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## DIVIDEND POLICY AND THE AGENCY COST OF FREE CASH FLOW: EVIDENCE FROM NON-FINANCIAL SECTOR OF PAKISTAN

*The objective of this study is to examine how non-financial sector of Pakistan mitigates the agency cost of free cash flow by using firm dividend policy. To measure the agency cost of free cash flow firm free cash flow is used as a proxy. Dividend policy of a firm is measured by taking dividend payout ratio and dividend yield. The panel data on 58 non-financial firms for the period 2006 to 2010 has been collected from the non-financial sector of Pakistan. These firms were in the Karachi 100 stock index. Statistical tools and techniques such as correlation and generalized least square regression have been applied to analyze the data. The results reveal that the firm dividend policy plays an important role in reducing the agency cost of free cash flow by reducing the free cash flow that is under manager control. This result is consistent with the free cash flow theory. The implications, limitations and future area of study are also discussed.*

**Keywords:** dividend policy dividend yield, dividend payout ratio, agency cost, free cash flow, agency cost of free cash flow.

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## ДИВІДЕНДНА ПОЛІТИКА ТА АГЕНТСЬКІ ВИТРАТИ ПРИ ПОТОЦІ ВІЛЬНИХ ГРОШОВИХ КОШТІВ (ЗА ДАНИМИ НЕФІНАНСОВОГО СЕКТОРА ПАКИСТАНУ)

*У статті показано, як нефінансовий сектор Пакистану пом'якшує агентські витрати при потоці вільних грошових коштів за допомогою дивідендної політики фірми. Для вимірювання агентських витрат при потоці вільних грошових коштів як заміщаючий показник використовується потік вільних грошових коштів фірми. Були зібрані панельні дані 58 нефінансових компаній за період з 2006 по 2010 рік з нефінансового сектора Пакистану. Акції цих фірм котируються на фондовій біржі Карачі і входять у фондовий індекс Карачі 100. Для аналізу даних було застосовано статистичні інструменти і методи, такі як кореляція і регресія за методом узагальнених найменших квадратів. Результати показали, що дивідендна політика фірми грає важливу роль у зниженні агентських витрат при потоці вільних грошових коштів за рахунок скорочення потоку вільних грошових коштів, який знаходиться під контролем менеджера. Цей результат узгоджується з теорією потоку вільних грошових коштів. Наслідки, обмеження й області подальшого дослідження також обговорено.*

**Ключові слова:** дивідендна політика, дивідендна прибутковість, коефіцієнт дивідендних виплат, агентські витрати, потік вільних грошових коштів, агентські витрати при потоці вільних грошових коштів.

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## ДИВИДЕНДНАЯ ПОЛИТИКА И АГЕНТСКИЕ ИЗДЕРЖКИ ПРИ ПОТОКЕ СВОБОДНЫХ ДЕНЕЖНЫХ СРЕДСТВ (ПО ДАННЫМ НЕФИНАНСОВОГО СЕКТОРА ПАКИСТАНА)

*В статье показано, как нефинансовый сектор Пакистана смягчает агентские издержки при потоке свободных денежных средств с помощью дивидендной политики фирмы. Для измерения агентских издержек при потоке свободных денежных средств в качестве замещающего показателя используется поток свободных денежных средств фирмы. Были собраны панельные данные 58 нефинансовых компаний за период с 2006 по 2010 год из нефинансового сектора Пакистана. Акции этих фирм котируются на фондовой бирже Карачи и входят в фондовый индекс Карачи 100. Для анализа данных были применены статистические инструменты и методы, такие как корреляция и регрессия по методу обобщенных наименьших квадратов. Результаты показали, что дивидендная политика фирмы играет важную роль в снижении агентских издержек при потоке свободных денежных средств за счет сокращения потока свободных денежных средств, который находится под контролем менеджера. Этот результат согласуется с теорией потока свободных денежных средств. Последствия, ограничения и область для дальнейших исследований также обсуждены.*

*Ключевые слова:* дивидендная политика, дивидендная доходность, коэффициент дивидендных выплат, агентские издержки, поток свободных денежных средств, агентские издержки при потоке свободных денежных средств.

**Introduction.** The free cash flow theory of Easterbrook (1984) and Jensen (1986) states that companies with substantial free cash flow always tend to face conflicts of interest between stockholders and managers. Managers once have satisfied all the obligations contracted by a company with the funds generated by operations, can use the remaining flows from the treasury for their own benefit instead of the interest of shareholder. Shareholders wants managers to invest cash in the projects that maximize their stock value whereas the manager personal interest is in consuming perks.

In the seminal paper on the agency theory Jensen Meckling (1976) argue that agency costs are high in the firms with excess free cash flow. According to the free cash flow theory a firm sometimes generates more free cash that is required by a manager to be invested in the positive NPV project. Managers invest excessive free cash in the non-value maximizing projects when they lack in the positive NPV projects because managers gain prestige being managers of big firms. This behavior is called the overinvestment problem. Managers like to invest abundant cash for their own discretionary purpose. Owner of a firm with more free cash flow monitor the activities of a manager to avoid any wasteful expenditure. This monitoring increase the firm cost of monitoring hence increase the agency cost of a firm that in turn decrease the value of a firm. Firm value is affected because investors while making investments considered the anticipated agency cost both related to consumptions of firm resources by managers and the expenditures that are made to limit the wasteful consumptions of manager into the stock price they are willing to pay for it. It is important to analyze the effective mechanisms to mitigate this agency cost. These mecha-

nisms can either restrict the available resources for manager discretionary purposes or align the interests between shareholders and managers.

Free cash flow theory emphasize that the firm dividend play an important role in controlling the firm agency cost that is associated with the free cash flow of the firm. A firm can reduce free cash flow by paying more dividends. A firm by paying more dividends reduces free cash that is under the control of manager and can be used by manager for their own interests. Dividend payments allow shareholders make their own decisions on their money. By paying dividend the board bypassed the monitoring needs on how insiders would have used the firm free cash flow. Paying dividend clearly reduces the agency cost by eliminating the possibility that excess free cash flow will be used by insiders for their own benefits.

In fact, a constant payout of free cash flow to shareholders can reduce the agency cost of free cash flow. But this plan of paying constant dividend in the future is not credible as nothing can obstruct managers to lower dividend payments in future, as paying dividends is not obligatory. Manager is normally not penalized for not distributing cash to shareholders. Manager can avoid dividend payments to shareholders. But if a firm carries leverage in their capital structure the manager of the firm will bear the risk of losing job if not able to pay the debt holders principal payments and interest.

Therefore, in this research we test the role of dividend policy as agency control mechanisms of free cash flow problem. In this study profit, investment and growth opportunities, firm size and managerial ownership is also measured to see their impact on the agency cost of free cash flow. The rest of this paper is divided into 5 sections. Section 2 reviews the previous research. Section 3 explains the research methodology to test a number of hypotheses relating to our research focus. Section 5 analyses and discusses the results. Section 6 is the concluding section.

**Literature Review.** Companies having substantial free cash flows face the agency conflict between manager and shareholders. Managers use funds generated from operations to fulfill their contracted obligations. After fulfilling their obligations the remaining funds of a firm are used by a manager for his/her own benefits rather than to fulfill the interests of shareholders. High dividend payouts minimize the agency cost. Much research has been conducted to see the relationship between the agency cost of free cash flows and dividend. Some of these researches are:

Utami et al. (2011) used free cash flow as a proxy for agency cost. They reported that firms use debt and dividend policy to reduce free cash flow problem. They argued that the debt and dividend policy can be used as a substitute for reducing the free cash flow problem. Regression results also shows a negative insignificant effect on agency cost and the companies that pay dividend for less than a year. Manos (2002) pointed out that the monitoring of firm and management helped reducing the agency cost but also help convincing the market that manager cannot misuse his position in firm. He reported that private Indian firms prefer to pay high dividends that reduce the firm agency cost. He argued that by paying dividends firms increase the external monitoring that reduces the firm own agency cost. Wu (2004) argued that dividend policy of firm change with the growth opportunities of firm. The results of his study show that a greater positive relationship exists between the free cash flow and the dividend policy in growth firms as compared to the non-growing firms.

Harda et al (2003) argued that managers prefer to invest free cash in unprofitable projects that pay worst to shareholders but doing so enhances their own benefits and statuses. The fear of misuse of free cash by manager of firm forces shareholders to monitor managerial activities that in return increase the agency cost associated with monitoring. In their study they examined the dividend policy in the agency perspective. They pointed to the negative relationship between free cash flow and dividends. By paying cash in the form of dividend they reduce the available cash that can be misused by a manager. Byrd (2010) argued that free cash flow is available to manager for discretionary purpose. Firm value is affected because owner impounds monitoring cost to control the wasteful expenditures of managers. He used the regression model in his study to see the relationship between the agency cost of free cash flow and the dividend and debt. The evidence from the regression analysis of the data supports the Jensen argument that the debt and payout policy reduce the free cash flow problem.

Fenn et al. (2001) argued that the payout policy of a firm is affective by the stock incentives given to the firm to reduce agency cost. The result of their study shows that the payout of firm is greater for those with high agency problem. They argued that firm facing high agency cost increases their dividend to reduce the available cash which in short decrease the need to monitor management activities and expenditures. John and Knyazeva (2006) argued that manager with poor monitoring is not immune to firing because in the US investors have stronger protection. In his study he also pointed out that poor governance is related to the firm dividend policy. The result of the study revealed that the firm with poor corporate governance but high free cash flow gives more dividends to reduce the free cash flow problem. Mollah et al. (2002) suggested that companies with a higher free cash flow should pay more dividends to decrease free cash flow agency costs. The result of their study shows a positive relationship between the free cash flow and the dividend policy. They revealed that firm with high level of free cash flow is inclined to pay more dividends in order to reduce the free cash flow problem.

Amidu and Abor (2006) study shows that the dividend policy of firm has great impact on the free cash flows of the firm. He reported that as the dividend policy involves in the distribution of the cash which reduces the free cash available to firm. Grullon and Michaelley (2002) pointed out that a mature firm has less growth opportunities, less risks and more return on assets. They have more cash to be used by managers for wasteful activities as compared to immature companies. They concluded that mature firms generate large amount of free cash flow that increase the risk of overinvestment, so firm decides to distribute most of cash flows in dividends in order to reduce the agency cost. Lie (2000) results show a positive relationship between the excess cash and large regular dividend or small special dividend. In his study he pointed out that the firm with large excess cash usually pays more dividends in the form of special dividend or regular dividend.

Fairchild (2010) demonstrates that managerial communication to investors about the reasons for the dividend cut, supported by managerial reputation effects may mitigate this problem. In his study he analyzed the dividend policy with respect to both free cash flow hypothesis and signaling hypothesis. He argued that dividend payments give a positive signal to investors whereas cutting dividend is a negative signal to them. He also pointed out that the dividend paying gives a signal of future earn-

ings and a source of mitigating free cash flow problem. The results of his study show a negative relationship between free cash and dividend.

### **Methodology.**

*Data and sample:* In order to examine the impact of dividend policy, leverage and voluntarily contribution on the agency cost of free cash flow in the context of Pakistan, the present study initially selected 74 nonfinancial firms from the top 100 index of Karachi Stock Exchange. KSE 100 index is the most recognized index of the KSE. It shows representation from all sectors of the KSE and includes the largest companies by their market capitalization. Most importantly, KSE represents over 85% of the market capitalization of the Exchange. The Index comprises of 100 companies selected on the basis of sector representation and highest market capitalization, which captures over 90% of the total market capitalization of the companies listed on the Exchange. Financial firms were excluded from the sample as these firms follow different accounting standards. Firms that were newly formed merged, delisted, split or have missing data in the period of study were excluded from the sample. The present study recorded 290 observations. Only those firms have been included in the final sample which has fulfilled the following criteria.

1. Firms must remain in business for the whole study period.
2. The firms that remained are listed from 2006 to 2010.
3. Should not have merged, due to any reason.
4. The firms that has paid dividend at least once in 5 years are included in the sample.

On the basis of the above mentioned criteria the sample of 58 firms has been selected for 5 years from 2006 to 2010. The study only considered cash dividends paid by the companies. Stock repurchase and stock dividend have been ignored. The data have been collected from the annual reports of Karachi Stock Exchange (KSE), Economic survey of Pakistan, published financial statements of companies, balance sheets of joint stock companies and publication, of the State Bank of Pakistan. Internet is also used to access data on companies history, background information on the sectors under study. Economic data has been taken from the Economic Survey of Pakistan issued in 2006–2010. Type of data structure used in this study is panel (balanced panel data).

*Measures:* Free cash flow is used as a proxy of agency cost of free cash flow and it is also the dependent variable of the study. Several researchers use different definitions of free cash flow. Utami et al. (2011) defined free cash flows as net profit minus changes in fixed assets minus changes in net working capital divided by total assets. Wu (2004) defined free cash flows as operating income before depreciation minus interest expense minus taxes minus preferred dividends divided by book value of assets. Chu (2010) calculated the free cash flows by subtracting total tax on income, gross interest expense and expense on investment activity from operating income before depreciation. Wang (2010) measured free cash flow by subtracting income tax, interest expense, common stock dividend, and preferred stock dividend, from operating cash flows divided by net sales. Lang et al. (1991) define free cash flow as the operational income before depreciation, capital expenditures and taxes, divided by the book value of total asset in order to eliminate any size effect. In our study free cash flow is measured as:

**Free cash flow** = Operating Income before depreciation / Total assets.

Dividend ratio is used to measure the dividend policy. In different studies researchers use different measures for dividends. Harda and Nguyen (2006) measure dividend payout ratio by total dividend payments to operating income. Utami and Inanga (2011) tested the relationship between the agency cost, dividend policy and leverage. In their study to measure the dividend policy they use dividend payout ratio. The dividend payout ratio (DIV) indicates the percentage of profits distributed by a company among shareholders out of the net profits. Mollah et al (2002) in the investigation on the behavior of pay-out policy of Dhaka Stock Exchange (DSE) measured dividend policy by using the dividend payout ratio. In their study he measured the dividend payout ratio by the percentage of the earning payout as a dividend. Basing on the previous researches' definitions of the variables we use in our study:

**Dividend Payout Ratio** = Cash Dividend per share / Earning per Share

**Dividend Yield** = Dividend per share / Price

Control variables of the study are managerial ownership, investment and growth opportunity, firm size and profitability. Tobin Q is used as a proxy to measure the investment and growth opportunities. It is measured by market value of equity plus book value of long-term debt plus book value of short-term debt divided by total assets. Size of a firm is calculated by natural log of total assets. Whereas profitability of a firm is measured by earning after tax / total number of share outstanding. Managerial ownership is measured by the shares held by a manager divided by total shares.

*Statistical procedure:* To check the impact of dividend policy and leverage on the agency cost of free cash flow we use the regression analysis on the panel data. Random-effects generalized least square (GLS) regression on panel data is used to examine the impact of leverage and the dividend policy on agency cost of free cash flow. The use of the OLS as an estimation method instead of GLS does not result in the efficient estimates of the regression coefficient. To decide about whether RE (Random Effect) is more precise or FE (Fixed Effect) for a particular panel data, Hausman test is used. If the Hausman test is significant then FE is more appropriate and if this test is insignificant, then RE is more precise for a particular data set.

*Results:* Table 2 contains the descriptive analysis of 58 manufacturing firms listed at the Karachi stock exchange (KSE) of Pakistan from the period of 2006 to 2010. Free cash flow (FCF) which is basically the proxy of agency cost of free cash flow is used as a dependent variable. In our study two variables, dividend payout ratio (DP) and dividend yield (DY), are used to measure the firm leverage. Managerial ownership (MNGR), size of firm (SZE), firm's profitability (PRFT) and growth and investment opportunities (TOBQ) are also included in the study. In our study panel data analysis is followed in which each firm year is treated individually establishing the total sample of 290/firm year observations. In this study free cash flow (FCF) is measured by operating income minus tax minus interest rate plus depreciation divided by total assets. Table 1 provides the descriptive statistics of dependent and independent variables. Minimum value of FCF is -0.311, whereas the maximum value of the FCF is 0.676. The minimum negative values of free cash flow shows that firms in Pakistan



are making large investments. The maximum value of FCF shows that Pakistani firms hold maximum 67% of free cash to the total assets. Two ratios are used to measure the dividend of firms this include dividend payout ratio calculated by total cash paid out as a dividend divided by net income and the dividend yield calculated by dividend divided by stock price. The average ratio of dividend payout ratio in Pakistan is 0.0506. This shows that Pakistan non-financial firms are giving average 5% of their income in the form of net income. The mean value of dividend yield is 0.588 which shows that average 58% of dividend managerial ownership is the percentage of the shares held by managers of firms. The average value of managerial ownership in Pakistan non-financial firms is .0143 which means that on average 1.4% of the total outstanding shares is held by managers of firms. Profitability of firms is measured by net income divided by sales. The average profitability of the firm is .1061 which tells us the earning of the firms is 10% of its sales.

**Table 1. Variable Description**

Symbol	Proxy	Variable Description.	Expected Relationship
Dependent variable		Formula	Relationship
FCF	Free Cash Flow	Operating Income before depreciation / Total assets	
Independent variable			
D-yield	Dividend Yield	Dividend per share / Share Price	Negative (-)
PAYOUT	Dividend Payout	Cash dividend per share / Earning per share	Negative(-)
Controlled Variable			
Size	Firm size	Natural log of the total assets	Positive(+)
PRFT	Profit	Earnings after tax / Total number of share outstanding	Positive(+)
MGR	Managerial Ownership	Common shares own by insiders/total number of shares outstanding	Negative(-)
TOBNQ	Tobin Q	MV of equity + BV of long term debt+ BV of shorter debt/ Total assets.	Positive(+)

**Table 2. Descriptive Analysis**

Variable	Mean	Std.Dev	Min	Max
<b>FCF</b>	0.135	0.109	-311	0.676
<b>DPayout</b>	0.050	1.661	-4.42	22.72
<b>Dyield</b>	0.588	0.065	0	0.760
<b>PRFT</b>	0.105	0.172	-486	2.022
<b>MNGR</b>	0.014	0.049	0	0.326
<b>Tobin Q</b>	1.800	1.927	.198	15.650
<b>SIZE</b>	23.42	1.969	0	27.33

The maximum value of Pakistani firm profitability is 2.0224 showing that earnings of Pakistani firms is 202% of the total sales. Tobin Q in our study is used as a proxy of growth and investment opportunities. It is measured by market value of equity plus book value of long-term debt plus book value of short-term debt divided by total assets. The mean value of Tobin Q is 1.8004 which shows that high growth and

investment opportunities are available for Pakistan non-financial firms. This value can deviate from its mean value up to 1.9270. The minimum value of Tobin's Q for Pakistani firms is .1982 whereas the maximum value is of 15.6501. Size of the firm is calculated as log of total sales. The average size of Pakistani non-financial firms in terms of sales is 2.3441 which can deviate to 1.2568. The minimum value of firm size is 19.2154 and the maximum value is of 26.1564.

Table 3 shows the results of the GLS regression. Dividend payout ratio (-0.001,  $p < 0.05$ ) and dividend yield (-0.069,  $p < 0.05$ ) are significant and negatively associated with the free cash flow. This shows that the agency cost of free cash flow decreases with the increase in firm dividend payments. These results are consistent with the agency theory of free cash flow that the firm leverage can reduce the agency cost of free cash flow. The size of a firm is positively and significantly (0.004,  $p > 0.01$ ) associated with the agency cost of free cash flow. This shows that there is a decrease in the agency cost of free cash flow with the increase in the size of the firm. The profitability of firm is positively and significantly (0.259,  $p < 0.01$ ) associated with the free cash flow. Whereas the investment and growth opportunities are also positively and significantly (0.018,  $p < 0.01$ ) associated with free cash flow. This shows that the firm with more investment and growth opportunities bears more agency cost of free cash flow. The managerial owner is insignificantly related to the agency cost of free cash flow (-0.039,  $p > 0.05$ ). The insignificant result is due to the lack of managerial ownership in Pakistan.

*Table 3. GLS regression results of impact of dividend policy on agency cost of free cash flow*

Variables	Coef	p> z	Std err
Dividend payout	-0.001	0.005**	0.0701
Dividend yield	-0.069	0.025**	0.0025
<b>Control variable</b>			
Size	0.004	0.000*	0.0025
MNGR	-0.039	0.715	0.1095
Profit	0.259	0.000*	0.0291
Tobin Q	0.018	0.002*	0.0029
<b>Panel Data: Random</b>	<b>Adjusted R<sup>2</sup>: 0.51</b>	<b>Year Dummy:</b>	<b>NO</b>

\*Significant at 1%, \*\*Significant at 5%, \*\*\*Significant at 10%

Table 4 shows the results of the GLS regression. Dividend payout ratio (-0.012,  $p < 0.05$ ) and dividend yield (-0.0007,  $p < 0.05$ ) are significant and negatively associated with free cash flow. This shows that the agency cost of free cash flow decreases with the increase in firm dividend payments. These results are consistent with the agency theory of free cash flow that the firm leverage can reduce the agency cost of free cash flow. The firm size is positively and significantly (0.003,  $p > 0.01$ ) associated with the agency cost of free cash flow. This shows a decrease in the agency cost of free cash flow with the increase in the firm size. The firm profitability is positively and significantly (0.241,  $p < 0.01$ ) associated with the free cash flow. Whereas investment and growth opportunities are also positively and significantly (0.010,  $p < 0.01$ ) associated with free cash flow. This shows that the firm with more investment and growth opportunities bears more agency cost of the free cash flow. The managerial owner is insignificantly related to the agency



cost of free cash flow (-0.066,  $p > 0.05$ ). The insignificant result is due to the lack of managerial ownership in Pakistan.

*Table 4. GLS regression results of impact of dividend policy on agency cost of free cash flow*

Variables	Coef.	P >  z	Std err
Dividend payout	-0.0120	0.034**	0.073
Dividend yield	-0.0007		
		0.048**	0.002
<b>Control variable</b>			
Size	0.003	0.025**	0.259
MNGR	0.066	0.581	0.120
Profit	0.241	0.000*	0.031
Tobin Q	0.010	0.003*	0.003
<b>Panel Data: Fixed</b>	<b>Adjusted R<sup>2</sup> 0.51</b>	<b>Year Dummy:</b>	<b>NO</b>

\*Significant at 1%, \*\*Significant at 5%, \*\*\*Significant at 10%

**Hausman Fixed Random Test:**

Prob > chi2 = 0.001

The Hausman test result is significant. This shows that FE is more appropriate in the generalized least square regression.

**Discussion.** The negative relationship of the dividend ratios, i.e., dividend payout ratio and dividend yield with the agency cost of free cash flow is in accordance with the free cash flow theory. Dividend payments divert the motivation of managers to use free cash flow for their own interests as little cash is available to managers for discretionary purposes. These results are in accordance with the free cash flow theory by Jensen (1986). This result is also consistent with previous researches. DeAngelo et al. (2004) recommended that a firm can reduce their agency problem associated with free cash flows by paying dividends as dividend reduce the manger command over the free cash. The firm larger in size carries more operations and can generate more free cash as compared to smaller firms that increase the agency cost of free cash flow. The profitable firm carry more free cash flow that is under the control of manager, can be used by them for their own, discretionary purposes. Hence, a profitable firm carries more agency cost of free cash flow. This result is supported by so many other researchers. Utami et al. (2011) reported that firm profitability increase the firm cash under the control of management that can be used by them for wasteful activities. So, firm profitability is positively related to the agency cost. Ahmad (2009) result of regressions shows that the free cash flow is positively associated with return on assets. A profitable firm always holds more cash that can be misused by firm managers. Managers of the firm with more investment and growth oportunities hold more cash that can be misused by managers. This increases the monitoring needs which in result increase the agency cost associated with the free cash flow. Our result is also consistent with so many previous studies. Ferreira et al (2004) investigated a positive relation between investment opportunity and free cash flow theory. He also pointed out that the firms with better investment opportunities have greater financial distress costs because the positive NPV of these investments disappears in case of bankruptcy. In this case, firms with better investment opportunities will keep higher levels of cash to avoid financial distress.

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