Life-Cycle Theory of Corporate Dividend Policy in Jordan: The Role of Equities, Assets, and Age during the Period 2015–2019

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Abstract

The study examines the effect of book value per share, retained earnings per share, asset turnover ratio, and age on dividend per share of non-financial Jordanian listed companies for the period from 2015 to 2019. The research hypotheses were formulated and evaluated based on the related dividend policy theories, in addition to prior empirical findings. Based on cross-section time-series data, a panel data model with 110-firm-year observations was developed. Both Random Effect Model (REM) and REM with Robust Standard Errors were employed to test the study hypotheses. Consistent with the life-cycle theory argument of dividend policy, the results of REM with Robust Standard Errors show that book value per share and retained earnings per share have a positive and significant relationship with dividend per share, while the relationship between asset turnover ratio and dividend per share is insignificant. With respect to the firm age, the results show an insignificant relationship with dividend per share. The findings of the current study show that both assets and stockholders' equity of balance sheet are critical items in explaining the dividend policy of Jordanian non-financial firms. Thus, policy-makers, investors, financial analysts, and researchers are invited to employ and consider the current study model in any possible relevant contexts.

Keywords: Dividend Policy, Book Value, Retained Earnings, Life-Cycle Theory

JEL Classification Code: M4, M41, G11, G35

1. Introduction

In light of several studies that have tested empirically the determinants of share price based on Ohlson (1995) model of price valuation and other empirical models such that of Miller and Modigliani (1961), the current study comes as a new addition to examine the determinants of dividend policy and to build on Ohlson (1995) model by focusing on retained earnings instead of future earnings and by incorporating assets through assets turnover ratio and firm age to show the possible effect on dividend policy while retaining the book value of equity as an explanatory variable in the model.

It has been argued early that expected dividends and price are the main motivators for the investor to buy shares (Gordon, 1959). Therefore, it is necessary for investors to

have accurate information about potential dividends (Nam, 2019). Thus, several studies have examined the determents of share price (Al-Hares et al., 2012; Gallizo & Salvador, 2006; Ghauri, 2014; Obeidat, 2009), while the determinants of dividend policy are ignored to a considerable extent. The focus on share price may be motivated based on the presence of Ohlson's model of price valuation (Ohlson, 1995). Even those studies that were interested in studying the dividend policy determinants were only interested in some traditional internal corporate variables such as size, profitability, liquidity, leverage, and investment opportunities (Aivazian et al., 2003; Al-Najjar & Hussainey, 2009; Fama & French, 2001; Kumar & Sujit, 2018; Maladjian & Khoury, 2014) or governance attributes (Jabbouri & Attar, 2018) and ignored the potential relationship between some important variables and dividends policy. Similarly, few studies (Al-Malkawi, 2008; Al-Najjar, 2009) were interested in dividend strategies in Jordan.

Investigation of several market valuation models show the importance of examining the potential effect of several variables on dividend policy. Examples include book value per share, retained earnings per share, assets turnover ratio, and age. These four variables form the focus of the

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current study. The justification of selecting these variables is based on the importance of such variables in share price valuation as reported in prior studies. For example, Riahi-Belkaoui and Picur (2001) in their study to determine the market price stated that the model should include book value, and the two main components of earnings; retained earnings and dividends (Al-Hares et al., 2012). Besides, it has been argued that dividends usually interact with earnings (Myers & Majluf, 1984). Further, the findings of DeAngelo et al. (2006) showed that retained earnings have a strong impact on dividends payment comparison with the traditional variables such as profitability. Moreover, dividend payments are usually linked to the different stages of age according to life-cycle theory (Arko et al., 2014).

In this study, the book value of equity per share is taken as a whole to examine its potential effect on the dividends per share. Besides, the retained earnings component is also taken as another variable to examine its potential effect on the dividends per share. These two variables represent the equity section of the balance sheet. The assets turnover is the third explanatory variable and represents the asset section of the balance sheet, while the firm age represents the fourth explanatory variable in this study.

Several theories were suggested to justify the dividend strategies. Examples of these include signaling, life-cycle, free cash flow, and catering theories (Arko et al., 2014; Baker et al., 2019). Taking that some theories such as catering theory have received low support in prior studies (Ferris et al., 2009) and the extensive debate surrounding the dividend policy topic in accounting (Barros et al., 2020), the current study is built mainly on life-cycle theory and, to some extent, on other theories such as signaling theory to explain the dividends policy among Jordanian companies.

Based on the notion of life-cycle theory, the study concludes that book value and retained earnings are contributed significantly and positively to dividend policy. These findings are a new addition to the current accounting literature and offer new variables to the current models in dividend policy.

The next section discusses the theoretical framework of the study. Section three investigates the prior studies and develops the study hypotheses. Section four provides the methods of study. Section five discusses the results of the study and section six concludes the paper.

2. Theoretical Framework

Most important, the life-cycle theory is used extensively in explaining the behavior of dividends in several contexts. According to DeAngelo et al. (2006), larger and old firms used to pay dividends comparing with small younger firms, which need to retain earnings for potential investment opportunities. Fama and French (2001) supported this argument early and found that dividend payment has centered on large and

profitable firms. Similarly, DeAngelo et al. (2006) argued that older firms, have accrued retained profits and sufficient equity capital, and therefore have a greater tendency to pay dividends than younger firms, who need additional earnings and investment opportunities to accomplish their activities in the early stages of their ages. This argument has already also supported early by DeAngelo et al. (2004) and consistent with the early argument of Fama and French (2002) in that payment of dividends are generally less in investment-oriented firms. Empirically, Danila et al. (2020) found that high investment opportunities have a negative impact on dividend payment. Consequently, life-cycle theory offers the justification for the relationship between the study explanatory variables and the dividend policy. Apart from the firm age, residual theory suggests that firms that have good potential investment opportunities pay lower or even not pay dividends to stockholders (Tahir & Mushtaq, 2016).

Besides, the signaling theory offers some justification for dividends payment in that dividends can mitigate the information asymmetry (Baker et al., 2019) between managers and shareholders by offering the necessary information (Patra et al., 2012). For example, signaling theory proposes that firms tend to pay dividends to mitigate the uncertainty surrounding their future (DeAngelo et al., 2006) and may help firms to show their ability in generating funds in the future (Aivazian et al., 2003). Further, signaling theory has justified the retention policy in that earnings may be used in innovative projects to gain more earnings for shareholders in the future (Yarram & Dollery, 2015). In this context, Boldin and Leggett (1995) found a relationship between the dividend payment and the quality of banks since dividends send signals about the strong financial position. However, the agency theory proposes that dividends can drop costs (Adjaoud & Ben-Amar, 2010; Cao et al., 2017; Chen et al., 2017) by using the free cash flow for dividends (Barclay et al., 1995).

3. Literature Review and Hypotheses Development

As mentioned above, the variables of the current study were ignored in the prior studies and several studies have focused on the traditional accounting variables. For example, Al-Ajmi and Hussain (2011) used the life-cycle theory and found that accounting indicators such as cash flows and profitability are the main determinants of dividends among Saudi companies. Similarly, Patra et al. (2012) found that profitability, liquidity, and size of Greece non-financial companies affect dividend policy positively and significantly. Similarly, Arko et al. (2014) found that larger firms that have profit and potential investment opportunities paid more dividends in Sub-Saharan Africa. Thakur and Kannadhasan (2018) found a similar effect in respect to profit and investment opportunity.

Next, the study focuses on the explanatory variables to build the study's hypotheses.

3.1. Equities and Dividend Policy

This sub-section reviews the relevant literature on dividend policy impact of both book value per share and retained earnings per share to develop the first two hypotheses of the study.

3.1.1. Book Value of Equity

Book value of equity, also known as shareholder's equity, is a firm's common equity that represents the amount available for distribution to shareholders. It has been known that *"Book value of equity consists of two economically different components: retained earnings and contributed capital"* (Ball et al., 2020, p. 231). Besides, it has been argued that the book value of equity is an important indicator in market valuation and a good indicator for future earnings (Jiang & Stark, 2013). This argument is in line with Ohlson's market valuation model (Ohlson, 1995) and supports the findings of Barth et al. (1998), Bao and Chow (1999), and Collins et al. (1999). However, Gregoriou et al. (2015) found that linking book value per share with dividends per share could explain the higher portion of the variation in the stock price. In the same vein, Ohlson (1995, p. 665) argued that the potential earnings depend on "*current book value"*, "*current earnings and dividends"*. Despite the importance of book value to earning and valuation models, there is a considerable shortage in the prior related studies. For example, the correlation matrix of Gregoriou et al. (2015) study shows an acceptable positive association between book value per share and dividend per share, taken that the panel model considers stock price as a dependent variable. Besides, Al-Twaijry (2007) found a significant relationship between higher book value per share and dividend per share.

Theoretically, the life-cycle theory argues that older firms used to have larger book value and accordingly have the tendency to pay dividends (Gallizo & Salvador, 2006). Accordingly, it can be proposed that book value per share (BVS) has a positive and significant relationship with dividend payment as measured by dividend per share (DPS).

H1: There is a positive and significant relationship between BVS and DPS.

3.1.2. Retained Earnings

The earnings include dividends (Papanastasopoulos et al., 2010), and retained earnings (Al-Hares et al., 2012). The retained earnings form the accumulated balance of income after deducting losses and dividends (Ball et al., 2020; Bechmann & Raaballe, 2007). Retained Earnings (RE) are the accumulated portion of a business's profits that are not distributed as dividends to shareholders but instead are reserved for reinvestment back into the business (Ball et al., 2020).

The significant linkage between retained earnings and dividend payment has been supported in life-cycle theory (DeAngelo et al., 2006; Fama & French, 2001) in that older companies have sufficient retained earnings and accordingly have the opportunity to pay dividends. Further, paying dividends in the presence of retained earnings sends positive signals to potential investors about the bright future of the firm (Yarram & Dollery, 2015), and even if a part of such retained earnings is used for potential investments, these investments may create dividend in future (Karathanassis & Philippas, 1988).

Empirically, results from Bhole (1980) showed a clear association between dividend policy and the retained earnings strategy. Similarly, DeAngelo et al. (2006) found a strong relationship between retained earnings and dividend payment. Further, Denis and Osobov (2008) found a positive and significant relationship between the retained earnings and dividends payment in developed markets. Therefore, it can be proposed a positive and significant relationship between retained earnings per share (RES) and dividend payment as measured by dividend per share (DPS).

H2: There is a positive and significant relationship between RES and DPS.

3.2. Asset Turnover and Dividend Policy

Asset turnover is the ratio of total sales or revenue to average assets. This metric helps investors understand how effectively companies are using their assets to generate sales. Investors use the asset turnover ratio to compare similar companies in the same sector or group. It has been argued that; *"earnings cannot be expected without assets"* (Ohlson, 1995, p. 677). Therefore, a high asset turnover ratio is an indicator of the robustness of firms' resources in generating income and thus mitigating several types of costs (Florackis & Ozkan, 2009) due to dividends payment. On the other hand, the low asset turnover ratio increases cost as a result of the inability of business managers to employ the assets effectively (Florackis & Ozkan, 2009). Such behavior influences earnings negatively, and thus dividends will be decreased significantly. Based on this argument, life cycle theory suggests that younger firms are mainly interested in investment opportunities and paid low dividends in the presence of low book value and high asset turnover ratio (Gallizo & Salvador, 2006).

Empirically, Nerviana (2016) proposed that asset turnover has a positive effect on dividend payment based on the notion that a greater turnover ratio means greater earnings and thus greater dividends, but the empirical results failed to prove such argument and concluded

that there is no relationship between assets turnover and dividend payout ratio. Olson and McCann (1994) found that higher asset turnover is impacted dividend payment positively. Florackis and Ozkan (2009) show a link between dividends and high asset turnover. Setyaningsih and Yuliana (2020) found that the relation between total assets turnover and dividend payout ratio is mediated by return on assets.

Thus, it can be argued that the relationship between asset turnover ratio (ATR) and dividend payment as measured by dividend per share (DPS) is positive and significant.

H3: There is a positive and significant relationship between ATR and DPS.

3.3. Age and Dividend Policy

It has been argued that the age of firms is an important variable in dividend policy studies (Gallizo & Salvador, 2006). The life-cycle theory links the dividend payment with the age of the firm. Thus, prior studies in the field (DeAngelo et al., 2006; Denis & Osobov, 2008; Singla & Samanta, 2019) have built on this idea to explain the dividend policy in several contexts. Some studies also linked the age of a firm through life-cycle theory with the retention policy (DeAngelo et al., 2006) and considered the life cycle the dominant factor in selecting between dividend payment and retention (Singla & Samanta, 2019). Thus, the idea of age in life-cycle theory implies that dividends have usually paid by old firms due to the availability of sufficient earnings, while young firms usually tried to use the fund in investment instead of paying dividends to strengthen the financial position through generating more earnings from the available resources in early stages (DeAngelo et al., 2006).

Empirically, few studies have incorporated age as an explanatory variable in dividend policy studies. However, Singla and Samanta (2019) found an insignificant relationship between age and dividend policy. On the other hand, Stepanyan (2011) found that cash dividends have centered in the mature stage of the firm. Further, Al-Malkawi (2008) found a positive and significant relation between age and dividend policy. Thus, it can be proposed that older firms tend to pay dividends.

H4: There is a positive and significant relationship between AGE and DPS.

4. Research Methods

This section provides in detail the sampling techniques, defines the study variables, develops the study empirical model, and introduces the statistical tools used to describe and test the study hypotheses.

4.1. Sample and Data

The current study examines empirically the impact of four variables including book value per share (BVS), retained earnings per share (RES), asset turnover ratio (ATR), and age (AGE) on the dividend per share (DPS) during the period from 2015 to 2019. Besides, the size (SIZ) of the firm is used as a control variable in the study and is measured through the total assets. The population of the current study consists of 179 listed companies on Amman Stock Exchange (ASE). The selection process of the relevant sample for the current study was based on solid rules including:

1. The availability of all the data (Olson & McCann, 1994) over the period from 2015 to 2019.
2. All the firms have paid dividends (Thakur & Kannadhasan, 2018) during the study period (2015–2019).
3. The firm is not traded on the Over-The-Counter (OTC) market.
4. The firm is not classified under the financial sector (Che-Yahya & Alyasa-Gan, 2020).

As shown in Table 1, applying these rules gives a sample of 22 non-financial companies after excluding 157 irrelevant companies. Consistent with Patra et al. (2012), the 22 companies have full data for all variables over the study span. The study sample has 13 services and 9 industrial companies. The final sample also gives a balanced panel data of 110 firm-year observations during the period from 2015 to 2019. The current study observations, for example, exceed that of Ghauri (2014).

Table 1: Selection Process of the Study Sample

Population	No.	%
Total	179	100
Less:		
Any firm classified under the financial sector such as banks, insurance, or any other financial firms.	(96)	(53.6)
The firm is traded on the OTC market, some of the data are not available or the firm has not paid dividends at any year of the study period.	(61)	(34.1)
Relevant final sample	22	12.3
Services firms	13	59.1
Industrial firms	9	40.9
Total	22	100

This sample includes the largest pioneer companies that used to pay dividends even during the COVID-19 pandemic. This, however, supports the results of the current study and considers a new addition to the methodology of accounting studies.

The main two sources of data are the ASE website and the Securities Depository Center (SDC) website. The book value per share, dividend per share data, total assets values, and age were directly taken from the SDC website. The retained earnings values were taken from the balance sheets of listed firms, which were downloaded as a part of the annual corporate reports from the ASE website, and then the retained earnings per share were calculated. The assets turnover data were taken from the ASE website.

4.2. Variables and Model

In addition to the dependent variable, the current study has four explanatory variables and one control variable.

Dependent variable: the dividend policy in the current study is the dependent variable and is represented by dividend per share (DPS).

Independent variables: the independent variables in the current study include equity, asset, and age. Two independent variables are used to represent the equities including book value per share (BVS) and retained earnings per share (RES). The total asset turnover ratio (ATR) is used to represent the assets.

1. Book value of equity or the total book value of shareholders' equity is calculated by adding contributed capital to retained earnings (Ball et al., 2020).
2. Retained Earnings represent the accumulated earnings less the accumulated dividends and are increased with income and decreased with loss (Ball et al., 2020).
3. Asset turnover ratio shows the efficiency of business managers in using assets to create earnings (Singh & Davidson, 2003).
4. Firm age is determined based on the operation date of the firm as shown on the SDC website.

Control variable: firm size is used as a control variable.

Based on the above discussion, the empirical model of the study is shown in equation (1):

$$\text{DPS}_{i,t} = \alpha + \beta_1 \text{BVS}_{i,t} + \beta_2 \text{RES}_{i,t} + \beta_3 \text{ATR}_{i,t} + \beta_4 \text{AGE}_{i,t} + \beta_5 \text{SIZ}_{i,t} + e_{i,t} \tag{1}$$

Where, $\text{DPS}_{i,t}$ represents dividend per share of the company i at period t and equals dividends paid/number of shares outstanding (Singla & Samanta, 2019; Yusof & Ismail, 2016). $\text{BVS}_{i,t}$ is the book value per share of the company i at period t and equals the total amount of shareholders' equity/ number of shares outstanding (Al-Twaijry, 2007; Gallizo & Salvador, 2006). $\text{RES}_{i,t}$ is retained earnings per share of the company i at period t and represents retained earnings/ number of shares outstanding (Yemi & Seriki, 2018). $\text{ATR}_{i,t}$ is the asset turnover ratio of the company i at period t and represents total sales/total assets (Florackis & Ozkan, 2009). $\text{AGE}_{i,t}$ represents the age of company i at period t based on the date of operations. $\text{SIZ}_{i,t}$ is the size of the company i at period t and represents the natural logarithm of total assets (Singla & Samanta, 2019). $e_{i,t}$ is the error term of the company i at period t.

5. Results and Discussion

This section provides the results of the study.

5.1. Descriptive Statistics

Table 2 shows the descriptive statistics for all variables. The mean value of DPS is 0.2707727 JOD. This means that on average each outstanding share earns 0.2707727 JOD from the dividend paid during the period from 2015 to 2019, with a minimum amount of 0.04 JOD and a maximum amount of 2.20 JOD. The low standard deviation value (0.3562275) indicates the stability and consistency of the dividend payments for the study sample. The mean value of BVS is 2.437973 JOD with a minimum value of 1.267 JOD and a maximum value of 10.708 JOD.

Table 2: Descriptive Statistic

Variable	Observations	Mean	SD	Minimum	Maximum
DPS	110	0.2707727	0.3562275	0.04	2.2
BVS	110	2.437973	1.945839	1.267	10.708
RES	110	0.5100353	0.5483437	0.0071914	3.929227
ATR	110	0.6835818	0.4912576	0.085	2.568
AGE	110	33.31818	21.22701	6	81
SIZ	110	18.16787	1.525704	15.66879	21.08806

This result contradicts that of Gregoriou et al. (2015), where the minimum level of book value was negative. Besides, the mean value is considered high according to Al-Twaijry (2007). The mean value of RES is 0.5100353 JOD with a minimum value of 0.0071914 JOD and a maximum value of 3.929227 JOD. Contrary to the findings of DeAngelo et al. (2006), the retained earnings are positive among the study sample during the study period 2015–2019. This is -in general- an indication of the strength of the financial position of the study sample. Further, the value of standard deviation indicates the stability of retention policy among the study sample. In this context, Bhole (1980) found that retention policy is stable among larger firms. The average value of the ATR ratio is 0.6835818. Most important, the mean value of age is about 33 years. This means that the firms are in the mature stage of the life cycle (Singla & Samanta, 2019). The mean value of age exceeds that of several prior studies in the field (Al-Malkawi, 2008; Singla & Samanta, 2019). This, however, helps in justifying the hypotheses results based on life-cycle theory. The average value of the size is 18.16787. In general, the standard deviation values for all variables are low. This indicates the consistency of all indicators for the entire sample during the study period. Based on the descriptive statistics, it can be argued that the study sample includes mature and larger firms with high book value and retained earnings. This support the suggestion of life-cycle theory in that such type of firms tends to pay dividends instead of using the fund in investment activities (DeAngelo et al., 2006).

Table 3 includes the correlation coefficients along with the Variance Inflation Factors (VIF) values. It shows that the correlation coefficients among the independent variables and the VIF values are not high enough to cause the problem of multicollinearity. Besides, the correlation between BVS and DPS is strong. Similarly, the association is strong between RES and DPS.

5.2. Panel Data Regression Results

Three-panel data regressions were initially performed to test empirically the relationship between the explanatory variables and the dependent variable. These include Pooled Ordinary Least Square (OLS), Fixed Effect Model (FEM), and Random Effect Model (REM). Two main tests are performed to select the relevant regression technique for the current model. These include the Hausman test and Breusch and Pagan Lagrange Multiplier test (Torres-Reyna, 2007). The result of the Hausman test indicates the relevancy of REM ($\chi^2 = 3.70$, $P = 0.5934$). Besides, the result of the Breusch and Pagan Lagrange Multiplier test also indicates the relevancy of REM (Chi2 = 140.44, $P = 0.0000$).

However, several tests were performed to ensure the robustness of REM. According to Hoechle (2007), cross-sectional dependence is a potential problem in most panel data models (Driscoll & Kraay, 1998; Hoechle, 2007). It has also been argued that cross-sectional dependence affects the results of those studies with long time series (Baltagi, 2005). Similarly, it has been argued that serial correlation has no actual impact on the results of studies that have a low time span (Akel & Torun, 2017). Nevertheless, the cross-sectional dependence test result ($P = 0.4633$) using the Pesaran test does not support the presence of cross-sectional dependence in REM. Besides, the Wooldridge test result ($F = 2.977$; $p = 0.0992$) does not support the presence of autocorrelation (Drukker, 2003). Nevertheless, the Wald test ($P = 0.0000$) supports the presence of heteroscedasticity in the model (Van Dan & Binh, 2019). Besides, there is a lot of debate about the relevant estimation method to control any problems. For example, Feasible Generalized Least Square (FGLS) may give poor outcomes due to a low time span ($N > T$) in the current study (Hoechle, 2007). However, Singla and Samanta (2019) used REM with robust standard errors to control such problems. Therefore, REM is prepared with Robust Standard Errors to control for heteroscedasticity problems (Reed & Ye, 2011; Torres-Reyna, 2007). Both REM and REM with Robust Standard Errors were prepared. As shown in Table 4, the REM with Robust Standard Errors is significant (Wald $\chi^2 = 440.29$; $p = 0.0000$) and the model explains about 82% of the variation in dividend policy of Jordanian firms. This exceeds that of Singla and Samanta (2019).

Table 3: Correlation Matrix and Variance Inflation Factors (VIF) Results

Variable	DPS	BVS	RES	ATR	AGE	SIZ
DPS	1					
BVS	0.7282	1				
RES	0.6727	0.2191	1			
ATR	0.0636	−0.1605	0.0490	1		
AGE	0.0813	0.2801	−0.1601	−0.0724	1	
SIZ	0.2428	0.3211	−0.0701	0.2643	0.2912	1
VIF	−	1.38	1.14	1.19	1.20	1.37

Table 4: Results of REM and REM with Robust Standard Errors Estimations

Variable	REM				REM with Robust Standard Errors			
	Coef.	**Std. Err**	**Z-stats.**	**P-value**	**Coef.**	**Robust Std. Err**	**Z-stats.**	**P-value**
Cons	−0.5317259	0.3973169	−1.34	0.181	−0.5317259	0.2910353	−1.83	0.068
BVS	0.1059362	0.0173901	6.09	0.000	0.1059362	0.0186115	5.69	0.000
RES	0.3072226	0.0361276	8.50	0.000	0.3072226	0.062888	4.89	0.000
ATR	0.0512664	0.0442807	1.16	0.247	0.0512664	0.0526888	0.97	0.331
AGE	−0.0009911	0.0016288	−0.61	0.543	−0.0009911	0.0015413	−0.64	0.520
SIZ	0.0212194	0.0228713	0.93	0.354	0.0212194	0.0151482	1.40	0.161
Wald χ^2	415.80				440.29			
Prob.	0.0000				0.0000			
R^2 within	0.7950				0.7950			
R^2 between	0.8292				0.8292			
R^2 overall	0.8236				0.8236			
Obs. No.	110				110			
Firms. No.	22				22			

The first hypothesis (H1) suggests a positive and significant relationship between BVS and DPS. As shown in Table 4, REM with Robust Standard Errors indicates a positive and significant ($P = 0.000$) relationship between book value per share and dividend per share and that the increase by one unit in BVS will increase DPS by 0.1059362. REM also supports this result. Therefore, H1 is accepted. Despite the lack of prior studies in this relation, the positive and significant relationship between book value per share and dividend per share can be justified based on relevant theories. One of the main components of the book value of equity is the contributed capital, which includes the share capital and the additional paid-in capital (Ball et al., 2020). It has been known that the value of additional paid-in capital is linked directly to the surplus of market value over the par value of the share (Ball et al., 2020). This excess is increased as the market price increased. In this context, valuation theory argues that there is a stronger linkage between the market price of a share and dividend payments (Karathanassis & Philippas, 1988) as investors normally try to purchase the dividend-paying shares, which raise the market price (Harkavy, 1953).

Most important, the idea of paying more dividends due to the higher premium in shares was also supported by catering theory (Baker & Wurgler, 2004). However, the market-to-book ratio has been used in several prior studies to show the effect of additional paid-in capital on dividend policy. For example, the market-to-book ratio was used as a proxy for growth in Al-Najjar (2009) and revealed a positive

and significant relationship with dividend payment. This is also supported by Gallizo and Salvador (2006) in that the total book value of equity supports the market price of the share in the presence of dividends in larger firms according to life-cycle theory. Similarly, the other component of contributed capital is share capital, where firms strive to issue common shares in the presence of frequent dividends to generate cash for their activities (Easterbrook, 1984). According to Bechmann and Raaballe (2007), share capital is an indicator of potential dividends. Further, the stockholder's equity equals the net assets (total assets-total liabilities) of the firm (Gallizo & Salvador, 2006). Therefore, the positive and significant relationship between the book value of equity and dividend policy reflects the interest of shareholders in the equity section of the balance sheet, which may be earned after paying to creditors in case of liquidation (Obeidat, 2009). Finally, the life-cycle theory argues that older firms usually have larger book value and accordingly have the desire to pay dividends (Gallizo & Salvador, 2006). Based on the mean value of BVS (2.437973) and the findings of Al-Twaijry (2007), which indicated that firms with a higher book value (i.e. BVS > 1.5) are usually paid more dividends, it can be concluded that BVS contributes significantly and positively toward higher dividends.

In respect to H2, REM with Robust Standard Errors result shows a positive and significant ($P = 0.000$) relationship between RES and DPS. Thus, H2 is accepted. The result is in line with that of Denis and Osobov (2008) who found that dividend payment is centered among those firms where

their retained earnings constitute the higher portion of their stockholders' equity section. Besides, this result is in line with that of Bhole (1980), who found that dividends increased with higher and constant retained earnings. Based on this, the descriptive statistics show a low standard deviation for RES, which indicates low volatility in RES. This supports the positive and significant relationship between RES and DPS. This result is also in line with the notion of life-cycle theory, which suggests that older firms have sufficient accumulated retained earnings and have the tendency to pay dividends instead of using the retained earnings for additional investment projects as the case in younger firms (DeAngelo et al., 2006; Fama & French, 2001). Similarly, the result is consistent with the argument of agency theory, which proposes that dividends can reduce costs by using free cash flow for dividends instead of leaving it for managers to use in inappropriate projects (Barclay et al., 1995). Further, the result is also in line with signaling theory, which suggests that paying dividends is an indicator of the bright future of the firm (Yarram & Dollery, 2015). Empirically, the result is in line with the findings of DeAngelo et al. (2006) and Bhole (1980). Finally and consistent with the justification of DeAngelo et al. (2006), it can be concluded that the mean value of age (33 years) in this study supports the significant result in that mature firms tend to interest in paying dividends instead of keeping earnings for potential investments.

In respect to H3, the result of REM with Robust Standard Errors indicates a positive but insignificant ($P = 0.331; > 0.05$) relationship between asset turnover ratio and dividends per share. Consequently, H3 is rejected. The justification of this result is based on life-cycle theory as noted by Gallizo and Salvador (2006), where the older firms have usually low asset turnover ratio due to low investment activities, which may mitigate its effect on the dividend payment as investors are interested in the book value, which is usually higher in the mature stage. This argument is supported based on the low asset turnover ratio mean (0.6835818), which is far less than that of Florackis and Ozkan (2009). Besides, one important justification of the insignificant relationship between asset turnover ratio and dividend payment in this study is based on the nature of the current study sample. In particular, about 59% of the firms in this study belong to the service sector where the asset is not as important enough as in the industrial sector. This argument is also supported by Gallizo and Salvador (2006), who found that the asset turnover ratio was less important in services firms. However, the insignificant relationship is in line with that of Nerviana (2016).

Finally, H4 is rejected as the result of REM with Robust Standard Errors indicates a negative but insignificant ($P = 0.520; > 0.05$) relationship between AGE and DPS. This result is consistent with that of Singla and Samanta (2019). One main justification for the insignificant relationship between the age and dividends policy in the current study is that all firms in the study are dividend-paying firms, with an average age of 33 years. This makes the age variable unimportant for such firms. The same justification can be applied to the insignificant relationship between SIZ and DPS. In particular, the firms in this study are homogeneous in respect to size as shown in the descriptive statistic results. Therefore, the size becomes less important in the dividend policy of such homogeneous firms. However, the insignificant relationship between size and dividend policy is in line with the findings of Pattiruhu and Paais (2020).

6. Conclusion and Recommendations

The current study examines empirically the effect of four variables on the dividend policy of Jordanian non-financial listed firms for the period from 2015 to 2019. The four variables include book value per share, retained earnings per share, asset turnover ratio, and age. These variables show the information contents of the balance sheet through stockholders' equity and assets. The study has based on solid rules to select the study sample. Both REM and REM with Robust Standard Errors were used to test the study hypotheses. The results are consistent under the two estimation techniques.

Results of the analysis show a positive and significant relationship between book value per share and dividend per share. Similarly, the results show a positive and significant relationship between retained earnings per share and dividend per share. On the other hand, the results reveal an insignificant relationship between asset turnover ratio and dividend per share. Further, the results show an insignificant relationship between age and dividend per share. Finally, the results show an insignificant relationship between size and dividend per share.

In light of the lack of prior studies that have focused mainly on the effect of the current study explanatory variables on dividend policy, the results of the study are justified based on the underlying theories like life-cycle theory. The study has proved empirically the efficiency of the study model. In particular, it has been noted that shareholders used to put considerable weight on the stockholder's equity section due to its rich informational content. Similarly, the retained earnings positive effect on dividend payment is justified based on the notion that old firms that have enough accumulated earnings reward shareholders by paying dividends. This dividend policy is, therefore, consistent with the notion of life-cycle theory and signaling theory. Further, the insignificant effect of asset turnover on dividend policy shows the insignificance of such indicators in mature firms according to life-cycle theory. Finally, the homogeneity in the study sample does not emphasize the age and size in dividend policy.

The study, consequently, offers three main implications. First, policy-makers should put more emphasis on the current study model to develop and evaluate the different dividend policies. Second, different types of investors should pay attention to the study model before engaging in share purchasing for dividend purposes. Finally, financial analysts should consider the current study model in predicting and evaluating the return of shares.

Based on a solid theoretical framework, the study has linked the four explanatory variables with dividend policy to create an appropriate basis for additional studies on this topic. First, the current study should be repeated using a larger sample over a longer time span. Second, future studies should test the efficiency of the current study model among several sectors and business market environments. Third, the future project may build on the results of the current study to theorize for a new model in dividend policy. Finally, a future study may be conducted by incorporating those firms that used to pay dividends in an inconsistent pattern.

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