IMPACT OF FINANCIAL LEVERAGE AND WORKING CAPITAL MANAGEMENT ON FIRM'S PROFITABILITY WITH PANDEMIC INFLUENCES

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ABSTRACT

The current study examined the impact of financial leverage and working capital management on the profitability of thirty-five firms from chemical and pharmaceutical sectors listed on the Pakistan Stock Exchange (PSX). We employed panel OLS, random effect and fixed effect regressions on the collected data of five years ranging from 2017 to 2021. Results proved that financial leverage and working capital management influenced profitability for overall, pre-covid and post-covid samples significantly. Further, the consistency of results was detected with battery of variations. This research can be of great importance for academic as well as managerial uses.

INTRODUCTION

Profit maximization is one of the most important task of business managers. Managers constantly look for ways to change the business to improve profitability. To do so, it is important for the manager to develop, implement and maintain strategies that can improve its performance. Generally, profitability is defined as the profit of a company that are generated from revenue after deducting all expenses during a given period. It signals management's

success, shareholders' satisfaction, attraction for investors and the company's goodwill (Bekmezci, 2015). A business that is not profitable cannot survive. Conversely, a business that is highly profitable has the ability to reward its owners with a large return on their investment.

The economy of Pakistan is represented by approximately 12 areas of activity, including the production of raw materials, food, chemicals, various manufactured items and pharmaceuticals (Samo & Murad, 2019). This is significant to the economy of the country (Akter & Mahmud, 2014) and it contributes to the GDP, foreign trade profit and employment of the population (Borhan et al., 2014). The concept of profitability is to assess the ability of business for the generation of excess worth out of investment compared to costs incurred during a specific period (Shaheen & Malik, 2019). As a company, by increasing assets, can create good profit with a correspondingly right margin, stock owners may achieve more profit growth when some additional asset is the outcome of the external loan (Asif et al., 2011). Highly profitable firms can tackle the negative economic shocks and other external obstacles and challenges (RAHMAN et al., 2020).

Profitability of a firm is influenced by the Working Capital Management. Every firm, weather it is large or small requires working capital for its daily operational activities. Working capital management (WCM) is an essential component of corporate finance literature and has a significant impact on profitability of a firm. WCM is concerned with problems that arise when attempting to manage current assets, current liabilities, and the interrelationship that exists between them. Investment in working capital determines profitability as well as long term survival of a firm so it can be regarded as life or philanthropic figure for any economic activity that a firm takes part in (Shah, 2017). Low investment in working capital may increase profitability as it reduces investment in inventories and receivable accounts. Reduction in inventories will reduce storage and insurance costs while reduction in receivable accounts will free up funds which can be invested somewhere else and may generate profit. The downside to this approach is that low investment in inventories will hamper production and will increase risk of stock out whereas low investment in receivable accounts will reduce sales (Altaf & Shah, 2018). On the other hand, high investment in working capital will increase sales and reduce the risk of stock outs by increasing investment in receivable accounts and inventories which is why many firms prefer this approach but it has some undesirable effects as well. Hence, financial managers solve this dilemma by keeping their working capital and each of its components at optimal levels (Nazir & Afza, 2009).

Another factor that influences a firm profitability is financial leverage. Financial leverage is when you borrow money to make an investment that will hopefully lead to greater returns. It's built on the idea of spending money to make money. A firm can raise short term debt and long-term debt financing. Short term debt is related to liquidity decision whereas long term debt is related to long term investment in fixed assets decisions, both equity and debt are needed to meet up the investment needs of the firms (RAHMAN et al., 2020). Different views on the link between leverage and profitability are given by Finance theories. There are also different empirical evidences showing positive, negative & no to weak relationship between profitability and leverage (Adetunji et al., 2016). Financial leverage considers the exercise of borrowed money in the company for acquiring assets (Abubakar, 2015). The motive of employing financial leverage is to earn higher on the fixed charges funds than their costs (Golinelli & Bontempi, 2005).

In order to conduct this study, we selected Chemicals, chemical products and pharmaceuticals sector listed on Pakistan Stock Exchange (PSX). We gather the data from Financial Statement Analysis (FSA) of non-financial firms published by State Bank of Pakistan (SBP) and the audited annual reports published by each company, forming the sample of this study. There are total of 44 firms in this sector that are listed at PSX from which we selected 35 firms because the data of remaining firms was unavailable.

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Unlike previous studies, this paper contributes to the financial leverage and working capital management literature in following ways. First, we offer new evidence on the relationship between working capital management and profitability, by taking into account the possible linearity of this relation and accordingly testing the different tests and regression models. Second, we test the relationship of financial leverage and profitability. We use Pooled OLS regression along with random and fixed effect model. We run Breusch pagan test to check heteroscedasticity and to deal with heteroscedasticity it we use robust standards in our regression models, LM test to check linearity of data, Hausman to select regression model between fixed effect and random effect model.

The remainder of the paper is divided into five sections. Section 2 contains a brief literature review. Section 3 outlines the data and method. Section 4 reports the empirical results. Section 5 concludes the overall paper.

LITERATURE REVIEW

Adetunji et al., (2016) evaluated the relationship between leverage and firm. Relying on the multiple regression technique. Findings indicate that financial leverage had significant influence on firm value, thus leading to the conclusion that financial leverage assumes a better source of financing businesses and investments as compared to equity. The correlation analysis reveal that there is significant relationship between debt- equity ratio and financial performance proxy by return on equity (Abubakar, 2015). Borhan et al., (2014) explored the impact of financial leverage on the financial performance. Some selected ratios: debt ratio (DR) and debt equity ratio (DTER) represent the leverage ratios, while operating profit margin (OPM) and net profit margin (NPM) represent the profitability ratios. The result shows that CR, QR, DR and NPM have a positive relationship while DTER and OPM have a negative relationship with the company's financial performance. Among the six ratios, CR, DR and NPM show the highest significant impact on the company's performance. Dalci (2018) revealed that the impact of leverage on profitability is inverted U-shaped. In this inverted U-shaped relationship, the positive impact of financial leverage on profitability could be attributed to tax shield, whereas the negative impact might be because of bankruptcy cost, financial distress, severe agency problems and information asymmetry that the listed Chinese firms suffer from because of some institutional characteristics of China. The debt ratio had a significant positive effect on profitability while total assets had a significant negative impact. In contrast, total sales had statistically insignificant effect to the profitability of the companies (Kartikasari & Merianti, 2016). Grau & Reig (2021) analyzed the effect that operating leverage exerts on the profitability. It finds the relationship between that profitability and other sources of risk that depend on the country in which the company operates. (RAHMAN et al., 2020) find out that firm's profitability is negatively affected by the firm's leverage. Samo & Murad (2019) analyzed the impact of liquidity and financial leverage on the profitability, using a sample of 40 selected publicly quoted companies in the textile sector of the Pakistani economy. The results revealed that there is a positive relationship between liquidity and profitability and negative relationship between financial leverage and profitability. Shaheen & Malik (2019) concluded that the proportion of debt financing in capital structures is affected by the profitability, size and capital intensity of the firms in textile sector of Pakistan.

Altaf & Shah (2017) examined the impact of financial constraints on working capital management and performance relationship. Results of the study confirm the inverted U-shape relationship between working capital management and firm performance. In addition, we also found that the firms that are likely to be more financially constrained have lower optimal working levels. The inverted U-shape relationship between WCM and firm profitability. In addition, the authors also found that the firms should complete its CCC on an average by 63

days (Altaf & Shah, 2018). EL-Ansary & Al-Gazzar (2021) investigated the possible non-linear effect of net working capital (NWC) level on profitability. The results demonstrate that NWC levels had a non-linear effect on profitability using ROA as a profitability proxy while results were insignificant using ROE as a profitability proxy. Furthermore, results show the absence of interactive effects between NWC, cash levels and both profitability proxies. There is a negative and statistically significant correlation between profitability and accounts receivable turnover in days (ART), accounts payable turnover in days (APT) and inventory turnover in days (IT) (Kušter, 2022). (Michel et al., 2020) estimated CCC had a negative impact on the profitability of French wine firms, suggesting an aggressive working capital management strategy. The firm performance is positively associated with CCC length, which implies that firms with high performance rates pay less attention to WCM (Moussa, 2018). Nazir & Afza, (2009) confirmed that WCM is negatively associated with profitability, which means an aggressive WCM policy leads to higher profitability. Overall, and in all the subgroup studies, the cash conversion cycle (CCC) was found to be negatively associated with profitability.

METHODOLOGY AND PROCEDURES

Data and method:

Data and data sources:

To analyze the impact of financial leverage and working capital management on firm profitability we use an electronic database, the financial statement analyses (FSA) published by State Bank of Pakistan (SBP) for the period of 2016-2021 and annual reports of firms, to extract the firm-level information of all the variables used in the study. We employ a panel data set of 44 companies listed on Pakistan Stock Exchange (PSX) namely chemical, chemical products and pharmaceuticals. In addition, the financial information of these firms has been collected for a period of five years (2017-2021). We followed a systematic method of deletion of sample to arrive at the final sample. The final sample of the study has been chosen by dropping all firms that had not reported the full information in all years of the study. This deletion left us with the final sample of 35 firms.

Variable measurements:

In order to carefully estimate the impact of financial leverage and working capital management on firm profitability we use measures of the variables. Profitability is a dependent variable; profitability is measured by return on asset (ROA) which is measured by net income divided by total assets available to a company. ROA ratio measures a company's ability to use its assets for profit making purposes by relating profit and profit generating assets (Korneta, 2018) and (Kušter, 2022). Financial leverage and working capital management are independent variable, financial leverage is measured by total debt ratio (TDR) which is measured by total debt divided by total assets of a company. TDR is used to measure a company's ability to raise cash from new debt (Dang et al., 2019) and (Dalci, 2018). Working capital management is measured by inventory conversion period (ICP), average receivable period (ARP) and average payable period (APP). ICP is measured by average inventories divided by cost of goods sold and then multiply by days in a year (Altaf & Shah, 2018) and (Canh et al., 2019). It is the time required to obtain material for a product, manufacture it and sell it. ARP is measured by average receivables divided by sales and then multiply by days in a year (Moussa, 2018) and (Kušter, 2022). It is the average number of days it takes a business to collect and convert its accounts receivable into cash. APP is measured by average payables divided by sales and then multiply by days in a year. It is the average number of days a company takes to pay the amount payable to its supplier (Altaf & Shah, 2018) and (Kušter, 2022). Sales growth (GRO), firm size (SIZE) and asset tangibility (AT) are control variables. GRO is an indicator of sales growth which is measured by current year sales divided by previous year sales then subtract 1 (Michel et al.,

2020). Sales growth is a measure of the change in revenue over a fixed period of time. SIZE is an indicator of firm size which is measured by taking natural logarithm of total assets of a company (Altaf & Shah, 2018). AT is an indicator of asset tangibility which is measured by fixed assets divided by total assets of a company (Altaf & Shah, 2017). AT determines the financial health of a company by determining its ability to cover debt obligations with current tangible assets after fulfilling all liabilities.

Table 1. Study Variables

Variables	Notation	Measures	Author
Return on Asset	ROA	Net income/Total Asset	Hussain et al. (2021; 2022)
Total Debt Ratio	TDR	Total Debt/ Total Asset	Ramzan et al. (2023)
Inventory Coverage Ratio	ICP	(Average Inventories * 365) / Cost of Goods Sold	Moussa (2018); Hussain (2012)
Average Receivable Period	ARP	(Average Receivables * 365) / Sales	Altaf & Shah (2018); Ren & Hussain (2022)
Average Payable Period	APP	(Average Payables * 365) / Sales	Canh et al. (2019); Hussain, Hussain & Hassan (2016)
Sales Growth	GRO	(Current Year Sales / Previous Year Sales) – 1	Xuezhou et al. (2020; 2022a)
Firm Size	SIZE	Natural Logarithm of Total Assets	Bilawal et al. (2016)
Asset Tangibility	AT	Fixed Assets / Total Assets	Xuezhou et al. (2022b)

Econometric model:

Four models were estimated in this study and all measured profitability as follows:

$$ROA = \alpha + \beta_1 TDR_{(i,t)} + \beta_2 GRO_{(i,t)} + \beta_3 SIZE_{(i,t)} + \beta_4 AT_{(i,t)} + D_{covid} + \varepsilon_t \ldots\ldots\ldots\ldots 1$$

$$ROA = \alpha + \beta_1 ICP_{(i,t)} + \beta_2 GRO_{(i,t)} + \beta_3 SIZE_{(i,t)} + \beta_4 AT_{(i,t)} + D_{covid} + \varepsilon_t \ \ldots\ldots\ldots\ldots 2$$

$$ROA = \alpha + \beta_1 ARP_{(i,t)} + \beta_2 GRO_{(i,t)} + \beta_3 SIZE_{(i,t)} + \beta_4 AT_{(i,t)} + D_{covid} + \varepsilon_t \ \ldots\ldots\ldots\ldots 3$$

$$ROA = \alpha + \beta_1 APP_{(i,t)} + \beta_2 GRO_{(i,t)} + \beta_3 SIZE_{(i,t)} + \beta_4 AT_{(i,t)} + D_{covid} + \varepsilon_t \ \ldots\ldots\ldots\ldots 4$$

In the above equations α is constant, β is coefficient, ROA is dependent variable, GRO, SIZE and AT are control variables and ε_t is error term. The D_covid is a dummy variable intended to measure change in the profitability during the Covid19 outbreak. TDR is independent variable in equation 1. ICP is independent variable in equation 2. In equation 3 the ARP is independent variable. Finally in equation 4 the APP is independent variable.

Figure 1. Research Model
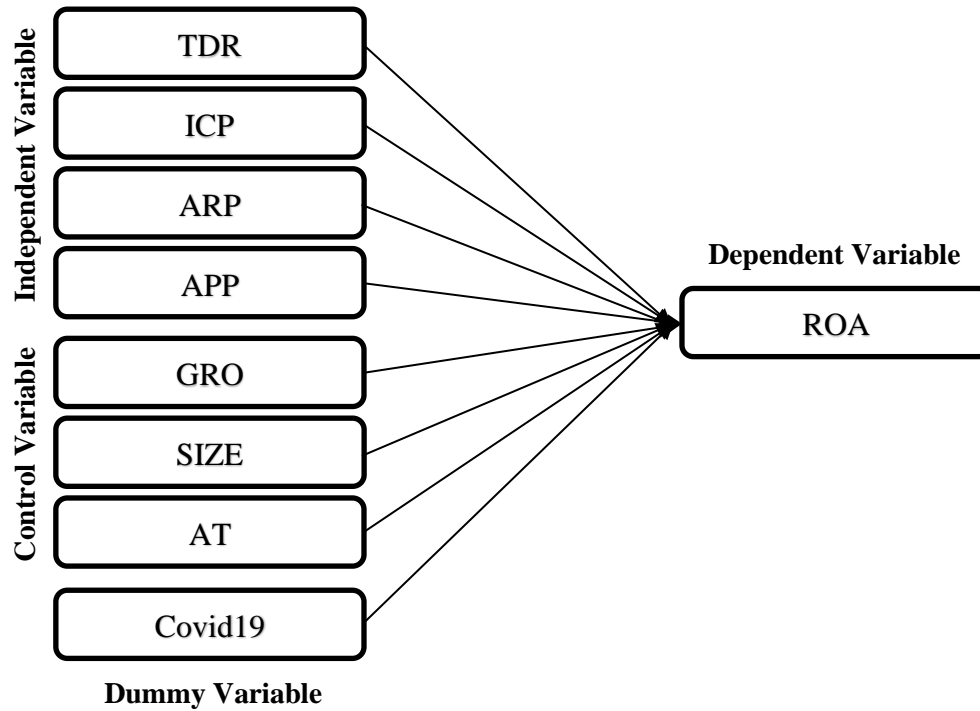
RESULTS AND DISCUSSION

Empirical results:

Descriptive statistics:

Descriptive statistics are used to describe or summarize data in ways that are meaningful and useful. Descriptive statistics are used to describe or summarize data in ways that are meaningful and useful. Descriptive statistics are reported in Table 2. This section provides the descriptive statistics of 35 listed non-financial firms from the period from 2017 to 2021 covering the chemical, chemical products and pharmaceuticals sectors in Pakistan. ROA is the dependent variable and its mean value 8.3312 and having standard deviation (SD) of 8.8568. The first independent variable (I.V) is TDR with the mean value of 0.5745 and SD is 0.3179. The second I.V is ICP with the mean value of 64.8851 and SD is 35.9080. The third I.V is ARP with the mean value of 13.1817 and SD is 20.4290. The fourth I.V is APP with the mean value of 48.2417 and SD is 55.8954. In the current study GRO is the first control variable whose mean value is 0.1602 and SD is 0.2623. The SIZE is the second control variable with the mean value is 15.9246 and SD is 1.7673. The AT is the third control variable whose mean value is 0.4552 and SD is 0.2189. The FA has mean value of 29.73404 and SD is 13.95023.

Table 2. Descriptive Statistics

Variables	Obs	Mean	S. D	Min	Max
ROA	175	8.3312	8.8568	-15.64	35.11
TDR	175	0.5745	0.3179	0.16	2.31
ICP	175	64.8851	35.9080	1.68	218.46
ARP	175	13.1817	20.4290	0.01	111.03
APP	175	48.2417	55.8954	0.4	356.07
GRO	175	0.1602	0.2623	-0.57	1.69
SIZE	175	15.9246	1.7673	11.85	19.42
AT	175	0.4552	0.2189	0.01	0.98

Correlation analysis:

The correlation is a measure of statistics which is used to measure the strength of association and relative movements between two variables. In the current study the correlation is presented in Table 3 with 175 number of observations. Multicollinear problem may arise if the correlation coefficient between two explanatory variables is 0.80 or larger (RAHMAN et al., 2020). None of the pair wise correlation coefficients of variables exceeds 0.80. Table 3 suggesting no multicollinearity among the explanatory variables.

Table 3. Correlations and Variance Inflation Factors

Variables	ROA	TDR	ICP	ARP	APP	GRO	SIZE	AT
ROA	1							
TDR	-0.5142*	1						
ICP	-0.1894*	-0.2047*	1					
ARP	-0.2376*	0.0608	0.0167	1				
APP	-0.4052*	0.2241*	0.0291	0.1015	1			
GRO	0.2028*	0.0945	-0.2088*	-0.0524	-0.1664*	1		
SIZE	0.3142*	-0.2026*	-0.4351*	-0.0363	0.0973	0.0779	1	
AT	-0.4669*	0.5000*	-0.3503*	0.2421*	0.1475	0.0138	0.1543*	1

Multicollinearity analysis:

However, to further investigate this issue of multicollinearity, we employed the variance inflation factor (VIF) and. VIF helps to identify the severity of any multicollinearity issues so that the model can be adjusted. A good regression model is considered free of multicollinearity once VIF value is < 10 and 1/VIF > 0.10 (Kartikasari & Merianti, 2016). The output shows that the all variables in this study are free of multicollinearity because VIF of all variables are < 10 and 1/VIF of all variables is > 0.10.

Table 4. Multicollinearity Test Results

Variables	VIF	1/VIF
TDR	1.71	0.5860
AT	1.65	0.6070
SIZE	1.52	0.6588
ICP	1.52	0.6598
APP	1.16	0.8610
GRO	1.10	0.9106
ARP	1.09	0.9141
Mean VIF	1.39	

Main Findings

The regression results of TDR as an independent variable is given in Table 5. With regard to ROA, the adjusted R-squared is 46%. This suggests that independent variable contribute about 46% of the variation in ROA. Lagrange Multiplier (LM) test is significant (0.000) which means that the data is linear. The linear regression algorithm reveals that there is a linear relationship between the proxies of independent variables and the dependent variable. Hausman test is used to select the estimation method from fixed or random effect model. The findings of the hausman test reveal that the fixed effect model is more suitable than the random effect model because the p-value is less than 5% (0.011). The insignificance of Breusch-pagan test (0.238) reveals non-existence of heteroscedasticity. From the estimation of fixed effect, TDR has negative significant -22.6796 (0.000) impact on ROA which generally portrays that when firms demand more debt as a financing method, their profit level reduces. It also means

when firms demand more debt they have to pay more interest from their profit. A good debt ratio is around 1 to 1.5. However, the ideal debt ratio will vary depending on the industry, as some industries use more debt financing than others. Capital-intensive industries like the financial and manufacturing industries often have higher ratios that can be greater than 2. GRO has positive significant 6.0077 (0.000) impact on ROA which depict that when firm's sales grow the profit also grows. SIZE has positive significant 7.0611 (0.001) impact on ROA which renders that if firm size increases in terms of total assets the profit also increases. AT has negative significant -30.4637 (0.000) impact on ROA which describe that if firm have more fixed assets, then its profit decreases. Covid19 has negative significant -2.7533 (0.003) impact on ROA which means during covid19 pandemic the firm's profitability decreases because of various factors like; shortage of supply of raw material, decrease in sales and economic recession.

Table 5: Regression Results for TDR as I.V

Variables	Pooled OLS	Random Effect	Fixed Effect
TDR	-7.9251 (0.000)	-10.0338 (0.001)	-22.6796 (0.000)
GRO	7.1398 (0.000)	6.4326 (0.000)	6.0077 (0.000)
SIZE	1.5156 (0.000)	1.7191 (0.002)	7.0611 (0.001)
AT	-15.1986 (0.000)	-18.2079 (0.000)	-30.4637 (0.000)
Covid19	-0.8887 (0.388)	-0.9768 (0.150)	-2.7533 (0.003)
Diagnostics			
Breusch-pagan Test	1.39 (0.238)		
LM test	115.42 (0.000)		
Hausman's Test	14.81 (0.011)		
R-squared	0.4603		

The regression results of ICP as an independent variable is given in Table 6. With regard to ROA, the adjusted R-squared is 44%. This suggests that independent variable contribute about 44% of the variation in ROA. Lagrange Multiplier (LM) test is significant (0.000) which means that the data is linear. The linear regression algorithm reveals that there is a linear relationship between the proxies of independent variables and the dependent variable. Hausman test is used to select the estimation method from fixed or random effect model. The findings of the hausman test reveal that the random effect model is more suitable than the fixed effect model because the p-value is more than 5% (0.585). The significance of Breusch-pagan test (0.009) reveals existence of heteroscedasticity. To deal with heteroscedasticity we use robust standards in our regression models. From the estimation of random effect, ICP has negative significant -0.0497 (0.012) impact on ROA which means that it takes more time to obtain materials for a product, manufacture it, and sell it. A manager must need to make such effective strategies to reduce that time. For most industries, the ideal inventory turnover ratio will be between 5 and 10, meaning the company will sell and restock inventory roughly every one to two months. GRO has positive significant 4.9873 (0.000) impact on ROA which depict that when firm's sales grow the profit also grows. SIZE has positive significant 1.7871 (0.000) impact on ROA which renders that if firm size increases in terms of total assets the profit also increases. AT has negative significant -26.1509 (0.000) impact on ROA which describe that if firm have more fixed assets then its profit decreases. Covid19 has negative insignificant -0.7267 (0.160) impact on ROA.

Table 6: Regression Results for ICP as I.V

Variables	Pooled OLS	Random Effect	Fixed Effect

ICP	-0.0587 (0.000)	-0.0497 (0.012)	-0.0556 (0.129)
GRO	4.6742 (0.040)	4.9873 (0.000)	4.4025 (0.000)
SIZE	1.4763 (0.000)	1.7871 (0.000)	4.9993 (0.022)
AT	-24.214 (0.000)	-26.1509 (0.000)	-33.3580 (0.000)
Covid19	-0.5173 (0.611)	-0.7267 (0.160)	-52.1146 (0.024)
Diagnostics			
Breusch-pagan Test	6.75 (0.009)		
LM test	118.04 (0.000)		
Hausman's Test	3.75 (0.585)		
R-squared	0.4456		

The regression results of ARP as an independent variable is given in Table 7. With regard to ROA, the adjusted R-squared is 41%. This suggests that independent variable contribute about 41% of the variation in ROA. Lagrange Multiplier (LM) test is significant (0.000) which means that the data is linear. The linear regression algorithm reveals that there is a linear relationship between the proxies of independent variables and the dependent variable. Hausman test is used to select the estimation method from fixed or random effect model. The findings of the hausman test reveal that the random effect model is more suitable than the fixed effect model because the p-value is more than 5% (0.441). The significance of Breusch-pagan test (0.002) reveals existence of heteroscedasticity. To deal with heteroscedasticity we use robust standards in our regression models. From the estimation of random effect, ARP has negative significant -0.0606 (0.014) impact on ROA which means that number of days to collect and convert its accounts receivable into cash takes more than average (60 days). If it is higher means the cash is not reinvested which leads to less profit. A shorter average collection period (60 days or less) is generally preferable and means a business has higher liquidity. GRO has positive significant 5.5142 (0.000) impact on ROA which depict that when firm's sales grow the profit also grows. SIZE has positive significant 5.5142 (0.000) impact on ROA which renders that if firm size increases in terms of total assets the profit also increases. AT has negative significant -23.9573 (0.000) impact on ROA which describe that if firm have more fixed assets, then its profit decreases. Covid19 has negative significant -12.6503 (0.036) impact on ROA which means during covid19 pandemic the firm's profitability decreases because of various factors like; shortage of supply of raw material, decrease in sales and economic recession.

Table 7: Regression Results for ARP as I.V

Variables	Pooled OLS	Random Effect	Fixed Effect
ARP	-0.0412 (0.066)	-0.0606 (0.014)	-0.1207 (0.017)
GRO	5.9255 (0.013)	5.5142 (0.000)	4.7793 (0.000)
SIZE	1.9106 (0.000)	2.0450 (0.002)	3.1884 (0.050)
AT	-20.5363 (0.000)	-23.9573 (0.000)	-37.1028 (0.000)
Covid19	-1.1696 (0.273)	-12.6503 (0.036)	-23.6183 (0.012)
Diagnostics			
Breusch-pagan Test	8.84 (0.002)		
LM test	123.37 (0.000)		
Hausman's Test	4.80 (0.441)		
R-squared	0.4153		

The regression results of APP as an independent variable is given in Table 8. With regard to ROA, the adjusted R-squared is 52%. This suggests that independent variable contribute about 52% of the variation in ROA. Lagrange Multiplier (LM) test is significant (0.000) which means that the data is linear. The linear regression algorithm reveals that there is a linear relationship between the proxies of independent variables and the dependent variable. Hausman test is used to select the estimation method from fixed or random effect model. The

findings of the hausman test reveal that the fixed effect model is more suitable than the random effect model because the p-value is less than 5% (0.040). The insignificance of Breusch-pagan test (0.507) reveals non-existence of heteroscedasticity. From the estimation of fixed effect, APP has negative significant -0.01271 (0.317) impact on ROA which depicts that the average number of days a company takes to pay the amount payable to its supplier have negative effect on profitability. An ideal average payment period is considered to be 90 days by many companies. Any payment significantly higher than 90 days would indicate that the company is taking too long to pay off its credit. GRO has positive significant 4.7629 (0.001) impact on ROA which depict that when firm's sales grow the profit also grows. SIZE has positive significant 3.6581 (0.079) impact on ROA which renders that if firm size increases in terms of total assets the profit also increases. AT has negative significant -32.3458 (0.000) impact on ROA which describe that if firm have more fixed assets, then its profit decreases. Covid19 has negative significant -1.9318 (0.047) impact on ROA which means during covid19 pandemic the firm's profitability decreases because of various factors like; shortage of supply of raw material, decrease in sales and economic recession.

Table 8: Regression Results for APP as I.V

Variables	Pooled OLS	Random Effect	Fixed Effect
APP	-0.0569 (0.000)	-0.0312 (0.002)	-0.01271 (0.317)
GRO	3.954 (0.031)	4.7574 (0.001)	4.7629 (0.001)
SIZE	2.1147 (0.000)	2.1396 (0.000)	3.6581 (0.079)
AT	-19.5427 (0.000)	-22.7719 (0.000)	-32.3458 (0.000)
Covid19	-1.4991 (0.120)	-1.4152 (0.046)	-1.9318 (0.047)
Diagnostics			
Breusch-pagan Test	0.44 (0.507)		
LM test	67.05 (0.000)		
Hausman's Test	11.62 (0.040)		
R-squared	0.5287		

CONCLUSION AND SUGGESTION

This study was conducted to analyze the impact of financial leverage and working capital management on firm's profitability of chemical, chemical products and pharmaceuticals listed firms of non-financial sector of PSX. For this purpose, we extracted the sample of 35 listed firms from FSA and annual reports of firms over a period of 5 years (2017-2021). TDR is very important because a higher TDR means the company has many debts and the possibility to default is higher. It is recommended that firms should increase its reliability and fully utilize its assets rather than buying new assets, which will increase total debts and total expenses. By doing this, the company may increase the profit gains rather than increase the total interest expenses. The results of our analysis support the traditional view that an aggressive working capital management policy leads to higher profitability. Overall, and in all the subgroup studies, the ICP, ARP and APP is found to be negatively associated with profitability. This association is statistically significant in all the cases and also differs in terms of magnitude. When the working capital requirements are not properly managed and are allocated more than required, it renders the management inefficient and reduces the benefits of short-term investments. On the other hand, if the working capital is too low, the company may miss a lot of profitable investment opportunities or suffer short-term liquidity crisis, leading to the degradation of company credit, as it cannot respond effectively to temporary capital requirements. Profitability ratio is the main ratio representing the company's financial health. To increase the profitability margin, the company should reduce its expenses portion, increase the total revenue and maintain total cash fixed costs. The current study employs a set of control variables related to firm size, sales growth and asset tangibility. They also significant impact on profitability in different directions.

This study suggests that the corporate financial decision makers should avoid more of debt. In accordance with the pecking order theory. It is essential for a firm to have efficient debt management to avoid risk or a decrease in profitability. The firms have to consider its retained earnings first then go for the debt option. As the result of this research shows, debt has negative impact on profitability. The researcher advises companies to reduce their use of debt at the point where the weighted average cost of capital begins to increase, thus making the firms' value to fall. Working capital managers would tend to increase the investment in order to increase the performance of the firm. However, investing in working capital beyond the optimal level will backfire and may increase the chances of the credit risk of firms. Thus, it is advisable for managers to avoid the deviations. Researchers must consider further extending this analysis by incorporating additional empirical evidence available in the near future. It will also be quite useful if additional studies are performed to confirm the relationships analyzed.

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