ($E_{it}$) affect dividend policy of Jordanian corporations positively. Hence the increase in current earnings ($E_{it}$) is expected to be accompanied by an increase in dividend payments.
With respect to institutional ownership (INST), the results suggest that the presence of institutional ownership tend to reduce dividend payout, where the coefficient on interaction dummy term of institutional ownership is found to be negative and statistically significant at 5% level. This finding support those of El-Masry et al., (2008), Kouki and Guizani (2009) who support the argument that the institutional ownership may mitigate the agency conflict between shareholders and managers. Because of their large holding of shares, institutional shareholders have the power to control managerial behavior. Moreover, this finding supports the fact that presence of institutional ownership decrease dividend smoothing.

With respect to managerial ownership (MAN), the results suggest that the presence of managerial ownership tends to increase dividend payment, where the coefficient on interaction dummy term of managerial ownership is found positive and statistically significant at 5% level. This finding supports John Lintner (1956) who concludes that managements reluctant to cut dividend payment, signaling that managers are efficiently use cash and, consequently, avoiding the negative market reaction.

Furthermore, the results presented in table 4.2 reveal that the coefficient on FCF variable is found to be positive and statistically significant at 1% level. This finding supports the agency theory free cash flow, (Jensen, 1986) which assumes that dividend can be used by firms to restrict the ability of managers to waste funds to satisfy their personal needs. The results regarding the leverage LEV variable support this finding and make the above explanation more reasonable. This study finds that the leverage and dividend payout has a significant negative relationship at level 1%, supporting the suggestion of free cash flow theory of Jensen (1986), who argues that dividend and leverage serve as a substitution mechanism for mitigating agency cost of free cash flow. Size and MTBV do not have a significant relationship with dividend payout.

To summarize, when comparing the firms which have a significant presence of institutional ownership and which have a Dummy variable equal 1, (D_{inst}=1), then \( \alpha \) for the firms equal the summation of \( \alpha_1 \) and \( \alpha_2 \); otherwise, equals \( \alpha_1 \) for the firms have a \( D_{inst} =0 \). With regard to the presence of managerial ownership, to comparing between firms the same way use as institutional ownership, if (D_{man}=1) then \( \alpha \) for the firms equals the summation of \( \alpha_1 \) and \( \alpha_3 \); otherwise, it equal \( \alpha_1 \) for the firms that have a \( (D_{inst} =0) \).
Table 4.2
The Estimation Results of the Full Adjustment Model (FAM)
(Dependent Variable: Change in Dividend, \(D_t - D_{(t-1)i}\))

<table>
<thead>
<tr>
<th>Model 1 (FAM)</th>
<th>Pooled</th>
<th>Fixed</th>
<th>Random</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Variable</td>
<td>Coefficient</td>
<td>t- statistic</td>
<td>Coefficient</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.151</td>
<td>-0.940</td>
<td>-11.681</td>
</tr>
<tr>
<td></td>
<td>(0.351)</td>
<td></td>
<td>(0.341)</td>
</tr>
<tr>
<td>(E_t)</td>
<td>0.301</td>
<td>6.820</td>
<td>0.227</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td></td>
<td>0.000</td>
</tr>
<tr>
<td>((E_t - E_{(t-1)i})D_{inst})</td>
<td>-0.545</td>
<td>-0.190</td>
<td>-0.609</td>
</tr>
<tr>
<td></td>
<td>0.236</td>
<td></td>
<td>0.027</td>
</tr>
<tr>
<td>((E_t - E_{(t-1)i})D_{man})</td>
<td>0.166</td>
<td>0.860</td>
<td>0.440</td>
</tr>
<tr>
<td></td>
<td>0.393</td>
<td></td>
<td>0.047</td>
</tr>
<tr>
<td>Size</td>
<td>0.049</td>
<td>-0.390</td>
<td>0.437</td>
</tr>
<tr>
<td></td>
<td>0.699</td>
<td></td>
<td>0.542</td>
</tr>
<tr>
<td>(LEV)</td>
<td>0.323</td>
<td>2.240</td>
<td>-0.511</td>
</tr>
<tr>
<td></td>
<td>0.027</td>
<td></td>
<td>0.099</td>
</tr>
<tr>
<td>(MTBV)</td>
<td>0.609</td>
<td>2.730</td>
<td>0.527</td>
</tr>
<tr>
<td></td>
<td>0.007</td>
<td></td>
<td>0.162</td>
</tr>
<tr>
<td>(FCF)</td>
<td>0.154</td>
<td>1.720</td>
<td>0.169</td>
</tr>
<tr>
<td></td>
<td>0.088</td>
<td></td>
<td>0.061</td>
</tr>
<tr>
<td>Adj R- square</td>
<td>0.3357</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-stat/(Prob)</td>
<td>12.33(0.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heteroskedasticity</td>
<td>1.96(0.1620)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multicollinearity</td>
<td>3.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LM</td>
<td>24.22(0.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>32.65</td>
<td></td>
<td>(0.000)</td>
</tr>
</tbody>
</table>

***, **, * Denote significant at 0.001, 0.05, and 0.10 levels, respectively, based on t-tests.
LM: Lagrangian Multiplier
Note:
INST: a dummy variable which is a dummy variable representing the ownership of a significant percentage of shares by institutional investors, of which is one when the percentage ownership by institutional investors is higher than the mean percentage of the sample and equals 0 otherwise.
MAN: is a dummy variable representing the ownership of shares by managers which equals 1 when the percentage managerial ownership is higher than the mean percentage of the sample and equals 0 otherwise.
Control Variables are: Size which is natural log of total assets, \(LEV\) which is long term debt deflated by the book value of equity, \(MTBV\) which is measured as the ratio of market to book value of equity, \(FCF\) which is measured as the funds available to managers before discretionary capital investment decisions. This includes net income, depreciation, and the interest expense of the firm.
### 4.2.2 The Estimation Results of the Partial Adjustment Model (PAM)

The results presented in table 4.3 show that the Hausman ch² is found to be statistically significant, suggesting that the Fixed Effect Model is the preferred specification for the current data set.

**Table 4.3 The Estimation Results Of The Partial Adjustment Model (PAM)**

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Coefficient</th>
<th>t-statistic</th>
<th>Coefficient</th>
<th>t-statistic</th>
<th>Coefficient</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pooled</td>
<td>Fixed</td>
<td>Random</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-0.484</td>
<td>-4.850</td>
<td>-1.510</td>
<td>-2.520</td>
<td>-0.511</td>
<td>-4.600</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>0.013</td>
<td></td>
<td></td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Et_i</td>
<td>0.001</td>
<td>0.170</td>
<td>0.002</td>
<td>0.500</td>
<td>0.001</td>
<td>0.230</td>
</tr>
<tr>
<td></td>
<td>0.862</td>
<td>0.621</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Et_i*D_inst</td>
<td>0.064</td>
<td>1.170</td>
<td>0.141</td>
<td>2.060</td>
<td>0.086</td>
<td>1.560</td>
</tr>
<tr>
<td></td>
<td>0.244</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Et_i*D_man</td>
<td>-0.393</td>
<td>-0.730</td>
<td>-0.188</td>
<td>-2.540</td>
<td>-0.068</td>
<td>-1.210</td>
</tr>
<tr>
<td></td>
<td>0.467</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LDLg</td>
<td>0.040</td>
<td>5.450</td>
<td>0.061</td>
<td>7.570</td>
<td>0.044</td>
<td>5.980</td>
</tr>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>0.014</td>
<td>2.480</td>
<td>0.070</td>
<td>1.980</td>
<td>0.015</td>
<td>2.290</td>
</tr>
<tr>
<td></td>
<td>0.014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTBV</td>
<td>-0.002</td>
<td>-0.170</td>
<td>-0.042</td>
<td>-1.950</td>
<td>-0.003</td>
<td>-0.250</td>
</tr>
<tr>
<td></td>
<td>0.868</td>
<td>0.053</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCF</td>
<td>0.495</td>
<td>5.390</td>
<td>0.565</td>
<td>5.940</td>
<td>0.515</td>
<td>5.600</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEV</td>
<td>0.001</td>
<td>0.380</td>
<td>-0.003</td>
<td>-0.530</td>
<td>0.001</td>
<td>0.380</td>
</tr>
<tr>
<td></td>
<td>0.702</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adj R-square</td>
<td>0.3515</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-stat(Prob)</td>
<td>12.32 (0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heteroskedasticity</td>
<td>3.50 (0.0613)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multicolleanity</td>
<td>2.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LM</td>
<td>3.21 (0.073)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hausman Test</td>
<td>186.46 (0.00)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***, **, * Denote significant at 0.001, 0.05, and 0.10 levels, respectively, based on t-tests

LM: Lagrangian Multiplier

**Note:**

INST: a dummy variable which is a dummy variable representing the ownership of a significant percentage of shares by institutional investors, of which is one when the percentage ownership by institutional investors is higher than the mean percentage of the sample and equals 0 otherwise.

MAN: is a dummy variable representing the ownership of shares by managers which equals 1 when the percentage managerial ownership is higher than the mean percentage of the sample and equals 0 otherwise.

Control Variable are: Size which is natural log of total assets, Lev which is long term debt deflated by the book value of equity, MTBV which is measured as the ratio of market to book value of equity, FCF which is measured as the funds available to managers before discretionary capital investment decisions. This includes net income, depreciation, and the interest expense of the firm.
Furthermore, the diagnostic tests for Multicollinearity suggest that the model does not suffer from any multicollinearity problem where the VIF of all variables are ranged between 1.25 - 4.84 with an average of 2.92. In addition, the results reveal that the variance error of term is constant or homogeneous, implying that no heteroskedasticity exists, where ch² is found to be statistically insignificant. Hence, the null hypothesis that the variance of error term is homogeneous is accepted.

As can be seen from table 4.3, the estimation results of the Partial Adjustment Model suggest that the coefficient of earning (E_t) variable is found to be positive but statistically insignificant, which implies that the current earning (E_t) does not affect dividend policy of Jordanian corporations. With respect to the institutional ownership (INST), the result suggest that the presence of institutional ownership tend to increase dividend payment where the coefficient on interaction dummy variable form of institutional ownership is found positive and statistically significant at 5% level. This finding supports Shleifer and Vishny (1986), who suggest that ownership concentration tends to provide large shareholder the power to monitor the managerial behavior which overcomes the free-rider problem associated with dispersed ownership. Where small shareholders have no incentives to incur monitoring expenses for the benefit of other shareholders, because of strict financial discipline, firms improve their capital allocation, reduce unprofitable investments and ultimately exhibit higher performance so that the institutional ownership may work to mitigate the agency conflict between shareholder and managers. Because of their large holding of shares, institutional shareholders have the power to control managerial behavior.

Furthermore, the results presented in table 4.3 for managerial ownership (MAN) suggests that the presence of managerial ownership tend to reduce dividend payment, where the coefficient on interaction dummy term of managerial ownership is found negative and statistically significant at 5% level. This is because firms managements tend to use the free cash flow to satisfy their personal needs; therefor, the presence of managerial ownership increases dividend smoothing. Furthermore, the results presented in table 4.3 reveals that the control variable FCF coefficient is found to be positive and statistically significant at 1% level. This finding support the Agency Theory free cash flow, (Jensen ,1986), which assumes that dividend can be used by firms to restrict the ability of managers to waste funds to satisfy their personal needs. The result regarding the MTBV variable is statistically negatively significant with dividend payment. This supports Rozeff (1982) and Amidu & Abor (2006) who argue that the relationship between the anticipated growth
and dividend payout ratio is negative because firms prefer to avoid transaction costs of external financing, and hence retain a greater proportion of cash for financing if they have opportunities of growth. The finding also show that the insufficient cash to distribute dividend making dividend and growth opportunity are negative related. With respect to the firm size, the results shows that it hase a significant positive relationship with dividend payout ratio at level 5%. This result supports those by Smith and Watts (1992), Fama and French (2001). Finally, table 4.3 shows that the leverage does not have a significant relationship with dividend payout.

To summarize, when comparing the firms that have a significant presence of institutional ownership that have a Dummy variable equal 1, \((D_{\text{inst}}=1)\), then \(\alpha\) for the firms equal the summation of \(\alpha_1\) and \(\alpha_2\), otherwise, equal \(\alpha_1\) for the firms having a \(D_{\text{inst}}=0\). With regard to the presence of managerial ownership, to comparing between firms the same will uses as institutional ownership, if \((D_{\text{man}}=1)\) then \(\alpha\) for the firms equal the summation of \(\alpha_1\) and \(\alpha_3\), otherwise, equal \(\alpha_1\) for the firms have a \((D_{\text{inst}}=0)\). The empirical results are to be in accordance with the efficient monitoring hypotheses and consistent with Karathanassis & Chrysanthopoulou (2005), and Short et al. (2002). We adapt the hypothesis that institutional ownership and managerial ownership are related and affect dividend policy which means that Jordanian corporations have long-term target dividend payout ratios. In addition, dividend changes follow shifts in long-term, sustainable earnings, therefore, this trend implies that managers tend to “smooth” dividends so that changes in transitory earnings are unlikely to affect dividend payments over the short term, and managers are reluctant to make changes to dividends.

The following table shows that the comparative between the variables expected and resulted relation with dividend payment.

### Table 4.4

Comparative between expected and estimation results sign in two models

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Expected SIGN</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Model 1( FAM)</td>
</tr>
<tr>
<td>Institutional Ownership</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Managerial Ownership</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Firm Size</td>
<td>+/-</td>
<td>+</td>
</tr>
<tr>
<td>Free cash-flow (FCF)</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Future growth opportunities (MTBV)</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Leverage (LEV)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
4.2.3 Summary and Conclusion:

In terms of the coefficient of variation ($R^2$) fixed model in table (4-5) shows the full adjustment model is better in explaining the variation of corporate dividend policy. The explanatory power for partial adjustment model is 20.65 percent. Whereas, for the full adjustment model is 61.57, this result is consistent with Al Najjar (2010), Mahrani et al (2011).

<table>
<thead>
<tr>
<th>Table (4-5) Regression results of Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1 (FAM)</td>
</tr>
<tr>
<td>R- square</td>
</tr>
<tr>
<td>F-stat</td>
</tr>
<tr>
<td>(Prob)</td>
</tr>
</tbody>
</table>

Institutional ownership had been found to be positively and significantly related to dividends in Alli et al. (1993), Moh’d et al. (1995), Han et al. (1999), Manos (2002), Douglas & Jin (2006), Abedelsalam et al. (2008), and Kouki and Guizani (2009). In the current study, the results reveal the expected sign in the Partial Adjustment Model was significant. Therefore, it shows that dividends in Jordanian firms do have significant relationship with institutional ownership.

Managerial ownership has a negative coefficient in the Partial Adjustment Model, and the critical values are significant, whereas the Full Adjustment Model show a significant positive relationship with dividend. The unexpected sign for managerial ownership implies that Jordanian firms do not use dividends as a mechanism to reduce the agency costs between managers and shareholders. Nevertheless, this finding is consistent with the study by Al-Najjar (2009), and Zurigat and Gharaibeh (2011).

The estimation results for model two shows that the last year dividend is vital in determining current dividends, which is consistent with Omet (2004). The direction of relationship contrasts with that suggested by the Lintner’s (1956) theory of dividend smoothing by which claims that managers adopt a policy of progressiveness in order to stabilize dividend distributions and to avoid erratic rates. Thus, dividends are smoothed and rarely decreased.
References


Han, K., S. Lee, and D. Suk (1999), “Institutional Shareholders and Dividends”,  


