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HOW DO DYNAMIC FINANCING DECISIONS EXPLAIN THE BEHAVIOR OF DIVIDEND PAYOUT POLICIES?

AN EMPIRICAL STUDY OF LISTED PAKISTANI MANUFACTURING FIRMS

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Abstract

The study investigates the factors that influence dividend payout policy in public Pakistani manufacturing companies throughout the timeframe 2010-20. Pooled OLS technique was used for regression purposes, as the majority of companies do not pay a dividend at all or do not do so regularly so all these firms were excluded from the final dataset. The study discovers that dividend payout in listed Pakistani manufacturing firms is significantly affected by ratio of short-debt, ratio of long-debt, ratio of total-debt, life cycle ratio and cash ratio. Similarly, short term debt ratio, ratio of long-debt and life cycle ratio, increase the dividend payout while cash ratio decreases the dividend distribution ratio for publically traded Pakistani manufacturing companies. The policymakers/financial advisors and decision-makers in listed Pakistani manufacturing firms should take into consideration factors such as debt financing, life cycle ratio, and cash ratio in making their dividend policies.

JEL classification: C1, C4, C8, G2, G3, L2, L6

Keywords: dividend policy, financing decision, debt financing, equity ratio

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Introduction

The set of guidelines that are used to decide how much of a company's current earnings should be paid to shareholders is the dividend policy (Ahmad & Javid, 2010). Similarly, financing decisions refer to ways of paying for investment and expenses (Al-Najjar, 2011). Accordingly, the firm arranges finance by issuing shares, taking a loan or issuing bonds or debentures, etc. The current study will empirically investigate the role of financing decisions in determining dividend policy and their underlying relationship and impact on each other. The dividend distribution policy is quite a puzzle and its relationship with financing decisions has garnered very little attention internationally (Baker & Powell, 2012). Similarly, Abreu and Gulamhussen (2013) researched 139 listed Italian firms using Tobit, Logit and OLS models to show that financing structure of Italian firms is highly focused and an agency problem arises due to a conflict of interest between a major group of shareholders and a minor group of shareholders. However, Boţoc and Pirtea (2014) revealed that saving propensity is positive significantly with financing conditions of firms. This implies that satisfactory outside financing can enhance internal cash flows in a systematic pattern for the allocation of finance. This study was done on 2190 listed manufacturing firms in the euro area and the timespan of 1994-2003 using GMM and OLS models. Some other studies found a considerable variation in the interrelationship underlying indebtedness choices and payouts, as well as investing in the Taiwanese stock exchange (Baker & Weigand, 2015). They also inferred that the Taiwan capital market is not perfect because there is no mutual independence in financial decisions. Furthermore, Ankudinov and Lebedev (2016) investigated theories of financing decision and dividend policy in Jordan as an emerging market. Additionally, Benjamin et al. (2016) investigated determining factors of dividend payment decision in respect of multinational companies in Australia which revealed that global corporations (MNCs) pay higher dividends than local corporations. In Nigeria, the importance of dividend payment in maximizing shareholder prosperity has been discovered (Firth et al., 2016). They concluded that dividend payments of publically traded firms have an impact on stockholders' wealth maximization.

Similarly, Al-Kayed (2017) concluded that due to financial crises, state-owned enterprises' dividend payments have decreased almost as much as privately-owned enterprises' dividend payments. Additionally, Akhtar (2018) found that managerial ownership has an adverse effect while institutional ownership has a favorable effect on dividend payout among manufacturing firms. Likewise, Dewasiri et al., (2019) found a non-consistent relation between firms that were paying a dividend. They concluded that firms pay the dividend based on liquidity and availability of profits. They further concluded that debt financing or leverage is an important factor for determining dividends. Anwer et al., (2020), studied listed manufacturing firms including 14 industries like the paper sector, coke & refined products of the petroleum sector, information, communication and transportation (ICT) sector, energy & fuel sector, automobile industry, cement industry, mineral production sector, manufacturing sector, chemical sector, foods sector, sugar sector and textile sectors, electrical industry, and other industries. The current study uses panel data for all these firms for the period 2010 to 2020. After analyzing the data, the researcher determined that a huge number of corporations among Pakistan's publically traded firms in the manufacturing industry are either not paying a dividend, or are paying it after between one or two years, or are not paying it whatsoever. So, the researcher has to exclude all those firms or some of the years of the firms not paying dividends. The remaining firms were included in the study, which formed the dataset to be pooled, and for the ongoing study, an OLS method of estimation was used as the ultimate analysis. The studies related to dividends especially in the case of Pakistan conclude with some interesting discoveries. A study with a similar scope of dividend policy concluded that profitable firms tend to give dividends while the firm bearing a loss does not tend to give dividends in a similar manufacturing sector (Jawade, 2021). Accordingly, Kim et al., (2021) found that listed manufacturing firms, for setting their dividend payment, heavily depend on EPS and past DPS. They also found that firms with stable earnings and which tend to be profitable continuously pay higher dividends to their shareholders. However, Muhammad (2021) argued that a stable dividend policy is lacking in Pakistani-listed manufacturing firms. Finally, Abbas et al. (2021) found that following signaling theory, profitable companies in listed Pakistani manufacturing firms pay more dividends to their shareholders.

All the above indicate that dividend policy, especially in the case of listed Pakistani manufacturing firms is either stable or is not stable in different studies. Therefore, the current study tries to resolve this puzzle empirically and econometrically. The financing decision

includes the debt-funding ratio (short-term), debt-funding ratio (long-term), debt-funding ratio (total), and the equity ratio (Çam & Özer, 2021). Although, Abbas et al., (2021) revealed that the optimal debt financing in the textile sector of Pakistan is almost 56 percent while the debt-funding ratio (long-term) contributes on average as 26.5 percent in the same sector. Furthermore, Ali (2020) stated that the banking sector of Pakistan has approximately 84% debt financing in their capital structure. A research analysis done on 100 listed manufacturing firms in the PSX revealed that significantly high debt financing; debt-funding ratio (long-term) as well as debt-funding ratio (short-term), is used in family firms and non-family companies in Pakistan using a comparative model (Muhammad, 2021). It means that debt is the major source of financing in Pakistani-listed manufacturing firms. It further elaborates the debt-funding ratio (short-term) figures like 45 percent on average while the debt-funding ratio (long-term) is about 14% in Pakistani listed manufacturing firms. The decision regarding dividend payment is a cause of disagreement between the shareholders and management of companies worldwide. It has created not only agency problems but also information asymmetry as an issue of discussion. According to dividend policy, the management of the company has a right to retain the entire profit under a 100% retention policy to use it for further investment as well as for purchasing any operating assets or expansion of the business which results in zero payment of dividends (Labhane & Mahakud, 2016). The primary duty of management is to increase shareholder's wealth while retention policy may cause a decline (Mulyani et al., 2016). To solve this issue, especially in Pakistan, the researcher is trying to make some contribution in research regarding whether financing decisions can impact the dividend policy of listed Pakistani manufacturing firms. The goal of this study is to determine the relationship between payout policies as well as financing decisions of manufacturing listed companies of Pakistan controlling other factors of dividends and financing decisions. The study will investigate the relation between dividends and financing and the applicability of the relevant theories and consistency with previous research studies. Research objectives are as follows:

1) to find the relation between dividend policy and financing decisions in Pakistani listed manufacturing firms,
2) to find the consistency of the proposed study with previous research findings,
3) to find a practical implication for the study.

The researcher's goal is to statistically address the subsequent research questions.

1) is there any relation between financing decisions and payout policies in publically traded Pakistani manufacturing companies for the timeframe 2010-2020?
2) is the result of current research consistent with that of previous studies?
3) what are the practical implications of the study for shareholders, prospective investors, management of companies, debt holders and policymakers, etc.?

The importance of the study can be traced to the fact that it will help policymakers in listed Pakistani manufacturing firms to concentrate on a financing mix that will enable them to take an appropriate decision on dividend policy. Because a financial manager's primary responsibility is to maximize shareholder value, and consistent dividend payments increase shareholder earnings, this research will benefit shareholders, potential investors, company management, bondholders, and perhaps other parties. Unfortunately, in Pakistan, a majority of enterprises are not paying a dividend and many are not paying it regularly. Since some of the firms pay a dividend in some years while not paying in the others the prospective shareholders are either reluctant to invest in the listed manufacturing firms of Pakistan or they make an investment based on getting a return from the price change of the shares. Therefore, the management of the companies in the listed manufacturing industry of Pakistan should take into consideration the factors that may affect the dividend policy decision to increase investment by the prospective investors.

Literature review

This section comprises a review of literature from previous studies relating to dividend policy and financing decisions in different countries from the last ten years. The research examined the quantitative impact of various streams of investment decisions affecting dividend payout ratio throughout the manufacturing sector in Pakistan.

The dividend decision is one of the most contentious concerns and in the corporate finance fundamental theory too, which still has its reputation in the field of finance (Pál & Ferrando, 2010). The various theories and findings presented by many researchers still has not resolved this issue and it is required to make fur-

ther discussion openly (Dai & Liu, 2011). According to Hamill and Al-Shattarat (2012) a dividend is the dispersal of present or past income in terms of real assets between the stockholders of a company according to the ratio of their equity. Being the chief investigational area of research in corporate finance, the policy regarding dividends is the foremost element of a company's policy (Bradford et al., 2013). Normally, the stockholders of a company contemplate that dividends offer a dominant signal showing the ability of a company to enhance its earnings (Brunzell et al., 2014). Additionally, Florackis et al., (2015) defined the payout policy of dividends as the distribution of funds between many shareholders. Meanwhile, Mulyani et al., (2016) argued that the equity level which is reserved in a corporation is exaggerated by the level of incomes paid out to stockholders. They further stated that it is expected that the financial managers will make a wise decision in this regard. Such thoughtfulness is critical because the payout of the dividend affects the value of a corporation along with the stockholder's wealth. In the words of Ozuomba et al., (2016), the dividend policy refers to a basic return to a company's stockholders in the percentage of their investment of common stock in that company. Another definition of dividend policy as given by Das (2017) states that policy regarding dividends includes allocation of returns by a company to their stockholders either in cash or through the distribution of repurchases of common stocks, right issue, bonus issue, etc. Accordingly, Kumar and Sujit (2018) stated in their study that the policy regarding dividends includes the distribution of dividends in terms of cash to the shareholders of a company after taking approval from the management or board of directors. They further argued that from the decision-making point of view, the dividend policy is important for the directors. However, from a return point of view, it is important for the shareholders in deciding on their investment portfolio. In the words of Singla and Samanta (2019), there can be some ways to verbalize the dividend policy; the utmost communal description of dividend policy is based on targeted long-run dividend payout ratio. The profit earned in the recent year is the main factor for the recent dividend (Anwer et al., 2020). The other potential description of dividend policy includes per share dividend which is softly connected with the performance of recent earnings through the company's history (Budagaga, 2020). The payout policy of dividends refers to the payment decision of the dividend with its probability of payment or omission (Yang et al., 2020). Additionally, it includes the decision regarding the level of dividend which will be paid to the stockholders of a company out of available earnings (Abbas et al., 2021).

According to Coleman et al., (2016), the financing decision includes the decision regarding the mode of financing in a company in terms of how much should be from equity investment by the stockholders, how much should be from debt given by the creditors of a company, etc. The details of each of these and their definition is given below under their respective headings. The term debt financing includes financing other than equity financing which makes the firm liable to pay in terms of current liabilities and long-term liabilities (Michiels & Molly, 2017). According to the study conducted by Viviani et al., (2018), debt issuance gives the holder of debt the entitlement to take the company into bankruptcy in case of default by the managers of the company for their obligations of debt. They defined debt financing as the ratio of total debt as a proportion of total assets. Another study defined the debt-funding ratio (long-term) as the total debt as a proportion of total debt plus the market value of equity (Drobetz et al., 2019). Some studies also define debt financing in terms of a leverage ratio which defines financing of debt as the ratio between total debt to equity (Ali, 2020). Furthermore, it is defined as the financing of debt in terms of total liabilities as a proportion of total assets for year-end balances (Çam & Özer, 2021). They stated this measure for controlling financial leverage's effect on the dividend. Additionally, it also defined financing of debt in terms of the ratio of advantage and describe the long-term debt divided by total asset as a measure of leverage or financing by debt (Inaba, 2021). Another study defines the financing of debt in terms of financial debt as a proportion of total assets. This definition is given by (Jawade, 2021). The financing of debt is the ratio of leverage which is the percentage resulted from the division of total debt by total assets (Jeon, 2021). Similarly, some of the studies used two different measures of debt financing; the ratio between new current debt and new current sales as a measure of the ratio of current period debt along with the ratio of base period total debt divided by base period total asset to measure the ratio of base period debt (Kim et al., 2021). Similarly, some of the studies used the change in the debt-funding ratio (short-term) to measure the financing of debt and further formulated its measure as the ratio of per annum change in short-term debt which is divided by the total assets at the beginning of each year (Lee & Lee, 2021). In addition,

they also used the change in the debt-funding ratio (long-term) as a measure of financing of debt in the long term which is measured by taking the change of long-term debt each year and dividing it by the change in total assets each year. Furthermore, some research studies used the ratio of total debt divided by equity to measure the financing of debt (Nazir et al., 2021). Another study defined financing of debt in terms of the ratio of leverage between the book value of total liabilities along with the total asset's book value taking the balances from the end of year figures each year (Ysmailov, 2021). Some other researchers used the ratio between total debt to total shareholder equity as a measure of leverage to represent financing through debt in their study (Ali, 2020). Other researchers used the ratio of debt divided by total assets as a measure of leverage for the financing of debt for their study (Nazir et al., 2021).

This review observed only a few papers that looked at equity investment as a factor influencing dividend payout. The preceding are some of the studies conducted. The investor's equity to assets ratio is used to calculate the capitalization of equities (Coulon, 2020; Inaba, 2021; Ysmailov, 2021). Those corporations that have more investment opportunities need more funds for making their investments in the future to pay fewer dividends so that they can maximize return by making a higher amount to be invested (Coulon, 2020). As a measurement of investment value, researchers employed the ratio of equity's market value divided by the book value of equity (Jeon, 2021; Lee & Lee, 2021). The cash ratio is defined as the ratio between cash balance each year which is divided by total assets each year (Coulon, 2020). The cash ratio is defined as the proportion of cash in terms of total assets (Inaba, 2021). Another study defines the cash ratio as a liquidity measure and describes it as the year's end balance of cash which is the proportion of the total asset's book value (Ysmailov, 2021). Another indicator of cash ratio in terms of cash holding was described as the change in cash balance each year which is measured as a percentage of total assets at the start of every year (Lee & Lee, 2021). According to a study, the life cycle can be defined as the proportion of retained earnings scaled by the book value of equity each year (Coulon, 2020). In the study, researchers needed to find a favorable association across the life cycle as well as he dividend payouts. Hassani and Dizaji (2013) argued that more mature firms have a lower number of investment opportunities. Therefore, they accumulate more earnings in the form of retained earning which as a result makes them able to distribute more dividends as compared to new firms, which have more growth opportunities due to which they have less retained earnings to pay a dividend to their shareholders.

One study concluded that an increase in the majority of shareholder's voting rights will decrease dividend payout (Wang et al., 2010). They utilized dividend payment scalable using market cap as more than just a measure with a dividend payout ratio 1 as well as yearly payout scalable by net earnings as more than just a surrogate for dividend payout ratio 2. Another study revealed that irrespective of the firm's condition of financing, cash saving out of cash flow is positive and significant (Harada & Nguyen, 2011). Their results suggested that the cash saving tendency is positive as well as significant irrespective of the financing decision of the firm. This indicates that if a firm has a satisfactory condition of external financing then as the apportionment of capital, the internal cash flow can be utilized. Another study discovered that the relationship between debt funding, dividends, and financial investments has changed significantly at diverse stages of the life cycle ratio (Manos et al., 2012). It was concluded that the financing decision is not perfect because of dependency between debt financing, dividend and investment decisions. A study empirically concluded a link between debt funding as well as dividend payouts, along with assets' tangibility, profitability, MB ratio, business liquidity, company size, as well as industry categorization (Hassani & Dizaji, 2013). In addition, another study found that managerial ownership and dividend ratio are negatively related with a significant difference which was also found at a different level of debt financing (Imran et al., 2013). The characteristics of debt financing and dividends were examined to moderate agency problems within firms relating to family ownership (Liu & Hu, 2014). They discovered a negative but also substantial relationship between the ratio of dividend payout but also ownership concentration, and therefore a negative relationship between debt funding and dividend payment. They inferred that firms with family ownership maintain high debt financing with low dividend policy as a contrast to the firms with non-family ownership. Another empirical study conducted with the aim of finding how shareholder's wealth is exaggerated by dividend policies proved through their study that companies with public ownership can affect the shareholder's wealth (Kaźmierska-Jóźwiak, 2015). Additional research stud-

ied the link involving ownership structure with dividend payout policy (Sindhu et al., 2016). They found a strong negative relationship involving payout policy and management ownership, but a significantly positive relationship between institutional ownership and also payout ratio. Furthermore, it was deduced that perhaps the company's size, as well as the valuation, have a positive link with dividend payout ratio, however financial leverage plus dividend payouts have a negative relationship which is showing a supportive association in favor of cash flow theory (Michiels & Molly, 2017). Another study looked at factors and the development of dividend policy (Ranajee et al., 2018). They concluded that debt finance was found to be a key determinant in determining dividend payout, but firm size had no meaningful relationship with dividend payout ratio. It was discovered that there is a link involving ownership concentration, dividend payout, as well as asymmetric information for publicly traded companies (Wahjudi, 2019). They determined that companies with a greater level of enhanced knowledge opacity are much less likely to pay dividends while in the context of knowledge asymmetries, government enterprises are much more capable of paying a higher level of dividend. Further research studies concluded that domestic firms of Australia are paying regular cash dividends as compared to multinational companies in Australia (Abbas et al., 2021; Anwer et al., 2020; Budagaga, 2020; Muhammad, 2021).

Data & methodology

This section comprises the characteristics of data and its sources, variables both dependent and independent, model as well as the hypothesis, and finally the definitions of variables in tabular form with expected signs. The characteristics of data by the specific requirements of this research are secondary financial data while the formation of variables is a panel dataset. The data is extracted from financial statements of publically traded manufacturing companies registered in the Pakistan stock exchange (previously KSE) for the timeframe 2010-2020. The researcher used different accounting measures to take data from the balance sheets and income statements of the selected companies. The conclusive evidence of this study applies to the overall manufacturing industry in Pakistan for the timeframe of this study. At the start of this research study, the researcher tried to make a dataset balance but after collecting the data, the researcher came to know that a lot of Pakistani companies of manufacturing industries are not paying the dividend at a regular interval. A large number of firms were either not paying a dividend at all or paying only in some years, so after excluding the non-paying dividend firms as well as the non-paying dividend years the dataset panel did not remain balanced. It has become a pooled dataset, so the researcher had to analyze this study based on the available information and data. The present study empirically investigates the effect of dynamic sources of financing on a dividend payout policy for the companies registered in the Pakistan stock exchange in the manufacturing industry for the timeframe 2010-20. Dividend payout policies are the explained variables while the dynamic financing decisions are explanatory variables that are measured by different formulas as given in the previous researches as follows.

The explained/dependent variable of this study is dividend payout policies. A *dividend payout policy* is defined as a specific quantity of the total earnings, which is circulated to the existing stockholders as their return for holding the shares for a particular period. Previous researchers measure the dividend payout policy differently. The first measure for dividend policy is the *Dividend to earnings ratio* which is defined as dividend to after-tax earnings (Anwer et al., 2020; Kim et al., 2021; Yang et al., 2020). The second measure for dividend policy is the *dividend to market capitalization ratio* which is defined as annual dividend to the market capitalization of shares (Jawade, 2021; Muhammad, 2021). The third measure for dividend policy is dividend payout ratio which is defined as per share dividend as a proportion of per-share earnings (Muhammad, 2021; Yang et al., 2020). The fourth measure for dividend policy is dividend payment decision which is measured by binary coding; 1 for dividend payment, and 0 for no dividend payment (Abbas et al., 2021; Yang et al., 2020). The last measure as prescribed by the previous research study for dividend policy is dividend percentage which is indicated as the yearly dividend to yearly total assets (Abbas et al., 2021; Budagaga, 2020). The current study uses all the above variables as a dependent to investigate epically which measure is best for explaining dividend policy in Pakistani listed manufacturing firms.

The financing decision is driven by the short-term ratio of debt funding, the long-term ratio of debt funding, and the total ratio of debt funding. Additionally, equity ratio, investment opportunities, life cycle ratio,

and cash ratio were also used as the other proxies of dynamic financing decisions. The first factor to indicate the explanatory variable for a financing decision is "Short term ratio of debt funding" which is well-defined with the measure of short term debt-funding to total assets on yearly basis (Ali, 2020; Nazir et al., 2021). The second factor to indicate the explanatory variable of a financing decision is "Long term ratio of debt funding", which is well-defined with the measure of long term debt funding as a proportion of total assets at the end of the year (Ali, 2020; Nazir et al., 2021). The third factor to indicate the explanatory variable of a financing decision is "Total-debt funding ratio", which is well-defined with the measure of total debt funding as a proportion of the total assets at the end of a financial year (Ali, 2020; Nazir et al., 2021). Additionally, the fourth factor to indicate the explanatory variable of a financing decision is "Investment Opportunity", which is well-defined with the measure of the equity's market value to by equity's book value (Jeon, 2021; Lee & Lee, 2021). The fifth factor to measure the explanatory variable of financing decision as prescribed by previous research studies is the "Equity ratio", which is well-defined as the total equity to total assets (Coulon, 2020; Inaba, 2021; Ysmailov, 2021). The last factor to measure the explanatory variable of financing decisions as prescribed by previous research studies is "Cash Ratio", which is well-defined as the "sum of cash and cash equivalents" as a proportion of total assets at the end of the year (Coulon, 2020; Inaba, 2021; Ysmailov, 2021). Detailed definitions of the variables of the study are as presented in Table 1.

Table 1: Variables and their operationalization

	Dividend Payout Policies	Definition/Measurements	Reference
1	Dividend payout policy	Dividend/Earnings Where Dividend = Annual Dividend Earning = Earnings after tax	(Anwer et al., 2020; Kim et al., 2021; Yang et al., 2020)
2	Dividend to Market Capitalization Ratio	Dividend/Market Capitalization Where: Dividend = Annual Dividend Market Cap = Market Price × outstanding Shares	(Jawade, 2021; Muhammad, 2021)
3	DPO ratio	DPS/EPS Where DPS = Dividend Per share EPS = Earnings Per share	(Muhammad, 2021; Yang et al., 2020)
4	D-Payout	1 for dividend payment, and 0 for no dividend payment	(Abbas et al., 2021; Yang et al., 2020)
5	Div %	Dividend/Total Assets	(Abbas et al., 2021; Budagaga, 2020)
	Financing Decisions	**Definition/Measurements**	**References**
1	Short Term Ratio of Debt Funding	Debt Funding (Short-term) as a proportion of Total Assets at the end of year	(Ali, 2020; Nazir et al., 2021)
2	Long Term Ratio of Debt Funding	Debt Funding (Long-term) as a proportion of Total Assets at the end of year	(Ali, 2020; Nazir et al., 2021)
3	Total-debt funding ratio	Debt Funding (Total) as a proportion of Total Assets at the end of year	(Ali, 2020; Nazir et al., 2021)

4	The ratio of Investment (Opportunity)	Equity's Market Value as the portion of Equity's book value	(Jeon, 2021; Lee & Lee, 2021)
5	Equity ratio	Equity / Total Assets	(Coulon, 2020; Inaba, 2021; Ysmailov, 2021)
6	Life cycle ratio	Retained Earnings / Total Equity	(Hassani & Dizaji, 2013)
7	Cash ratio	Cash & Equivalents / Total Assets	(Coulon, 2020; Inaba, 2021; Ysmailov, 2021)

Source: Own elaboration.

The panel data model & hypotheses

Based on research studies indicated in the above table, the researcher established the following panel data model first for investigating the effect of financing decisions on dividend policy:

$$(\text{Dividend Policy})_{it} = \beta_0 + \beta_1 (\text{SDF ratio})_{it} + \beta_2 (\text{LDF ratio})_{it} + \beta_3 (\text{TDF ratio})_{it} + \beta_4 (\text{Investment Opportunity})_{it} + \beta_5 (\text{Equity ratio})_{it} + \beta_6 (\text{Life cycle ratio})_{it} + \beta_7 (\text{Cash ratio})_{it} + U_{it}$$

Based on the findings of the previous research studies as conducted by Ali (2020), and Nazir et al., (2021), the researcher established the following hypothesis for testing and analyzing the link between financing of debt and dividend payout policy for the present study:

H_1: Debt financing should have a strong link with dividend payout policy.

Based on the findings of the previous research studies conducted by Coulon (2020), Inaba (2021), and Ysmailov (2021), the researchers established the following hypothesis for testing and analyzing the link between equity ratio and dividend payout policy for the present study;

H_2: Equity ratio should have a significant link with dividend payout policy.

The researcher established the theoretical link between the ratio of investment (opportunities) and dividend payout policy for the present research study based on the findings of some of the studies (Jeon, 2021; Lee & Lee, 2021). The following hypothesis is established.

H_3: The Investment (opportunity) ratio should have a strong impact on dividend payout policy.

The researcher based the hypothesis of the present study of dividend policy and financing decision as per the findings of Coulon (2020), Inaba (2021), and Ysmailov (2021), to analyze and predict the relationship between cash ratio and dividend payout policy as follows:

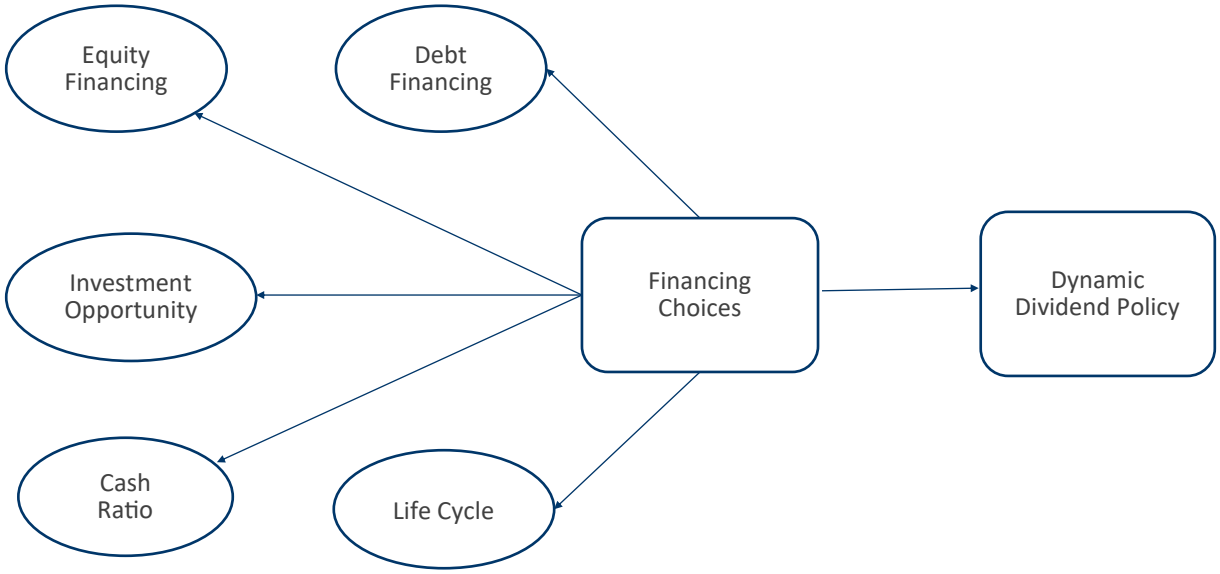
H_4: The ratio of Cash should have a significant impact on the dividend payout policy.

Finally, the researcher, based on previous research findings of Hassani and Dizaji (2013), established the following relationship between life cycle ratio and dividend policy as follows:

H_5: There should be a strong link between the life cycle ratio and dividend payout policy.

Following is the research framework based on the historical evidence and hypotheses of this study. The research framework was established in Figure 1 as per the recommendations and suggestions presented in previous studies (Drobetz et al., 2019; Jeon, 2021; Lee & Lee, 2021; Muhammad, 2021; Yang et al., 2020).

Figure 1: Research Framework



Source: Own elaboration.

Discussion of empirical results

The current section comprises the data analysis part of the study, which includes descriptive statistics, correlation analysis, and regression analysis, the detail of which is provided under their specific headings as follows. The researcher, at the start of this study, tried to make the dataset in a balanced panel format. Nevertheless, after completing the dataset, the researcher came to know that many firms in the listed manufacturing industry of Pakistan do not pay their dividends on regular basis to their existing shareholders. However, some of these firms either do not pay a dividend at all or pay the dividend in some of the years while avoiding it in other years. Therefore, the researcher had to exclude all those companies either not paying a dividend at all or not paying in some years. Finally, the dataset became a pooled dataset, so the researcher has to apply the analysis technique accordingly.

Descriptive Statistics

The summarized result of the data in the form of central tendency; mean, and measure of dispersion; S.D is given in Table 2.

Table 2: Descriptive Statistics

Variable	N	Mean	S.D	Minimum	Maximum
DPO	834	1.05	1.07	0.04	10.55
SDF	834	0.51	0.26	0.01	2.55
LDF	834	0.22	0.21	0.00	1.73
TDF	834	0.74	0.32	0.01	3.01
EQF	834	-0.38	7.01	-180.30	67.28
INV	834	1.39	4.14	-42.93	73.95
LC	834	0.85	0.19	0.01	3.75
CASH	834	3.30	24.05	0.00	396.50

Where DPO = Dividend payout, SDTA = Ratio of short-debt, LDTA = Ratio of long-debt, TDTA = Ratio of total-debt, EQF = Equity ratio, INV = Investment opportunity, LC = Life cycle ratio, Cash = Cash ratio.

Source: Own elaboration.

Table 2 indicates the summarized results of the dataset used for the current study. It indicates that the Dividend payout contributes on average in the current study by 1.0455 while this value can deviate from its mean by 1.0704 with a minimum dividend payout of .04 while the maximum value for it is 10.55. The debt-funding ratio (short-term) on average contributes to the current study as 0.5139 while this value can deviate from the mean by 0.2567. In addition, the minimum value for the debt-funding ratio (short-term) is .008 while the maximum value is 2.546 as the total asset's ratio. The debt-funding ratio (long-term), on the other hand, shows on average contribution in the current study as 0.2236 which can deviate from its mean value by 0.2091 having the minimum value of 0 and maximum value of 1.731 as the total assets' ratio. The debt-funding ratio (total), its contribution in the current study as 0.7375 on average which can deviate from its mean by 0.3182 with the minimum value of ratio of total-debt as 0.012 and maximum value as 3.010 as the ratio of total assets. The equity ratio shows an average value of -0.379 in the current study which can deviate by 7.0081 from its mean with the minimum value of -180.3 and maximum value of 67.28 as a ratio of total assets.

Pearson correlation matrix

Table 3 shows the degree of correlation between each of the variables in this research as follows:

Table 3: Pearson Correlation Matrix

	DPO	SDTA	LTDA	TDTA	EQF	INV	LC	Cash
DPO	1.							
SDTA	-0.20***	1.						
LDTA	-0.12***	-0.08*	1.					
TDTA	-0.25***	0.75***	0.59**	1.				
EQF	0.036	0.023	-0.12***	-0.05	1.			
INV	0.03*	0.003	-0.03	-0.017	0.017	1.		
LC	-0.24***	0.25***	0.08*	0.26***	-0.03	0.005	1.	
CASH	0.15***	-0.08*	0.066	-0.016	-0.003	-0.011	-0.015	1.

*** significant at 1% level ** significant at 5% level * Significant at 10% level
Where DPO = Dividend payout, SDTA = Ratio of short-debt, LDTA = Ratio of long-debt, TDTA = Ratio of total-debt, EQF = Equity ratio, INV = Investment opportunity, LC = Life cycle ratio, Cash = Cash ratio.
Source: Own elaboration.

Table 3 indicates there is an extremely significantly negative association between the debt-funding ratio (short-term), the debt-funding ratio (long-term), the debt-funding ratio (total), and dividend payout policy with coefficient's values as –0.20 for the debt-funding ratio (short-term), -0.12 for the debt-funding ratio (long -term), and -0.25 for the debt-funding ratio (total). This signifies that if debt-funding-based financing grows, the dividend payout policy might shrink. The equity ratio is linked with dividend payout policy in a positively significant way with the coefficient's value as 0.036 which means that the equity ratio may enhance dividend payout. Dividend payment has a favorable substantial relationship with investment opportunities with the value of its coefficient as 0.03 showing that investment enhances the dividend payout. The life cycle ratio has an extremely significant and negative association with dividend payout with the value of coefficient as -0.24 which indicates that the life cycle ratio variable will decrease the dividend payout. The cash ratio shows an extremely significant and positive association with dividend payout with the value of coefficient as 0.15 which indicates that the availability of more cash will enhance the dividend payout.

Hypothesis testing using regression

Table 4 reports the model summary for regression while Table 4 shows the coefficient estimates of the present study.

Table 4: Model Summary & ANOVA output

Source	Sum of Square	Degree of Freedom	Mean Square	F-test	P-value
Model	184.591	7	26.37010	28.29	0.0000
Residual	769.890	826	0.93207		
Total	954.481	833	1.14583		

N=834, R^2 = 0.1934, *Adj-*R^2 = 0.1866, Root MSE = 0.96544

Source: Own elaboration.

Table 4 indicates the model summary with ANOVA testing in the current study. It shows that the number of observations was 834 in the current study while the value of R-square is 19.34%, indicating variation in dividend payout explained by variation in the ratio of long, short, and total-debt, the ratio of equity, investment opportunities, life cycle ratio and cash ratio in Pakistani listed manufacturing firms. The remaining 80.64% variation in the current study is due to other factors not included in the model. The statistical value of the model showing 0.0000 confirmed that the estimated model is statistically fit in the present study.

The Table 5 indicates the results of coefficients estimates for the current study.

Table 5: Coefficients Estimates

DPO	Co-efficient	S.E	T-value	P-value
SDF	108.6000	12.2990	8.830	0.000
LDF	108.6300	12.3010	8.830	0.000
TDF	-109.2000	12.2930	-8.880	0.000
EQF	0.0031	0.0048	0.660	0.508
INV	0.0075	0.0080	0.940	0.349
LC	-0.8830	0.1871	-4.720	0.000
CASH	0.0064	0.0013	4.630	0.000
Constant	2.1901	0.1638	13.370	0.000

Where DPO = Dividend payout, SDTA = Ratio of short-debt, LDTA = Ratio of long-debt, TDTA = Ratio of total-debt, EQF = Equity ratio, INV = Investment opportunity, LC = Life cycle ratio, Cash = Cash ratio.

Source: Own elaboration.

Table 5 reported an extremely strong and positive link between debt-funding ratio (short-term) and dividend payout policy in the Pakistani-listed manufacturing firms. The significant results of this relation between debt-funding ratio (short-term) and dividend payout are also consistent with the similar discoveries of (Budagaga, 2020; Jeon, 2021; Lee & Lee, 2021; Muhammad, 2021). An extremely strong and optimistic link was confirmed between the debt-funding ratio (long-term) and dividend payout ratio in the companies of Pakistani-listed manufacturing firms. The strong link between the debt-funding ratio (long-term) and the dividend payout ratio is comparable with the similar conclusive evidence of (Çam & Özer, 2021; Coulon, 2020; Yang et al., 2020). There is a strong powerful and inverse link between the debt-funding ratio (total) and dividend payout ratio in the listed manufacturing companies in Pakistan. The connection between debt-funding ratio (total) and dividend payout policy in listed manufacturing Pakistani firms for the timeframe 2010-20 is compatible with the similar findings of (Jeon, 2021; Lee & Lee, 2021; Muhammad, 2021; Wahjudi,

2019). There is an increasing but statistically insignificant impact of the equity ratio on dividend payout policy observed for the registered manufacturing Pakistani firms for the timeframe 2010-20. The evidence of this impact is compatible with similar conclusions of (Abbas et al., 2021; Akhtar, 2018; Budagaga, 2020; Singla & Samanta, 2019). An increasing but insignificant effect of investment (opportunities) ratio was observed for dividend payout policy in the present study of the listed manufacturing firms for the timeframe 2010-20. This insignificant impact of investment (opportunities) ratio for dividend payout policy is compatible with the conclusive evidence of (Jawade, 2021; Jeon, 2021; Lee & Lee, 2021). It is highly significant and the inverse effect of the life cycle ratio was observed for the dividend payout policy for the manufacturing industry of Pakistan. This powerful link between the life cycle ratio and dividend payout policy is compatible with similar evidence (Budagaga, 2020; Firth et al., 2016; Hassani & Dizaji, 2013; Wahjudi, 2019). Lastly, in registered manufacturing Pakistani enterprises, there is indeed a highly significant as well as positive relationship involving the cash ratio with dividend payment for the timeframe 2010-20. Related findings support the existence of a strong relationship between cash ratio as well as dividend payment (Coulon, 2020; Kim et al., 2021; Lee & Lee, 2021; Ysmailov, 2021).

Concluding and recomendations

The study concludes that dividend payout policy for registered manufacturing Pakistani companies is strongly explained by the debt-funding ratio (short-term), debt-funding ratio (long-term), debt-funding ratio (total), the ratio of the life cycle, and the ratio of cash. The debt-funding ratio (short-term), the debt-funding ratio (long-term) and the life cycle ratio increase the dividend payout while the ratio of cash decreases the dividend payout policy for listed manufacturing firms in Pakistan. The evidence suggested that the policymakers in the listed manufacturing industry of Pakistan; the internal management in this industry, decision-makers, and financial advisors, should take carefully into consideration the factors such as debt financing, life cycle ratio, and cash ratio for deciding dividend payout policy for the listed manufacturing industry in Pakistan. The decision may affect the prospective investor in Pakistan making an investment decision based on the payout policy. The findings of the current study are limited to listed manufacturing firms and are applicable in listed manufacturing Pakistani firms only. The discoveries of the current study cannot be generalized in the financial sector of Pakistan, as their financing choices are entirely different from that of listed manufacturing firms. The findings of the study are also not applicable in developed countries' manufacturing sector as their financial markets are more efficient as compared to Pakistan where the financial markets are always unpredictable due to their semi-weak form. The discoveries of the study suggest that future research should include some other factors e.g., the macro factors such as GDP, inflation, etc., for analyzing their effect on dividend policy in listed Pakistani manufacturing firms as well as in the financial industry of Pakistan.

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