

Conventional Determinants of Corporate Payout Policies in the Egyptian Stock Market

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Abstract

Corporate Payout policy is one of the interesting topics in corporate finance literature that attracted the attention of many researchers. Despite the extensive research in this area, there is a contradiction between researchers on what are the main determinants of corporate payout policy. Researchers have mainly focused on developed markets and looked at a single dimension of the dividend policy. Therefore, the current study explores the determinants of dividend payout ratio by analyzing the effect of profitability, free cash flow, investment opportunity, liquidity, leverage, firm size and ownership structure on two dimensions of the dividend payout policy: the dividend decision and the payout ratio, taking a sample of all Egyptian listed firms in the period from 2007 till 2020. The results reveal the significance of profitability and investment opportunity on the dividend decision. For the payout ratio model, it is found that free cash flow, profitability and managerial ownership are significant determinants of payout ratio. Finally, by analyzing the dividend-paying firms, the results reveal that financial leverage affects the payout ratio of these firms.

Keywords

Dividend Policy, Dividend Decision, Dividend Payout Ratio, Egypt

1. Introduction

Successful corporation generates net income after deducting all kinds of expenses. The company utilizes this net income for various purposes like acquiring new assets, repayment of outstanding debt, repurchase of outstanding common stock as well as distribution among shareholders. When a corpora-

tion decides to distribute their net income to shareholders, it is called dividend.

The dividend policy has been an issue of interest in the financial literature since long time. [Miller and Modigliani \(1961\)](#) initiate the irrelevancy theory which is based on perfect market assumptions. However, the real world does not always work as predicted by a mathematical model. Investors may care about dividends for reasons explained by tax incentives, clientele effect or agency problem purposes ([Ozuomba et al., 2016](#)). Today, there is a great agreement on the relevance of dividend to firm value, but the main determinants of dividend payout ratios remain highly questionable and this is exactly why it's called the dividend puzzle ([Black, 1976](#)).

The dividend puzzle is still debatable and has many interesting areas to be explored specially in developing markets because of the unique nature of these markets and their instabilities. The macro-economic conditions surrounding firms in these countries such as the political or the economic situation, could let them change their investment and financing plan ([Glen et al., 1995](#)). Moreover, developing countries are characterized with poor corporate governance which means that they suffer from agency problem to some extent, therefore, studying the payout policy is important as it helps in reducing the agency problem by monitoring managers behavior ([Easterbrook, 1984](#)).

This study mainly focuses on the propensity to pay dividends as well as the dividend payout ratio and to conclude if they have the same determinants or not. Unlike most of previous studies that either focus on the determinants of dividend decision only such as [Fama and French \(2001\)](#), [De Angelo et al. \(2006\)](#) and [Denis and Osobov \(2008\)](#) and [Takmaz et al. \(2020\)](#) or the payout ratio only such as [Kania and Bacon \(2005\)](#), [Amidu and Abor \(2006\)](#), [Thanatawee \(2011\)](#) and [Mehdi et al. \(2017\)](#).

This study also focuses mainly on the Egyptian stock market which is considered as one of the emerging markets and thus it provides an out-of-sample test for previous research that focuses mainly on developed markets. Furthermore, the sample period of this study is very rich as it includes a series of political and economic events that affected the Egyptian stock market such as the Global Financial Crisis in 2008, the Egyptian revolutions in 2011 and 2013, the floatation of the Egyptian pound in 2016 and finally the widespread of Coronavirus in 2019 and 2020. Thus, this rich sample period enables the researchers to analyze the determinants of payout policy in a highly fertile sample period with different up and down trends.

The rest of the paper is organized as follows: Section 2 presents a literature review providing the theoretical framework and the previous studies of the determinants of payout policy. Section 3 identifies the collected data and the followed methodology. Section 4, the empirical findings are discussed and analyzed. Section 5, the concluding recapitulates the main findings and finally section 6, highlights the recommendations and limitations of the study.

2. Literature Review

2.1. Theories of Corporate Payout Policy

Dewasiri and Weerakoon (2016) highlight that a single theory or determinant is unlikely to explain the dividend policy alone. Some common theories explaining payout policy are as follows:

- **The Bird in Hand Theory:** It's initially developed by Lintner (1956) and Gordon (1959) and it clarifies that investors will often tend to favor cash in hand, dividends, to a future promise of capital gain, retained earnings, because of uncertainty of future cash flow and minimization of risk.
- **Agency theory:** Easterbrook (1984) states that when a company pays out cash to its investors that could have been used to fund new investments, it should finance its investment by accessing the capital market comparing to other firms that do not pay dividends and therefore this reduces the agency problem.
- **Free Cash Flow Theory:** Developed by Jensen (1986) and it explains that a dividend and debt interest payment reduce the free cash flow and controls the cash available to managers (Fairchild, 2010), and therefore reduces the opportunity for overinvestment.
- **Tax preference theory:** For tax-related reasons, investors prefer retained earnings over the distribution of cash dividends. As a result of the tax advantage of capital gains, investors may prefer a low dividend payout as opposed to a high payout (Brennan, 1970). In Egypt taxes on dividends and capital gains were imposed only starting 2014, therefore this theory is not applicable in our study.
- **Signaling theory:** As reported by Bhattacharya (1979) firm with an advanced level of asymmetric information will have to pay a higher level of dividends to signal the same level of earnings as a firm with a lower level of asymmetric information.
- **Pecking order theory:** The POT suggests that in the face of a semi-strong efficient market, firms decide to finance new investments or dividends with retained earnings or internal sources over external sources of finance Myers (1984), and Majluf and Myers (1984).
- **Life cycle theory:** According to Garenge et al. (2007) and O'Connor and Byrne (2015) as a company matures, its capability to generate cash go beyond its capability to invest in profitable projects. According to this theory, the best strategy is for the firm to distribute its free cash flow to shareholders using dividends.

2.2. Determinants of Payout Policy

This section presents all the studied determinants of payout policy, supported by previous studies and the research hypotheses are formulated based on the corporate payout theories mentioned in section 1 and the previous studies.

2.2.1. Profitability

According to the life cycle theory, mature, profitable companies distribute dividends. Nevertheless, companies that do not pay dividends are not necessarily unprofitable. If a company thinks that its own growth opportunities are better than investment opportunities available to shareholders elsewhere, the company should keep the profits and reinvest them into the business.

Most of previous studies found a positive relationship between profitability and payout policy like: Al-Malkawi (2007), Bokpin (2011), Abdelsalam and El-Masry (2008) and Dewasiri et al. (2019).

Therefore, following the life cycle theory and the supported previous studies, the first Hypothesis is formulated:

H1: There is a significant positive relationship between payout policy and profitability.

2.2.2. Investment Opportunity

According to the pecking order theory, if the company has any residual earnings after financing all investment opportunities, this profit could be distributed to shareholders in cash dividends, since the company usually depends first on its internal sources in financing new investments, otherwise the company will not pay dividends (Amidu & Abor, 2006). Most of previous studies support this negative relationship such as Abor and Bokpin (2010), Dewasiri et al. (2019), Imamah et al. (2019) and Khana et al. (2020).

Based on the pecking order theory and the supporting studies, we can predict the following:

H2: There is a significant negative relationship between investment opportunity and dividend payout policy.

2.2.3. Free Cash Flow

According to free cash flow hypothesis of Jensen (1986), one of the ways that firms can use to control the agency problem that arises due to having large amount of free cash flows is through paying dividends to shareholders rather than leaving these cash flows for managers who can use it in an inefficient way leading to high agency costs. This argument is supported by many authors such as Thanatawee (2011). Thus, the following hypothesis is formulated.

H3: There is a significant positive relationship between cash flow and dividend payout policy.

2.2.4. Leverage

Rozeff (1982) conveys that firms having high financial leverage tend to have low payouts ratios, to decrease transaction costs linked with external financing. Moreover according to the free cash flow hypothesis of Jensen (1986), both dividends and debts act as a substitute for monitoring the free cash flow available to managers. Most of previous studies support this point of view such as Setiawan et al., (2016), Ranajee and Pathak (2018), Wahjudi (2019) and Basri (2019).

Thus after discussing the free cash flow hypothesis that was supported by many previous studies, the following hypothesis is formulated:

H4: There is a significant negative relationship between leverage and dividend payout policy.

2.2.5. Liquidity

Baker et al. (1985) state that liquidity is the main determinant of dividend policy. The company's ability to pay dividends increase when their overall cash position and liquidity are stronger, moreover according to the agency theory firms with high liquidity choose to distribute dividends to avoid any agency problems. Previous studies looked intensively in this area and supported this positive relationship such as Khan et al. (2011) and Kumar and Waheed (2015).

Based on the agency and its above-mentioned supporting studies, the following hypothesis is expected:

H5: There is a significant positive relationship between liquidity and dividend payout policy.

2.2.6. Firm Size

According to the life cycle theory, early in the life cycle, firms are likely to assign their incomes in reinvesting activities to improve their growth. In contrast, when firms mature, they have a tendency to distribute their incomes to investors as dividend (Denis & Osobov, 2008).

Most of previous studies support the above explanation of this relationship such as Al-Malkawi (2007), Yusof and Ismail (2016) and Takmaz et al. (2020).

Following the life cycle theory as well as the previous studies, the following hypothesis is formulated:

H6: There is a significant positive relationship between firm size and dividend payout policy.

2.2.7. Ownership Structure

The type of owners inside the company as well as the distribution of ownership stakes undoubtedly have an impact on the performance of firms and the reduction of agency costs in the firm. As explained before dividend policy could help as well to mitigate the agency problem and therefore substitute the role of ownership structure in this issue. Many scholars have studied the effect of ownership structure on dividend payout policy.

The first variable of ownership structure studied in this research is Institutional ownership. Jensen and Meckling (1976) claim that the agency costs may be restricted by institutional investors due to their monitoring role, so no need for dividends as a way to mitigate agency problem. This negative relationship is supported by Al-Najjar & Kilincarslan (2016).

The second ownership structure variable used in this study is managerial ownership. According to the agency theory, the more significant the managerial ownership is, the more shareholding managers will be interested to pursue more

profitable projects and accordingly decrease dividends. This explanation is supported by Al-Qahtani & Ajina (2017) and Gul et al. (2020).

The last ownership structure variable is free float ownership, the agency theory, Easterbrook (1984), Jensen (1986) and Rozeff (1982) argue that dividend offers indirect advantage of control to individual owners where active monitoring of a firm's insiders by its shareholders is missing (Rozeff, 1982), Therefore, the theory predicts a positive relationship between free float and payout policy.

From the above discussion on the agency theory and the previous studies supporting it, the following hypotheses on ownership structure are formulated:

H7a: There is a significant negative relationship between institutional ownership and dividend payout policy.

H7b: There is a significant positive relationship between managerial ownership and dividend payout policy.

H7c: There is a significant negative relationship between managerial ownership and dividend payout policy.

3. Data and Methodology

3.1. Variables Description and Calculations

Table 1 shows the research variables and their calculations:

3.2. Research Models and Research Methods

Given the above Hypotheses, the research model used to test these hypotheses is: First the descriptive statistics such as mean, maximum, minimum and standard deviation to describe first the variables used in this study, and then regression analysis is conducted. We have two models, the first which has dividend decision as dependent variable which is a dichotomous variable so it is tested using the logistic regression. Second model tests the determinants of the payout ratio and the GLS random effect regression for panel data is conducted based on the insignificance of the Hausman test. The statistical techniques are carried out using the STATA 17.0 software. Following the lead of Jabbouri (2016), Chazi et al. (2018); Dewasiri et al. (2019), Trabelsi et al. (2019); Baker et al. (2019); Byun et al. (2021), Bilel and Mondher (2021), the following are the logistic regression and the GLS random effect regression equations respectively:

$$\begin{aligned} Div_Decision_{i,t} = & \alpha + \beta 1 Prof_{i,t} + \beta 2 FCF_{i,t} + \beta 3 LIQ_{i,t} + \beta 4 MB_ratio_{i,t} \\ & + \beta 5 Lev_{i,t} + \beta 6 FS_{i,t} + \beta 7 Inst_own_{i,t} + \beta 8 Man_Own_{i,t} \\ & + \beta 9 Free_Float_{i,t} + \mu_{i,t} \end{aligned} \quad (1)$$

$$\begin{aligned} Payout_Ratio_{i,t} = & \alpha + \beta 1 Prof_{i,t} + \beta 2 FCF_{i,t} + \beta 3 LIQ_{i,t} + \beta 4 MB_ratio_{i,t} \\ & + \beta 5 Lev_{i,t} + \beta 6 FS_{i,t} + \beta 7 Inst_own_{i,t} + \beta 8 Man_Own_{i,t} \\ & + \beta 9 Free_Float_{i,t} + \mu_{i,t} \end{aligned} \quad (2)$$

3.3. Sampling and Data Collection

All the data used in this research is collected from secondary sources, and the

Table 1. Variables description and calculations.

Variables	Indicators	Measurement	Reference
Dependent variables			
Dividend Decision	DIVDECISION	Coded “1” if the firm paid dividend or “0” if it didn’t.	Budiarso et al. (2019), Dewasiri et al. (2019), Trabelsi et al. (2019), ELbannan (2020) and Takmaz et al. (2020)
Dividend Payout Ratio	DIVRATIO	$\frac{\text{Dividend Per Share}}{\text{Earnings Per Share}}$	Neves (2017), Jabbouri (2016), Dewasiri et al. (2019) and Byun et al. (2021)
Independent variables			
Profitability	Prof	EBIT/T. Assets	Ahmed (2015), Chazi et al. (2018) Trabelsi et al. (2019), ELbannan (2020)
Free Cash flow	FCF	Cash flow from operation – Capital expenditures	Islam et al. (2021)
Liquidity	LIQ	Current Assets – Current Liabilities	Patra et al. (2012), Al-Kayed (2017), Budagaga (2020)
Investment Opportunity	M/B ratio	Market value Per Share/Book Value Per Share	Al-Malkawi (2007), Patra et al. (2012) and Al-Kayed (2017), Dewasiri et al. (2019)
Leverage	LEV	S.T Debts/T.assets.	Ramadan (2015), Setiawan et al. (2016), Ranajee and Pathak (2018)
Firm Size	FS	Log T.Assets	Ramadan (2015); Jabbouri (2016); Baker et al. (2019); Dewasiri et al. (2019) and Byun et al. (2021)
Institutional Ownership	INST_OWN	$\frac{\text{Total Shares held by Institutions}}{\text{Total captial shares}}$	Al-Najjar & Kilincarslan (2016), Sindhu et al. (2016), Dhuhri and Diantimala (2018)
Managerial Ownership	Man_Own	$\frac{\text{Total Shares held by top management}}{\text{Totalcaptial shares}}$	Sakir & Fadli (2014), Sindhu et al. (2016) and Dhuhri and Diantimala (2018)
Free Float	Free_Float	$\frac{\text{Total Shares held by external investors}}{\text{Totalcaptial shares}}$	Abdelsalam and El-Masry (2008) and Afza and Mirza (2010)

main source of the research data is Bloomberg Database and annual reports (for some missing data) that were purchased from the Egyptian Company for Information Dissemination (EGID) in order to have a balanced panel data set and avoid any survivorship bias. The sample includes 175 Egyptian listed firms. It's worth mentioning that the Bloomberg terminal developed that was launched in 1981, is one of the main product offerings from Bloomberg L.P. It delivers fast access to crucial news and historical financial data about listed firms all over the world. The choice of 175 firms is mainly due to the fact that some of listed firms in the Egyptian stock market are inactive as shown in **Table 2** and thus these firms are removed from the sample as they do not have consistent data for 6 consecutive years. It is shown in the appendix the name of excluded firms. Moreover, financial companies such as banks and insurance companies are excluded from the sample, since they follow different disclosure requirements and corporate governance procedures (Baker & Wurgler, 2004). As was mentioned in the Section 1, the sample period for this study covers from 2007 to 2020 which is a rich sample period that includes several political and economic events.

4. Findings and Analysis

4.1. Descriptive Statistics

Table 3 illustrates the descriptive statistics of all the variables used in this study: Profitability, free cash flow, investment opportunity, liquidity, leverage, firm size, managerial ownership, institutional ownership, free float ownership, dividend payout ratio and the dividend decision for the whole sample and for payers and non-payers to explore any potential significant differences in means for each of the variables between these two types of firms using the t-test which will help better understand the characteristics of the dividend paying firms.

Looking at the whole sample, we can see that Egyptian listed firms in our sample have on average a positive free cash flow, which could be used as internal source of finance for firms having a good investment opportunity. They also have high investment opportunity, which should be the case for any emerging market, as they are usually characterized with their continued growth and profitability (Walsh et al., 2005). Egyptian firms are not very highly levered as the mean is 37%. As for the liquidity, it shows a mean of 2.9 which is within the ideal rule of thumb that the current ratio should range between 1 and 2 (Pani-grahi, 2013).

Table 2. Listed Versus Traded firms on EGX.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
No of listed firms	435	373	306	212	213	213	212	212	221	222	222	220	218	215
No of traded firms	337	322	289	211	204	204	206	206	217	213	213	218	213	214

Source: EGX Annual Reports (2007-2020).

Table 3. Descriptive statistics.

Variables	Payers				Non-Payers				t-statistics	Whole Sample					
	Mean	SD	Min	Max	Mean	SD	Min	Max		Mean	SD	Min	Max	Skewness	Kurtosis
FCF	9.1651	37.4649	-93.4876	195.8599	-1.3645	12.6239	-93.4876	98.2362	-5.9509***	5.9288	32.1637	-93.4876	195.8599	3.3766	21.2848
MB ratio	1.4463	0.9413	0.4276	6.0120	1.2819	0.8405	0.4276	6.0120	-5.9509***	1.3979	0.9215	0.4276	6.0120	2.5865	11.1702
Lev	0.3607	0.2093	0.0159	1.4430	0.3757	0.2994	0.0159	1.4430	1.2837	0.37125	0.25173	0.0159	1.4430	1.3169	5.9275
Liq	2.5978	4.3054	0.2154	39.7841	3.6025	7.2296	0.2154	39.7841	3.8572***	2.8693	5.3454	0.21548	39.7841	5.2788	33.1252
Prof	0.1029	0.0942	-0.2582	0.3627	-0.0023	0.1056	-0.3381	0.3089	-22.0854***	0.0697	0.1089	-0.33812	0.36272	-0.2562	5.2642
FS	2.0121	0.6720	0.5040	3.6552	1.61	0.7524	0.5040	3.6552	-11.9496***	1.8893	0.7144	0.5040	3.6552	0.2636	2.5770
Inst_Own	0.1157	0.2306	0	0.9465	0.1109	0.2043	0	0.9465	-0.4450	0.1188	0.2337	0	0.9465	2.3630	7.4679
Man_Own	0.0299	0.1081623	0	0.67	0.0142	0.0446	0	0.67	-3.1027***	0.0228	0.0874	0	0.67	6.7429	48.5113
Free_Float	0.4018	0.2367	0.0205	0.9398	0.4445	0.2481	0.0205	0.9398	3.4639***	0.4029	0.2390	0.05058	0.9398	0.3900	2.2826
Div_Ratio										0.4333	0.9166	-2.0453	6.290986	3.281546	21.49474
DIVDECISION										0.7037938	0.4566941	0	1	-0.8926909	1.796897
No of Observati ons	1715				735					2450					

This table shows the Descriptive Statistics for the conventional variables as well as the dependent variables used in the study during the period 2007-2020 for a total of 2450 observations for the whole sample, 1715 for payers and 735 for non payers. FCF is the free cash flow measured as cash flow from operations minus capital expenditures, MB ratio is the investment opportunity measured as market value per share divided by book value per share, LEV is leverage measured as S.T Debts divided by total assets, LIQ is liquidity measured as current assets divided by current liabilities, profitability is measured as EBIT divided by Total Assets, FS is Firm Size measured as Log of Total Assets, INST_ONW is the percentage of institutional ownership, MAN_OW is the percentage of managerial ownership and finally FREE_FLOAT is the percentage of free float. As for the dependent variables; DIVRATIO is the dividend payout ratio measured as total cash dividends divided by earnings per share; DIVDECISION is the dividend decision that take value of 1 in case of dividend distribution and 0 otherwise. Notes: All variables are winsorized at 99 percent levels. The t-statistics column report any significant difference in means of conventional variables between payers and non-payers. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

The average profitability of Egyptian firms is 7%, with a maximum value of 36% and a minimum value of -33%. This high fluctuation in profitability reflects the wide variety of events that affected the firms during the sample period. Moreover, firms size shows that firms in the sample has a mean of almost 2 and the maximum value is almost 4. Furthermore, the ownership structure variables show that the highest type of ownership is free float, followed by institutional ownership and finally the managerial ownership. As for the dependent variables, the payout ratio shows an average of 43% which means that firms usually prefer to retain more earnings rather than distributing dividends, this could reflect the tendency of Egyptian firms to depend on internal financing in their capital structure due to the high interest rates in Egypt during the sample period.

Finally the Skewness and Kurtosis value of all the independent variables show that most of the variables are not normally distributed but according to Gauss–Markov theorem, which indicates in order to get “best linear unbiased estimators” (BLUE); errors should be uncorrelated and their mean is zero and they show homo-scedasticity. Therefore, the normality assumption is not essential to

obtain BLUE results (Schmidt & Finan, 2018).

The second part of **Table 3** shows a comparison of the variables between payers and non-payers using the t-test. All the independent variables (free cash flow, profitability, investment opportunity, liquidity, firm size, free float ownership and managerial ownership) show a significant difference between payers and non-payers except leverage and institutional ownership. Dividend paying firms are found to be more profitable, with higher free cash flow, higher investment opportunity, lower liquidity, bigger in size, with lower managerial ownership and higher free float.

4.2. Regression Analysis

4.2.1. Logistic Regression

Before conducting the logistic regression, some diagnostics are done first. The linearity of the independent variables and the log odds is checked using the linktest and as shown in **Table 4**, and the results reveal that there is no misspecification error. Next the multicollinearity is checked and as shown in **Table 5**, there is no multicollinearity problem. Finally, the Hausman test is done to see which model to use random effect or fixed effect and the Hausman test is significant which means rejecting the null hypothesis that the model is random and therefore a fixed effect logistic regression is conducted. Since the Hausman test is significant, this could mean that the model suffers from an endogeneity problem so to mitigate this problem all variables are lagged at period t-1 (Elbannan, 2020).

Table 6 presents the results of the logistic regression, Model 1 tests the effect of the conventional variables (free Cash flow, investment opportunity, profitability, firm size, liquidity, leverage, managerial ownership, free float and institutional ownership). Model 2 tests the same relationship but firms having negative equity are excluded as these firms are usually financially distressed and characterized with high default risk and since they constitute only 3% of the whole sample so their omission will not influence the results (Budiarso et al., 2019). The following are the results after doing the HAC estimator “Heteroskedasticity and autocorrelation consistent estimator” to overcome any heteroskedasticity or autocorrelation problems that might appear in the model.

Table 4. Linktest for specification error.

Dividend Decision	Coefficient	Std. error	Z	P > z	[95% conf. interval]	
_hat	0.9718	0.1139369	8.53	0.000	0.7485	1.195142
_hatsq	0.0201	0.0545535	0.37	0.712	-0.0868036	0.1270423
_cons	-0.0092	0.104193	-0.09	0.929	-0.2134399	0.1949891

This table shows the Linktest that is used to check if the logistic regression used to test the effect of the dividend decision on the conventional variables (FCF, liquidity, leverage, firm size, investment opportunity, Free float, Managerial ownership and institutional ownership) suffers from any specifications error.

Table 5. Checking multicollinearity.

Variable	VIF	1/VIF
Liq	1.38	0.73
Lev	1.30	0.77
Prof	1.26	0.79
FS	1.21	0.83
FCF	1.19	0.84
MB_ratio	1.05	0.95
Free Float	1.12	0.90
Man_Own	1.02	0.98
Inst_Own	1.09	0.92

Tolerance and VIF and used to check if there is any linear combination between the independent variables of the model; liq (Liquidity), Lev (Leverage), Prof (Profitability), FS (firm size), FCF (free cash flow), MB ratio (investment opportunity), Free float (Free float ownership), Man_own (Managerial ownership and Inst_own (Institutional ownership).

Table 6. Logistic regression analysis.

Dividend Decision				
	Model 1		Model 2	
Prob > Chi2	0.0001***		0.0245**	
Hausman Test	0.0000***		0.0000***	
No of Observations	2450		2383	
Variables	Coefficient	P z	Coefficient	P z
FCF	0.0007516	0.883	0.0003786	0.940
MB_Ratio	-0.3902538*	0.075	-0.3799588*	0.077
Prof	4.673493**	0.041	4.581324	0.046**
FS	0.3852429	0.391	0.3359773	0.442
Liq	-0.0100147	0.821	-0.0070843	0.872
Lev	-2.924858	0.137	-2.559422	0.190
Man_Own	0.1532954	0.974	0.079425	0.986
Free_Float	-1.058464	-3.179377	-0.9064846	0.400
Inst_Own	0.1015486	0.926	0.0943738	0.929

This table shows the results of the logistic regression which tests the effect of the conventional variables namely; FCF free cash flow, MB_Ratio Investment Opportunities, Prof Profitability, FS Firm Size, Liq Liquidity, Lev Leverage, Man_Own Managerial Ownership, Free_Float free float ownership, Inst_Own Institutional Ownership, and their effect on the dividend decision. Shown in the table the coefficients of each variables and the P values. Model 1 is the full sample and Model 2 excludes from the sample firms with negative equity. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

As for the results, free cash flow, firm size, liquidity, leverage, managerial ownership, free float and institutional ownership show an insignificant relationship with the dividend decision which means that these variables do not have an impact on the company's decision of whether to distribute dividends or not.

The only two variables that show a significant relationship with dividend decision are: investment opportunity, which shows a significant negative relationship at a significance level of 10% which supports the second research hypothesis H2. This could be explained through the pecking order theory which states that firms pay dividends only when they have residuals after financing all their investment opportunities since they should depend first on internal sources of finance. The results are consistent with many previous studies [Abor and Bokpin \(2010\)](#), [Dewasiri et al. \(2019\)](#), [Imamah et al. \(2019\)](#) and [Khana et al. \(2020\)](#).

Relating this result to the Egyptian context, this could be due to the fact that external financing is not easy in the Egyptian market as the stock market passed in the sample period with many crashes, starting from the Global Financial Crisis in 2008, followed by the Egyptian revolution of 2011, where main indices of Egypt's stock exchange (EGX 30 and EGX 100) both fell by 10.5% and 14% respectively, then the devaluation of the currency in 2016 and finally the outrage of Coronavirus when the Egyptian exchange lost around LE 134.1 billion of its market capitalization ([OECD, 2020](#)). Hence the equity issues as a financing option is not easy in Egypt due to recent stock market crashes.

Moreover, the lending rate of banks in Egypt is increasing ever since the revolution of 2011 as shown in [Figure 1](#), it increased to 12% and reached 13% in 2016 and then it jumped to 18% in 2017 and 2018 and then started decreasing again. So overall we can say that external financing in Egypt is costly whether it is through the stock market or bank loans. This can justify why firms in Egypt depend first on internal sources whenever there is an investment opportunity and dividends are considered residual.

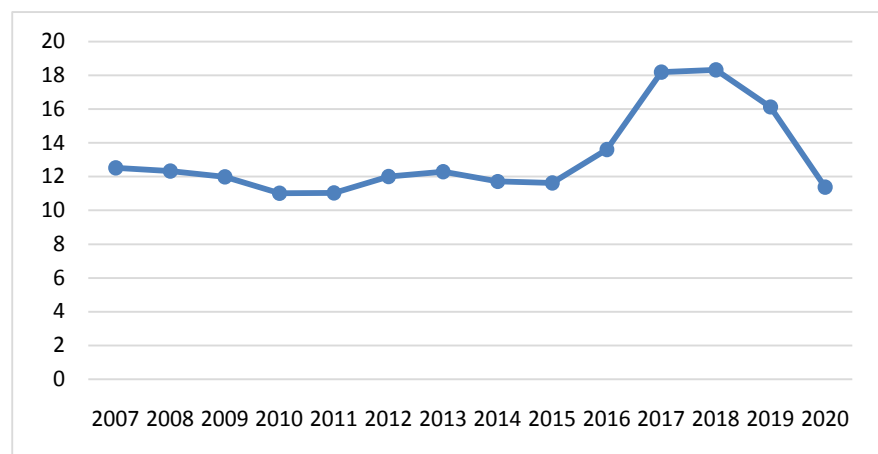


Figure 1. Lending rates in Egypt (Source: World Bank).

Profitability also tends to be one of the significant determinants of payout policy in Egypt. It shows a significant positive relationship which supports the first hypothesis H1. These results are in line with the life cycle theory that the more mature firms get, the more profitable they are and therefore, the less investment opportunities they have and consequently the higher their dividends (Ahmed, 2013).

This result is consistent with a lot of previous studies such as Fama and French (2001), Al-Malkawi (2007), Bokpin (2011), Abdelsalam and El-Masry (2008), Dewasiri et al. (2019).

Relating this to the Egyptian context, this could have the same explanation of investment opportunity that whenever firms are having investment opportunity, they will rely more on internal sources of finance, since external sources are costly and therefore they cannot afford to distribute dividends but when firms mature that have less investment opportunities and become more profitable therefore, they decide to payout dividends to investors.

As for Model 2, no change on the results were found, which means that firms having negative equity did not cause any distortion in the data.

4.2.2. GLS Regression

After testing the effect on conventional variables on dividend decision using the logistic regression. In this section, Models 1 and 2 are tested again but using payout ratio as a dependent variable. Furthermore, in this section Model 3 is added in which firms that have payout ratio less than zero or more than 1 are excluded from the sample. This is mainly due to the fact that healthy firms have payout ratio that reflect their real earnings instead of “cooking books” or in other words paying out earnings that they don’t have (Harackiewicz et al., 2002). Therefore, firms realizing net loss and paying out dividends and firms paying out dividends more than their realized earnings are excluded from the sample; these firms constitute almost 16% of the sample.

Since this study uses panel data, Hausman test is conducted to determine whether fixed effects or random effects models should be used. Given the results of Table 7, the Hausman test is insignificant for the 3 models under investigation and thus random effects model should be used. The following are the results after doing the HAC estimator “Heteroskedasticity and Autocorrelation Consistent Estimator” to overcome any heteroskedasticity or autocorrelation problems that might appear in the model.

The results of Table 7 show that three variables have a significant relationship with payout ratio which are: free cash flow, profitability and managerial ownership. First, free cash flow shows a significant negative relationship with the payout ratio, although it was insignificant in the logistic regression model which means that it is not necessary in the decision to distribute or not but it does influence the increase and decrease of dividend. These results contradict the third hypothesis H3 that predicts that there is a significant positive relationship between free cash flow and the payout policy but it is consistent with some pre-

vious studies such as Afza and Mirza (2010).

A justification of this result is provided by Deng et al. (2013) who argue that in an imperfect market where there are some restrictions on the external sources of finance, firms choose to keep the free cash flow and cut or decrease dividends and this could be their only source of finance. This Justification perfectly matches the Egyptian market since it is described by Metwally and Darwish (2015) as an inefficient and as described in the section 4.2.1 that external sources of finance face a lot of restrictions in the Egyptian market.

Lastly, managerial ownership shows a significant positive relationship with payout ratio; this contradicts the agency theory that states that managerial ownership could be a significant tool for good governance since they are responsible on the financial decision inside the company, therefore they should invest in profitable projects and hence decrease dividends.

Table 7. GLS Random effect model.

	Payout Ratio					
	Model 1		Model 2		Model 3	
Prob > Chi2	0.0317**		0.0091***		0.03362**	
Hausman Test	0.9389		0.9569		0.7456	
No of Observations	2450		2383		2058	
Variables	Coefficient	P z 	Coefficient	P z 	Coefficient	P z
FCF	-0.0016**	0.022	-0.0015539**	0.024	0.0002742	0.521
MB_Ratio	0.00049	0.986	0.0009829	0.972	-0.006261	0.651
Prof	1.08272***	0.001	1.0708***	0.001	-0.1009263	0.591
FS	0.04868	0.365	0.0601805	0.295	-0.0014435	0.964
Liq	0.00197	0.821	0.0021939	0.807	-0.0026162	0.550
Lev	-0.1440	0.627	-0.1415158	0.673	-0.26849***	0.008
Man_Own	0.63860**	0.048	0.63512**	0.045	-0.0908973	0.679
Free_Float	0.03248	0.801	0.0397266	0.764	0.0441764	0.578
Inst_Own	0.28345	0.386	0.2686506	0.401	-0.1202179	0.119

This table shows the results of the GLS random effect regression which tests the effect of the conventional variables namely; FCF free cash flow, MB_Ratio Investment Opportunities, Prof Profitability, FS Firm Size, Liq Liquidity, Lev Leverage, Man_Own Managerial Ownership, Free_Float free float ownership, Inst_Own Institutional Ownership, and their effect on the payout ratio. Shown in the table the coefficients of each variables and the P-values. Model 1 is the full sample, Model 2 excludes from the sample firms with negative equity and Model 3 includes only paying firms having a payout ratio higher than 0 and less than 1. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 8. Summary of research hypotheses results.

Hypothesis	Result
<i>H1: There is a significant positive relationship between payout policy and profitability.</i>	Supported
<i>H2: There is a significant negative relationship between investment opportunity and dividend payout policy.</i>	Supported
<i>H3: There is a significant positive relationship between cash flow and dividend payout policy.</i>	Partially Supported
<i>H4: There is a significant negative relationship between leverage and dividend payout policy.</i>	Supported
<i>H5: There is a significant positive relationship between liquidity and dividend payout policy</i>	Rejected
<i>H6: There is a significant positive relationship between firm size and dividend payout policy</i>	Rejected
<i>H7a: There is a significant negative relationship between institutional ownership and dividend payout policy</i>	Rejected
<i>H7b: There is a significant positive relationship between managerial ownership and dividend payout policy</i>	Supported
<i>H7c: There is a significant negative relationship between free float ownership and dividend payout policy.</i>	Rejected

On the other hand, it matches the justification of Al-Qahtani & Ajina (2017) that the increase of managerial ownership leads to an opportunistic behavior in the company and to control this behavior, the board of directors decide to increase dividends, which matches the poor corporate governance environment in Egypt (EBRD, 2021), it also matches hypothesis 7b and therefore it is accepted. This result is in line with a lot of previous studies such as Sakir & Fadli (2014), Sindhu et al. (2016), Al-Qahtani and Ajina (2017) and Dhuhri and Diantimala (2018).

Model 2 did not show any difference in the results after excluding firms with negative equity. Thus, only H1 and H7b are accepted and all the other hypotheses are rejected.

Lastly in Model 3, leverage shows a significant negative relationship with the payout ratio, which means that H4 is accepted. This means that if a firm is already a payer, the amount of debts it has will influence its decision to increase or decrease dividends. This is consistent with the argument that the high cost of external financing in Egypt may prevent firms from increasing their dividends when they have high debt burden.

Table 8 provides a summary of the main results obtained as response to the research hypotheses.

5. Conclusion

This study investigates the determinants of payout policy in a developing market with poor corporate governance and a lot of economic downturns like Egypt which is lacking in the literature as most of previous studies mainly focus on developed market.

This paper investigates the effect of profitability, free cash flow, investment opportunity, liquidity, leverage, firm size, managerial ownership, institutional ownership and free float ownership, on two dependent variables. First the dividend decision or in other words the decision of whether to distribute dividends or not despite the quantity of dividends distributed. The second dependent variable which is the payout ratio shows the quantity of dividends to be distributed from the net income.

The results of the dividend decision show that only two variables were significant or in other words only investment opportunity and profitability are what determines the dividend decision of Egyptian firms and therefore, only H1 and H2 are accepted. These results describe that due to the economic crashes and downturns that the Egyptian market recently went through, the external sources of finance whether bank loans or capital market (stock issuance) are very restricted and costly, therefore, firms mainly depend on their internal sources in financing their investment opportunities and will not be able to payout dividend whenever that are deciding to go for new investments. Therefore, only mature profitable firms that have less investment opportunities are able to distribute dividends to shareholders.

As for the results of the payout ratio model, the results show that three variables influence the company's decision to increase or decrease dividends or the percentage of dividends to be paid out from the firm's earnings. These variables are: free cash flow, profitability and managerial ownership so H1 and H7b are supported but H3 is partially. We justified these results by explaining that due to the high financing cost, firms choose to keep free cash flow and decrease dividends to use it as source of financing and also the bad economic and political situation of the Egyptian market could lead firms to keep the free cash flow as a backup plan to any financial distress that could happen in the near future. So, firms choose to increase dividends only when they are mature and that realize high profits.

Moreover, the Egyptian market is characterized with its poor corporate governance and therefore, high managerial ownership represents a threat that managers could use the firms free cash flow to realize their own interest, therefore the board of directors could vote for lower dividends to control the opportunistic behavior of managers. As robustness checks when firms having extreme payout ratio were excluded and we included in the sample only dividend paying firms having payout ratio between 0 and 1. We found that leverage has a significant negative relationship with the payout ratio and all the other variables showed an insignificant relationship with payout ratio and therefore, H4 is supported.

After reviewing these results, firms' managers should pay attention to their dividend policies and carefully focus on the determinants since a minor change in a firm's dividend payout policy may lower the investments on the company's shares. The same for investors they should be careful on these determinants

when making their investment decision.

6. Suggestion for Further Research and Limitations of the Study

The quality of the study depends purely upon the accuracy, reliability and quality of secondary data. However, collecting financial data in Egypt was a challenge. So the main limitation for this research is the that due to unavailability of data, data was gathered from several sources which created inconsistency regarding the structure of the financial statements.

Finally we recommend that further research could consider studying more aspects of the dividend policy and specially behavioral factors which is nowadays the new focus of payout policy after Baker and Wurgler (2004) catering theory. These behavioral aspects could help better explaining the payout policy in a developing market like Egypt since they are characterized by noise and speculative trading behavior.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix

List of excluded companies from our sample:

Abu Dhabi Islamic Bank - Egypt
 Al Baraka Bank Egypt
 Al Tawfeek Leasing Company-A.T.LEASE
 Alexandria National Company for Financial Investment
 Arab Moltaka Investments Co
 Arabia Investments Holding
 Aspire Capital Holding For Financial Investments
 B Investments Holding
 Banque Du Caire
 Belton Financial Holding
 CI Capital Holding For Financial Investments
 Certificates Of Odin Egyptian Equity Investment Fund-KASAB
 Citadel Capital - Common Shares
 Citadel Capital - Preferred Shares
 Commercial International Bank (Egypt)
 Contact Financial Holding
 Credit Agricole Egypt
 Delta Insurance
 EDRs Of Al Salam Holding Company
 EGX 30 INDEX ETF
 Egyptian Arabian (cmar) Securities Brokerage EAC
 Egyptian Financial Group-Hermes Holding Company
 Egyptian Gulf Bank
 Egyptian Kuwaiti Holding
 Egyptian Kuwaiti Holding-EGP
 Egyptians Real Estate Fund Certificates
 El Ahli Investment and Development
 El Kahera El Watania Investment
 El Orouba Securities Brokerage
 Export Development Bank of Egypt (EDBE)
 Faisal Islamic Bank of Egypt - In EGP
 Faisal Islamic Bank of Egypt - In US Dollars
 Gadwa For Industrial Development
 Grand Investment Capital
 Housing & Development Bank
 International Company For Leasing (IncoLEASE)
 Mohandes Insurance
 Naeem Holding

Continued

National Bank Of Kuwait - Egypt - NBK
ODIN Investments
Orascom Financial Holding
Osool ESB Securities Brokerage
Pioneers Properties For Urban Development(PREDCO)
Prime Holding
Qatar National Bank Alahly
Raya Holding For Financial Investments
Saudi Egyptian Investment & Finance
Saudi Egyptian Investment & Finance \$
Societe Arabe Internationale De Banque (SAIB)
Suez Canal Bank S.A.E
Fawry For Banking Technology And Electronic Payment
Integrated Diagnostics Holdings plc
Iron And Steel for Mines and Quarries
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