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The Impact of Free Cash Flow on Capital Expenditure in Pakistan's Manufacturing Sector: An Empirical Analysis

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Abstract

This study aims to elucidate the connection between capital expenditure (CapEx) and free cash flow *(FCF) among manufacturing firms listed on the Pakistan Stock Exchange and to examine FCF's influence on CapEx. The study focuses on manufacturing firms in Pakistan listed with the SECP as representative businesses. Descriptive statistics were used to analyze the data collected throughout the research period. The outcomes demonstrate that FCFs have a statistically significant relationship with the capital expenditure of manufacturing firms. Free Cash Flow (FCF): p-value (0.02 < 0.05). The relationship between FCF and CapEx is statistically significant. Additionally, the analysis revealed that leverage has a notable influence on the capital spending of manufacturing businesses, showing that leverage affects capital expenditure. The research also found that the dividend distribution ratio does not affect the Capital Spending of Manufacturing Firms. For long-term stability in the manufacturing sector, authorities may use these results to inform rules that support sustainable borrowing, encourage sound financial practices, and create balanced dividend and investment plans. It could be advantageous for the upcoming researchers to carry out longitudinal studies to monitor the effects of variations in free cash flows, financial leverage, company size, and liquidity on capital expenditure decisions.*

Keywords: Free Cash Flow, Capital Expenditure, Pakistan, Manufacturing Sector

Introduction

These days, businesses are competing for a market edge through expansion, and capital expenditure, or CapEx is the most effective way for managers to make decisions (Kamau & Kagiri, 2015). Likewise, the investors who are willing to invest

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in effective and efficient opportunities are more attracted to companies with extortionate FCF. Keeping the finest level of liquidity is important for the operations of firms. Hence, a large portion of assets held in cash enables managers to reinvest in physical assets for future CapEx or to make payments to shareholders (Hann, Ogneva, & Ozbas, 2013).

Free cash flow is fundamentally a measuring instrument judges that how much cash a firm generates after covering essential CapEx such as building, equipment, and machinery, where the remaining cash can be used for dividend payouts, reinvestment, and for decreasing the debts of the firm. Similarly, the investors focus on the fact that the firms are highly affected by the free cash flow and the length of time they need to make further payments and pay their liabilities (Ojode, 2014).

Prior studies (e.g., Kinyanjui, 2014) on the connection between FCF and CapEx, suggest a probably significant positive alliance between the two. In contrast, Muchiri (2014) gives the impression that Free cash flow has a detrimental effect on businesses' capital expenditures. Firth, Malatesta, Xin, and Xu (2012) found a negative relationship between the FCF and capital expenditure at a minimal level of cash, but a positive association between them at higher levels of cash.

Firms often prioritize investment decisions over increasing stockholders' wealth because investments are critical to any firm's strategic decisions. Investments drive innovation in infrastructure, marketing, and product development (Gutiérrez & Philippon, 2016). FCF is a key motivator for managers and boards of directors to invest in projects with positive NPV and short payback periods. The ongoing debate on whether FCF impacts investment decisions indicates that cash flow only marginally affects investments.

This study aims to contribute to the existing literature by addressing this knowledge gap. It will consider additional factors like firm size, company liquidity, and financial leverage to assess their impact on capital spending among listed manufacturing firms. The primary objective is to determine how FCF affects CapEx in industrial companies.

The findings of this study will be valuable to researchers and academics by contributing to the literature and providing a clearer understanding of FCF's influence on capital investment decisions. These results will inspire future research in related fields. Additionally, the study will benefit decision-makers responsible for managing investments and strategic decisions. It will provide relevant data and

recommendations to help them maximize shareholder wealth through informed decisions. The research expands the knowledge base, aiding businesses in enhancing efficiency and ensuring sustainability. The results will also help foreign and local investors understand how FCF affects investment decisions and stock expansion, thereby maximizing profitability and value.

Aims and Objectives

This study aims to determine the relationship between FCF and CapEx, specifically, with the objectives to:

1. Determine whether fluctuations in FCF affect CapEx or not.
2. Identify the nature of the relationship between FCF and CapEx.

Research Limitations

The data utilized for this study may have several limitations that should be noted to improve validity and openness. First, the study only looks at manufacturing companies that are listed on the Pakistan Stock Exchange. This gives it a relevant sample, but it may limit how broadly the results can be applied to other manufacturing companies, particularly those in other markets or countries. Second, the results of the study may be impacted by intrinsic biases in the data collection method, such as reporting or selection bias, which should be taken into account when interpreting the findings. The quality of the sources determines how reliable and accurate the data utilized in the study is, and any flaws or inconsistencies in the data may affect the study's findings. Third, the study's conclusions are predicated on data gathered over a particular period, and market dynamics and economic conditions may alter over time, which could have an impact on the findings' applicability. Lastly, the study might not have taken into consideration all of the outside variables that could affect capital expenditure choices, like political unpredictability, alterations in regulations, or worldwide economic patterns. By recognizing these constraints, we hope to offer a clear and reliable analysis while pointing out areas that require more study to resolve these possible problems.

Literature Review

Webster (2016) defines FCF as the portion of a company's operating cash flow that exceeds its investment-related cash flow in projects with positive NPV. Bhandari and Adams (2017) explain FCF as the margin of operations before depreciation but after

tax and dividend payments. Oded (2020) describes FCF as the asset available to management for reinvestment or allocation to shareholders.

Maksy and Chen (2013) argue that Free Cash Flow (FCF) includes not just cash that's available after covering immediate expenses, but also cash that directors can decide how to use, as long as their decisions don't harm the company's health. Firms with substantial FCF provide operational flexibility, while low cash flow puts firms on the defensive (Christy, 2009).

Capital spending, meanwhile, involves expenses incurred when upgrading or purchasing capital assets like equipment or machinery (Appuhami, 2008). This type of spending is often listed under investment activities in cash flow statements. Managers often increase CapEx to enhance firm value and signal growth potential to investors (Gupta & Mahakud, 2020).

Capital expenditures improve production processes and product quality, boosting customer satisfaction and sales (Cordis & Kirby, 2017; Liao, Lin, & Lin, 2016). Prior research by Qandhari, Khan, and Rizvi (2016) found a positive relationship between CapEx and FCF. However, a decrease in FCF is not necessarily a negative sign—it may reflect higher capital expenditures for future growth and Later on increase in FCF.

According to the investigation carried out on the connection between capital investment and free cash flow Qandhari, Khan, and Rizvi (2016) present a positive connection between capital investment and free cash flow. A negative or falling free cash flow is not surely a sign of inconvenience, rather it may be the increase in capital expenditure due to an upgrade in the production process. For future growth and higher free cash flow, it is essential to find out the reason for the fall and rise of FCF (Brealey, Myers, & Allen, 2005). According to Kinyanjui (2014), there is a strong and beneficial relationship between FCFs and capital spending. Muchiri (2014) also gives the impression that the impact of free cash flow is dangerous to the capital expenditure of firms.

The theoretical framework defines the theories that describe the connection between FCFs and capital expenditure, the theoretical framework is covered by the following theories: Free cash flow theory, pecking order theory, bird in hand theory, residual theory of dividend policy, and the determinants of capital expenditure.

The free cash flow theory was defined by Jensen (1986) according to which the conflicts are made between the managers and the shareholders when there is high free

cash flow. The conflict occurs due to the dividend payout methods and rules. The conflict occurs because the payment of FCF to the shareholders brings down the funds in the hands of managers therefore the managers suffer from tracking up to the capital market for the purchase of new capital stock (Rozeff, 1982).

Free Cash Flow (FCF) theory argues that when the objectives of management split from those of shareholders, conflicts may arise due to an ineffective governance or control structure (Griffin, Lont, & Sun, 2010). In this scenario, managers may pursue personal or departmental goals rather than align with the interests of shareholders, potentially leading to inefficient decisions. The theory further asserts that when a firm possesses elevated levels of free cash flow—excess cash that remains after funding all profitable investments—managers may become less disciplined in their decision-making. They may decide to assign funds to investments that benefit themselves rather than those that maximize shareholder wealth (Drobetz, Grüninger, & Hirschvogl, 2010).

The Free Cash Flow theory plays an important role in this study, in understanding the behavior of managers and shareholders regarding the allocation of FCFs, as investments in capital expenditure and as dividend payouts to shareholders. This theory emphasizes why managers often prefer CapEx over distributing dividends. Managers may prefer to reinvest in the firm's operations through CapEx to facilitate growth and have higher control over firms' resources, rather than reverting cash to shareholders through dividend payments.

The Free Cash Flow theory is also closely linked with the broader financing structure of firms (Myers & Majluf, 1984). Through the pecking order theory. This theory explains that the first and most preferable source of financing for firms is internal financing, which includes retained earnings and free cash flow, as it avoids the costs and risks associated with outside funding. If internal funds are insufficient, managers then turn to debt financing, which is considered the second option. Debt allows the firm to maintain control while meeting its capital needs. The least preferable option is raising capital through equity allocation, as this dilutes existing ownership and potentially reduces managerial control over decision-making.

Managers tend to avoid equity financing because issuing new shares in the capital market can reduce their influence over the firm's financing and investment decisions. Selling shares to external investors exposes managers to external examination, which they typically prefer to avoid. Accordingly, they prefer internal financing, followed by short-term debt if necessary (Holmes & Kent, 1991). Issuing equity is seen as a

last option, when no other options are available or when the firm faces significant financial hardships (Huang & Ritter, 2009).

The pecking order theory is fundamental to this study as it clearly shows the priority of managers in using Free Cash Flows for capital expenditures as compared to the other forms of financing. This theory emphasizes the preference of managers towards internal funding sources, such as retained earnings and FCFs, rather than external sources like debt or equity. Preference for internal funds allows managers to maintain control over corporate financial decisions and prevent the risks and costs associated with raising capital from external investors.

Another essential theory in this investigation is the Bird-in-Hand theory, formulated by Gordon (1963). This theory is centered on dividend payment strategies and is based on the Saying "A bird in the hand is worth two in the bush." It suggests that investors prefer the certainty of receiving dividends in the present over the uncertainty of capital gains in the future. Shareholders value tangible, immediate returns—such as dividends—over the potential, but uncertain, appreciation in stock value. According to this theory, because future capital gains carry risk, investors are more inclined toward companies that offer consistent dividend payouts. High dividend payments not only reduce the perceived risk for shareholders but also enhance a firm's stock market value, as a strong dividend track record tends to attract more investors, thereby increasing the company's share price (Amidu, 2007). This theory highlights the tension between managerial and shareholder priorities, while managers may prefer to reinvest profits into the firm for long-term growth, shareholders often seek immediate returns through dividends. Thus, the Bird-in-Hand theory is crucial in explaining why dividend policies play a significant role in shaping a company's market performance and investor appeal.

The "Bird-in-Hand" theory emphasizes increasing shareholder wealth through substantial dividend payouts, which, in turn, boost stock prices in the market. According to this theory, a lack of dividend payments promotes the risk for shareholders, as they are uncertain about future returns (Lashgari & Ahmadi, 2014). This theory plays a significant role in examining the relationship between Free Cash Flows (FCFs) and capital expenditures CapEx because dividend payouts have a direct influence on the available capital for investment. If a firm prioritizes dividends, it may have less cash to allocate toward CapEx, potentially limiting its ability to fund new projects or growth opportunities.

The concept of residual dividend policy, which laid the groundwork for modern dividend theories, was first introduced by Preinreich (1932), Although Preinreich did not develop a full-fledged theory of dividend payouts, he contributed a key idea: An efficient residual dividend policy should distribute all available FCFs to shareholders after the firm has invested in profitable projects. In his view, managers should prioritize reinvestment into business opportunities, with any remaining cash (which is not re-investable) being returned to shareholders as dividends. This concept was an early attempt to align the interests of shareholders with managerial decisions regarding the use of FCFs.

The formal framework for the residual dividend policy was later refined by Miller and Modigliani (1961) during their research on the irrelevance of dividend policy in perfect capital markets. According to their argument, a firm should pay dividends only after it has funded all profitable investment opportunities—this is known as the residual dividend policy. In this framework, a company first meets its CapEx requirements by investing in projects that are expected to yield a positive return. After these investments, any remaining cash be distributed to shareholders through dividends. In essence, dividends are considered as a residual outcome, subordinate to capital financing decisions.

This residual dividend policy is crucial in studying the relationship between FCF and CapEx, as it emphasizes managers making a trade-off between paying out dividends and reinvesting in the business. If managers prefer to distribute FCFs as dividends, it reduces the funds available for CapEx, possibly harming the growth of firms. Whereas, preferring CapEx over dividends can create shareholder dissatisfaction. Thus, the residual theory of dividend policy is necessary for knowing how managers decide between returning cash to shareholders and investing in profitable ventures, both of which directly affect the relation between FCF and CapEx.

Factors Affecting Capital Spending

Capital expenditures are crucial for sustaining a firm's operations, enlarging its asset base, and fostering long-term growth. However, various factors influence a firm's capital spending decisions, and understanding these factors is vital for predicting future investment structures. The following are the key components that impact capital expenditures:

Free Cash Flow

Free Cash Flow (FCF) plays an essential role in determining a firm's capacity to invest in capital expenditures. According to Brigham and Houston (2021), FCF is calculated as Earnings Before Interest and Taxes (EBIT) multiplied by one minus the tax rate, plus depreciation, and adjusted for working capital and capital investment changes. In this context, FCF is taken as an independent variable that directly affects CapEx decisions of a firm. Higher levels of FCF provide managers with more flexibility in assigning funds to capital investments without requiring outside financing, making it an important factor in future capital spending.

Financial Leverage

Financial leverage is the ratio of debt to equity in a firm's capital structure. It shows the extent to which a company relies on borrowed finances for investments (Hillier, Ross, Westerfield, Jaffe, & Jordan, 2010). In the context of capital expenditure, leverage shows the degree to which a firm finances its investments through liabilities (Raheel & Shah, 2015). Financial leverage refers to the use of borrowed funds to reinvest surplus FCF for possible future earnings. High invested in paying debts and funding value-added projects (Myers, 1977). Therefore, companies with higher leverage might prioritize CapEx over dividends to increase future returns.

Company Liquidity

Liquidity refers to the ability of firms to meet their short-term debts through readily transformable assets (Ehrhardt & Brigham, 2016). Liquidity is critical for firms in determining how they manage dividend distribution and CapEx decisions (Ahmed, 2015). Metrics such as the Cash Conversion Cycle (CCC) and the Current Ratio (CR) are commonly used to assess liquidity (Wardani, Isharijadi, & Astuti, 2018). Firms with high liquidity are more flexible in their dividend payout choices and investment schemes, as they can allocate surplus cash toward CapEx while keeping a stable financial position (Corey, Campbell, & Keith, 2013).

Company Size

The size of a company is an important factor that affects its capital spending decisions. Larger firms tend to have more resources, a larger asset base, and higher market influence, which can affect their financing strategies. They have more access to capital markets and are more likely to engage in significant capital expenditures, by analyzing risks associated with long-term investments. The size of a company is measured by

various ways, including total assets, number of employees, revenue, and market share (Romasari, 2013).

Ratio of Dividend Payout

The dividend payout ratio is the proportion of a firm's profits distributed to shareholders as dividends, Hellström and Inagambaev (2012) explain a positive correlation between FCF and the dividend payout ratio as companies are more likely to distribute a higher proportion of profits to shareholders. Conversely, firms with limited FCF may lessen dividend payouts to preserve cash for capital investments. Therefore, the dividend payout ratio serves as a key indicator of how a company balances its capital allocation between paying to shareholders and reinvesting in the business.

Conceptual Framework

Prior research has demonstrated the strong correlation between manufacturing businesses' Capital Expenditures (CapEx) and Free Cash Flow (FCF). There are still unanswered questions regarding the precise effects of dividend policy and financial leverage on these connections. Furthermore, further research is required to determine how firm size and liquidity affect CapEx choices. In light of these limitations, the purpose of this study is to present a thorough examination of the variables affecting capital expenditure choices made by manufacturing companies that are listed on the Pakistan Stock Exchange.

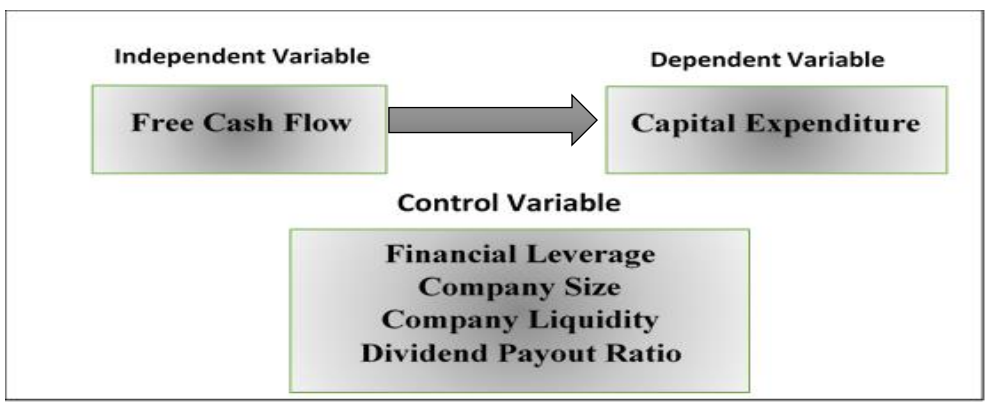

Figure 1. Conceptual framework

Research Methodology

This study analyzes the link between FCF and CapEx using a descriptive statistical technique in order to fill in the gaps in the literature. The study looks at how financial leverage, dividend policy, business size, and liquidity affect capital expenditure choices for manufacturing companies that are listed with the SECP.

Research Design

A descriptive research design was employed in this study. Descriptive research is suitable for the objectives of this study, as it explains the relationship between FCF and CapEx decisions without manipulating the variables. This method is ideal for assessing the effect FCF has on CapEx in the corporate sector of Pakistan.

Population and Sampling

The target population for this study consists of listed companies with the Securities and Exchange Commission of Pakistan as of 2023. There are a total of 196,805 registered companies in Pakistan as per SECP, which is the population size for this research. This research uses listed manufacturing companies on the Pakistan Stock Exchange as representative companies. It focuses on analyzing FCF and annual capital expenditures by examining the financial data of these manufacturing companies through their financial statements.

Data Collection

The data for this study was obtained from the audited financial statements of firms registered with the Securities and Exchange Commission of Pakistan. The primary sources of data are the cash flow statement, the statement of financial position, the statement of profit, and other comprehensive income, as well as the accompanying notes to the financial statements.

Research Analysis Tools

For this study, a multiple linear regression model was employed, as it is suitable for examining the relationship between FCF and CapEx, while also considering various other influencing elements. The regression model employs various independent variables, including financial leverage, company size, liquidity, and dividend payout ratio, as these factors may importantly impact CapEx while being unrelated to FCF. This model provides a clear understanding of the dynamics affecting capital expenditure decisions in Pakistani companies.

The analysis was conducted using EViews 12. By using this software, the study measures the linear relationships between the variables and assesses the strength of the impacts of FCF and the other factors on CapEx.

The following econometric model was developed to study the relationship between variables.

$$Y = \alpha + \beta X \text{ ---------- (1)}$$

$$Capital\ Expenditure = \alpha + \beta_1\ Free\ Cash\ Flow + \beta_2 Financial\ Leverage + \beta_3\ Company\ Size + \beta_4\ Company\ Liquidity + \beta_5\ dividend\ Payout\ Ratio + \varepsilon$$

Where Capital Expenditure is the dependent variable, α is Constant, Regression coefficients are β1, β2, β3, β4, and β5 and Financial Leverage, Company Size, Company, Liquidity, and Dividend Payout Ratio are the dependent variables.

Analysis of Data, Interpretation, and Conclusions

This inquiry specifically examines how Free Cash Flows (FCF) influence the capital expenditure decisions of listed manufacturing firms. The independent variables employed in this analysis include company size, dividend payout ratio, financial leverage, liquidity, and FCF.

Descriptive Statistics

The mean, median, and standard deviation of the independent variables—FCFs, leverage, liquidity, firm size, and dividend payout ratio—for the years 2018 through 2022 are presented in this subsection. The research revealed that the average capital expenditure was 1890196817, median of 330862018.5, with a standard deviation of 45136.1399 as per table 1. The average financial leverage turned out 1.41975, via a standard deviation of 0.98690785. The average company size had been 22.6155, at a standard deviation of 1.82527265. The average dividend pay-out ratio was 0.196, alongside a standard deviation of 0.22586358. The average company liquidity was 0.5305, using a standard deviation of 0.25482975, whereas FCFs had a standard deviation of 48786786.4 according to the given results in table 1.

Table 1. *Descriptive Statistics*

	CapEx	FCF	Dividend Payout	Company Size	Liquidity	Leverage
Mean	1890196817	-12196576	0.196	22.6155	0.5305	1.41975
Median	330862018.5	686317	0.145	22.95	0.535	1.13
Maximum	2579304800	454227700	16.94	22.95	0.98	1.49

Minimum	2658000400	0.000	0.000	0.000	0.000	0.000
Std. Dev.	45136.1399	48786786.4	0.2259	1.8252	0.2548	0.9869
Skewness	4.15361	-3.7878	1.0428	0.5683	0.2071	1.3347
Kurtosis	21.3366	19.71261	3.6131	-4.4784	2.2589	4.4454
Jarque-Bera	675.392	561.3744	7.9523	5.7964	1.3391	15.354
Probability	0.0219	0.01263	0.0188	0.0551	0.5119	0.0043
Sum	7560708277	-48786306	7.84	904.62	21.22	56.789
Sum Sq. Dev.	7945637390	-2.9718	1.9896	129.93	2.3529	37.985
Observations	40	40	40	40	40	40

FCF: Free Cash Flow
CapEx: Capital Expenditure

Multi Collinearity Test for Tolerance and VIF

The goal of the study was to determine whether there was a significant link between the independent variables. The independent variables in multiple regressions must not be correlated for them to be valid. To quantify multi-collinearity in the study, tolerance and the Variance Inflation Factor (VIF) were employed. The results showed that there is no multi-collinearity among the independent variables, with tolerance values larger than 0.2 and VIF values less than 10 below for every variable.

Table 2. *Multi Collinearity*

Coefficient	Un-Centered	Centered	
Variable	Variance	VIF	VIF
FCF	0.019244	1.220098	1.14652
Dividend Payout	9.34E+18	2.117104	1.194517
Company Size	1.52E+17	201.1651	1.269553
Leverage	9.64E+18	8.543802	1.569127
Liquidity	6.75E+17	5.14346	1.647178
C	7.56E+19	194.2512	NA

VIF: Variance Inflation Factor
FCF: Free Cash Flow

Autocorrelation Test

A Durbin-Watson value of 1.90737 was obtained from the autocorrelation analysis, indicating that there was no substantial autocorrelation in the residuals at lag 1. The non-significant coefficient of RESID (-1) (0.214763, p = 0.2327), which shows no discernible autocorrelation, supports this conclusion.

The Durbin-Watson statistics closeness to 2 (range: 1.5-2.5) confirms that there is no discernible autocorrelation. This result suggests that there is no significant time dependency in the residuals, which satisfies a fundamental premise of linear regression models.

The residuals' absence of autocorrelation indicates that they are roughly independently distributed, which supports the validity of the regression analysis findings. This result shows that there is no significant autocorrelation-related bias in the model, which supports the accuracy of the estimations.

Table 3. *Least Square*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FCF	0.018958	0.138638	0.136745	0.8921
DIVIDEND_PAYOUT	-4.00E+08	3.05E+09	-0.131021	0.8966
COMPANY_SIZE	-6362623	3.87E+08	-0.016429	0.987
LEVERAGE	7.06E+08	3.14E+09	0.224904	0.8234
LIQUIDITY	2.10E+08	8.34E+08	0.251677	0.8029
C	-4.32E+08	8.64E+09	-0.049956	0.9605
RESID(-1)	0.214763	0.176645	1.215794	0.2327
R-squared	0.042872	Mean dependent var		1.41E-06
Adjusted R^2	-0.131151	S.D. dependent var		3.68E+09
S.E. of regression	3.92E+09	Akaike info criterion		47.17296
Sum squared resid	5.06E+20	Schwarz criterion		47.46851
Log likelihood	-936.4592	Hannan-Quinn criter.		47.27982
F-statistic	0.246359	Durbin-Watson stat		1.90737

Regression Analysis

In alignment with the study's objectives, to assess the relationships among these variables, regression analysis was employed. This statistical technique enables the exploration of how each independent variable relates to capital expenditure, thus providing insights into the dynamics affecting investment decisions within the manufacturing sector.

Table 4. *Generalized Method of Movements*

Variables	Coefficient	Std. Error	t-statistics	Prob.
Freecashflow	0.4452	0.1040	4.2799	0.0234
Csize	13.331	2.1708	6.1412	0.0087
Divid	-0.060	0.1127	-0.5327	0.6312
Lev	2.3233	0.3816	6.0877	0.0089
Liq	1.2146	0.2755	4.4090	0.0216
C	-29.202	.....	.....	0.0342

R-squared 0.976685 Mean dependent var 19.55265 Adjusted R-squared 0.937827 S.D. dependent var. 2.772145 S.E. of regression 0.691222 Sum squared resid 1.433365 Durbin-Watson stat. 0.446051 = J-statistic 0.000000

The results of the Generalized Method of Moments (GMM) regression show that the independent variables' probability values, are less than 0.05, other than dividend payout ratio.

- Free Cash Flow (FCF): p-value (0.02 < 0.05)
- Company Size: p-value (0.008< 0.05)
- Leverage: p-value (0.008< 0.05)
- Liquidity: p-value (0.02 < 0.05)

In statistical terms, this means that the observed connections between every independent variables and the dependent variable are unlikely to be due to chance (less than 5% probability). In other words:

- The relationship between FCF and CapEx has statistical significance ($p < 0.05$)
- The links between Company Size and CapEx has statistical significance ($p < 0.05$)
- The connection between Leverage and CapEx holds statistical significance. ($p < 0.05$)
- The relation between Liquidity and CapEx holds statistical significance. ($p < 0.05$)

This suggests that these independent variables have a genuine association with Capital Expenditure, and are not simply due to random chance. All the independent variable other than the dividend payout ratio has a significant influence on the capital expenditure

The Generalized Method of Moments (GMM) analysis revealed that the dividend payout ratio's probability value (p-value) is 0.63. In statistical terms, this means that the observed relationship between Dividend Payout Ratio and Capital Expenditure is not statistically significant ($p > 0.05$). Stated differently, there is insufficient evidence in the data to conclude that the dividend payout ratio has a significant effect on capital expenditure. The relationship between the two variables may be due to chance (63% probability), and may not be a genuine association.

The coefficient is 0.445155. This indicates that for every unit increase in FCF, the capital expenditure (CapEx) increases by approximately 0.445 units, assuming all other variables remain constant. This positive coefficient shows a direct relationship between FCF and CapEx.

The coefficient is 13.33124. This suggests that an increase in company size leads to a substantial increase in CapEx, with CapEx increasing by about 13.331 units for every unit increase in company size. This large positive coefficient highlights the significant impact of company size on CapEx.

The coefficient is -0.060032. This negative coefficient indicates that an increase in dividend distribution slightly decreases CapEx, with CapEx decreasing by 0.060 units for every unit increase in dividend distribution. However, given the p-value, this relationship is not statistically significant.

The coefficient is 2.323275. This positive coefficient signifies that higher leverage leads to increased CapEx, with CapEx increasing by approximately 2.323 units for every unit increase in leverage. This indicates a positive and significant impact of leverage on CapEx.

The coefficient is 1.214611. This positive coefficient implies that greater liquidity results in higher CapEx, with CapEx increasing by around 1.215 units for every unit increase in liquidity. This demonstrates a significant positive relationship between liquidity and CapEx.

In practice, this means that capital expenditure is not significantly impacted by the dividend payout ratio. The R-squared (R) value is 0.9766, which indicates that 97.66% of how the dependent variable changed. (Capital Expenditure) is explicable in light of the independent factors (Free Cash Flow, Company Size, Leverage, Liquidity, and Dividend Payout Ratio) in the regression model. The remaining 2.34% of the variation is unexplained, which means that random mistakes or other factors not included in the model are to blame. In other words, the model can explain an extremely high 97.66% of the variability in Capital Expenditure, which is almost a perfect fit.

Discussion

The study's conclusions show a statistically significant correlation between manufacturing firms' Free Cash Flow (FCF) and Capital Expenditure (CapEx), with financial leverage having a major impact on CapEx choices. These findings support

the theoretical paradigm put forth in earlier research by indicating that capital investment can be maximized through efficient management of FCF and leverage.

Furthermore, the lack of a discernible effect of dividend distribution on CapEx is in line with earlier studies, suggesting that other considerations are more important when making investment choices. Policymakers and industry experts can use this information to help them create plans that put liquidity management and financial leverage ahead of dividend regulations.

The results of the study highlight the need for more investigation into the long-term impacts of changes in FCF, leverage, firm size, and liquidity on capital expenditure choices. A more thorough understanding of the variables influencing capital investment in the manufacturing sector may be obtained by comprehending these dynamics, which can aid in the creation of better-informed policies and decision-making.

Practical Implications

The results of the study show that there is a statistically significant correlation between manufacturing enterprises' Free Cash Flow (FCF) and Capital expenditure (CapEx), with financial leverage having a major impact on CapEx choices. There are numerous real-world uses for these insights:

For Professionals in the Industry

Financial planning: Professionals are better equipped to make well-informed investment and financial planning decisions when they are aware of the close relationship between FCF and CapEx. Effective FCF management enables businesses to maximize capital expenditures, which improves resource allocation.

Leverage management: The necessity of strategic financial management is highlighted by the substantial effect that leverage has on CapEx. To guarantee sustainable investment without going overboard, businesses should balance their borrowing methods.

For those in Charge of Policy

Regulation development: Policies that encourage sustainable borrowing practices can be informed by an understanding of how leverage affects capital expenditures. It is possible to create regulations that promote manufacturing companies to manage their finances responsibly.

Balanced policies: Policymakers can concentrate on developing balanced dividend and investment policies as they know that dividend distribution has little impact on capital expenditures. This promotes stability and long-term growth in the industry.

Conclusion

This study aims to explain the relationship between capital expenditure and free cash flow among manufacturing companies in Pakistan. The primary objective is to provide empirical evidence that variations in FCF significantly affect CapEx decisions. The findings support the previous researchers in a way that FCFs, financial leverage, company size, and liquidity are all critical factors influencing the capital expenditures of manufacturing businesses listed on the Pakistan Stock Exchange (PSE) (Griffin, Lont, & Sun, 2010).

The study reveals a statistically significant relationship between the capital expenditures of manufacturing firms and their free cash flow ratios, suggesting that fluctuations in FCF directly lead to changes in capital expenditure. Furthermore, the study highlights the impact of leverage on investment strategies within the manufacturing sector by explaining the role financial leverage plays in forming the capital expenditure decisions of these companies.

Additionally, the research confirms previous findings that large firms have a strong influence on capital expenditure, as both company size and liquidity were found to have a considerable effect on the capital spending behavior of listed manufacturing firms (Ehrhardt & Brigham, 2016; Romasari, 2013). Conversely, the study concludes no statistically significant effect of the dividend payout ratio on the capital expenditure of these firms, showing that dividend policies may not play a significant role in influencing capital investment decisions (Hellström & Inagambaev, 2012). In conclusion, the study finds that financial leverage, company size, liquidity, and free cash flow, have a significant influence on the capital expenditure decisions of publicly listed manufacturing firms.

Future research can focus on conducting longitudinal studies to show the effects of variations in liquidity, company size, financial leverage, and free cash flows on capital expenditure decisions. Such studies could explore potential industry-specific differences and outside economic influences that may affect investment behaviors. Moreover, examining the long-term trends in these relationships could provide deeper insights into how manufacturing firms adapt their capital spending strategies as a result of changing financial conditions.

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