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# **MEDIATING AND MODERATING ROLE OF INVESTMENT EFFICIENCY AND INVESTMENT SCALE BETWEEN FINANCIAL FLEXIBILITY AND FIRM PERFORMANCE: EVIDENCE FROM NON-FINANCIAL SECTOR OF PAKISTAN**

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## **ABSTRACT**

*There are lot of drivers available for determining financial performance but in the recent era, the most crucial one is financial flexibility. Financial flexibility enhances the firm's investment ability and leads towards better investment. The aim of the study is to inspect the mediating and moderating role of investment efficiency and investment scale between financial flexibility and firm performance. Financial flexibility is measured by index based on the cash holdings, advantage and financial health, which is measured by Z-score. Proxy that is used for measurement of investment scale is growth in non-cash assets and investment efficiency is measured using Richardson (2006) model. Proxy of return on assets is used to measure firm performance. Control variables firm size and leverage are measured by natural log of assets and debt to assets ratio respectively. For the research purpose 103 non-financial companies registered on Pakistan Stock Exchange are selected. Six years data from 2013-2018 is used for analysis purpose. Descriptive statistics, regression with correlation and other appropriate panel data econometrics techniques are used for data analysis. Regression results shows that financial flexibility is a determinant of firm performance. It means that financially flexible firms have better firm performance than non-financially flexible firms. Moreover, results show that there is no indirect relation between financial flexibility and firm performance. As both the mediating variables investment scale and investment efficiency failed to mediate between financial flexibility and firm*

*performance. The results further show that investment scale moderate the impact of financial flexibility towards firm performance. It negatively moderate with financial flexibility towards firm performance. On the contrary, investment efficiency failed to moderate the relation between financial flexibility and firm performance. This research is proved to be noteworthy and very helpful for the corporate sector while making capital structure decisions in order to improve the firm performance by maintaining financial flexibility.*

**Key words:** Financial flexibility, Investment, Investment Efficiency or Investment Scale and Firm Performance

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## 1. INTRODUCTION

Capital structure is composed of mixture of equity and debt. Firms with more equity financing are considered as financially flexible firms. These firms have reserved their borrowing power in order to respond to future unexpected events and growth opportunities. Financial flexibility could be explained as the firm's capability to respond to unforeseen expenses and profitable investment avenues which may arise in future. Gamba et al., (2005) described the term financial flexibility as the capability of a financial enterprise to get and restructure the required finance at minimum level of cost. Byoun, (2011) defined the term financial flexibility and tell that the financial flexibility is an enterprise capacity to mobilize its financial funds in reply to doubtful future contingencies. The top management in the world admitted or agreed that financial flexibility is crucial driver of capital structure (Harris, 2015). Here it should be necessary to discuss that financial flexibility is not new concept but it is not discussed as a first order determinant of financial policy. The concept of financial flexibility can also be described as the capacity of corporation to control negative income or cash shocks to take opportunity of efficient investment mean with the help of better financial flexibility the investment opportunity of firm can increase easily. As we know when firm can easily attain financial funds then the growth and investment opportunity increase automatically. When financial flexibility of firm increases then the financial values increase. This situation leads to minimum chances to adoption of bad capital and bad or poor an enterprise performance (Arslan-Ayaydin et al., 2014). And firms which are more financial flexible can easily attain financial debt in financial poor situations and management level of debt of those firms is high. Financial flexible firms can easily determine better and efficient capital structure of organizations. Financial flexibility firms can make better decisions requirements of capital structure.

There are three major sources of financing, internal financing, debts issuing and new equity. Pecking order theory (Myers and Majluf, 1984) signified that companies first prefer to generate financing with help of internal funds, then move to debt and at the last company issue new equity. So that this theory which relates to this study which indicates that the internal financed generation method is most suitable as compare to external financing. This theory describes that the internal financing is suitable for firm performance as compare to external financing. This theory maintains the hierarchy of financing in company and it is also beneficial for capital structure. Apparently, these theories suggested various kinds of funding sources and show the circumstances where firm can pick equity or debt as funding source. Nonetheless, those theories ignore the market situations and financing openings and market timing theory has been created

and it proposes that either firms should fund their venture with equity or debt dependent on economic situation (Powers and Tsyplakov, 2008). This make financial flexibility an important study field to confront the funding needs and resist in the firm crucial financing hour.

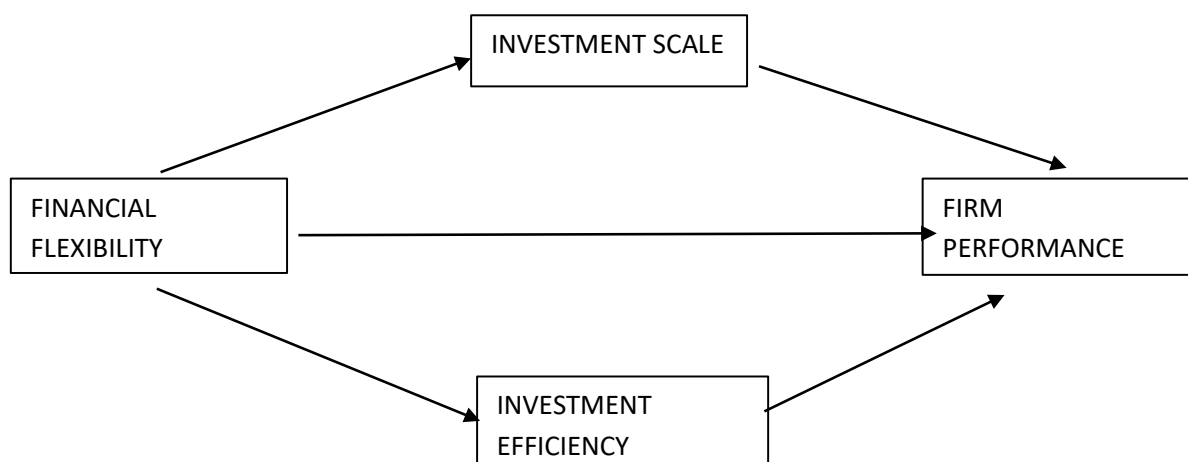
## 2. LITERATURE REVIEW

Financial flexibility (FF) means firms' capacity to get to and rebuild their financing with low exchange costs. This capacity causes it workable for firms to lessen the probability of financial trouble under the impacts of negative socks in incomes, to dodge expensive underinvestment, and to fund alluring projects in a timely and worth boosting way whenever such productive avenues emerge (Gamba and Triantis, 2008). The majority of senior corporate executives across the world were of the view that financial flexibility is one of the most significant determinant of their capital structure decisions (Graham and Harvey, 2001). Similar views were presented by (Bancel and Mittoo, 2011). Financial flexibility was of core concern for corporate executives and argued that firm's desire to maintain flexibility was a inevitable part of corporate financial policies. Denis and McKeon (2011) further supported that financial flexibility in shape of spare debt capacity played a significant job in decision on capital structure choices.

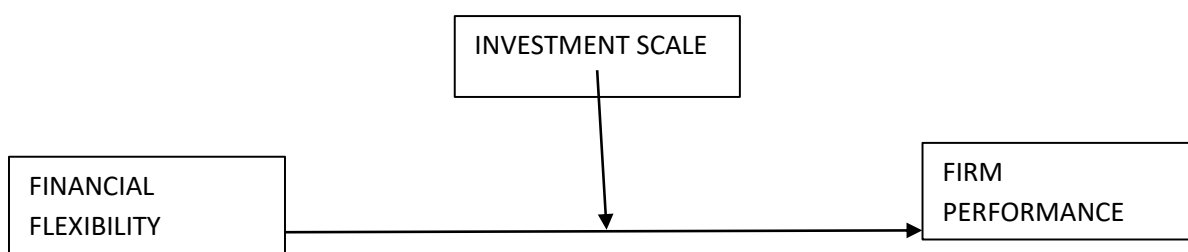
Harris (2015) analysed the relation between the financial flexibility calculated as a buyback of stock and the capital structure from period 1970-2013. The outcomes of the study showed that financial stability was one of the budgetary chiefs' higher factors in choosing the amount of the fixed commitment, and stock buyback enhanced flexibility. James (2016) studied the financial flexibility of firms in the pre, during and post crisis period of 2007/2008 and also analyzed how this crisis affected financially flexible and financially less flexible firms. Therefore, the results provided the evidence that the financial flexibility of firm's have been negatively affected by the global financial crisis. Firms have propensity to appropriate profits or reimburse obligation. All things considered, policy of dividend act as a tradeoff between maintaining flexibility and reduction of costs linked with the agency issue (Liu, 2017). Companies with higher financial flexibility value were prone to maintain the debt capacities, but it was possible that they may deliberately and temporarily deviate from their leverage ratios (Pendar et al., 2019).

Financial flexibility was negatively affected by the banking sector development, Inflation and institutional quality, while equity market development positively affected the flexibility. Moreover, Gross domestic product failed to the predict the financial flexibility (Mahmood et al., 2019) Ferrando and Mura, (2016) investigated the relation between financial flexibility and tendency of investment. The target of their study was to visualize whether financial flexibility leads to better and more investment. For the research purpose they have chosen European companies. Data under observation covered the period from 1993-2010. Regression with Generalized Method of Moments (GMM) techniques were applied for analysis. Findings showed that financial flexibility leads to better investment abilities. Moreover, financial flexibility value is high for private, younger and small firms. Further, companies in countries with weak legal protection system and underdeveloped capital market benefits more from flexibility by pursuing conservative leverage policy. Companies enjoying financial flexibility have larger investment expenditure and develop investment policies that are effective and pragmatic and reduce the level of over- and underinvestment (Cherkasova and Kuzmin, 2018).

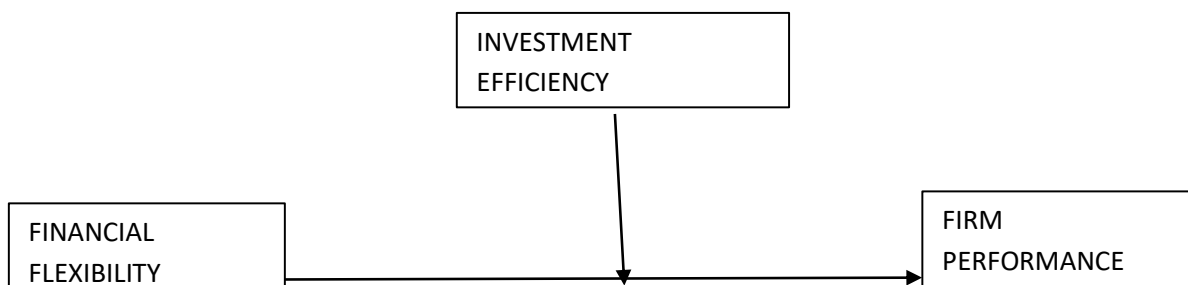
## 2.1 Conceptual Framework



**Figure 1** conceptual framework of dependent, independent and mediating variable



**Figure 2 (a)** conceptual framework of dependent, independent and moderating variable



**Figure 2 (b)** conceptual framework of dependent, independent and moderating variable.

## 3. METHODOLOGY

The current research work is composed of different parts; the fundamental target of the research is to explore the mediating and moderating role of investment efficiency and investment scale between financial flexibility and performance of firm for the period from 2013 to 2018. The population of the study composed of non- financial firms registered at Pakistan Stock Exchange from the period 2013 to 2018. Sample size of the study is 103 non-financial firms listed at PSX. All the data is of secondary in nature that is used in the current study. Data is gathered from audited financial statements, web server of PSX, official web site of SBP and Business Recorder. The purpose of the study is achieved by using suitable research methodology that constitutes data collection, analysis and interpretation. In order to examine either level of investment efficiency and investment scale are the important determinant driving the connection between financial flexibility and firm performance, the mediation and moderation will be testified. Mediation and moderation model suggested by the (Baron and Kenny 1986)

is used in the current study. In first instance direct relationship will be examined between performance and flexibility.

### 3.1 Dependent Variable

Dependent variable of the study is firm performance and the proxy used for it is return on assets which is measured with the ratio of profit to total assets that is return on total assets (ROA).

#### 3.1.1 Return on Asset

Return on assets indicates that how effectively an enterprise attain profits by using its assets mean how management of firms efficiently using firms assets. It is calculated by dividing net profit over total assets.

#### Formula

$$ROA = \text{Net Income} / \text{Total Assets}$$

### 3.2 Mediating and Moderating Variables

#### 3.2.1 Investment Scale (IS)

Improvement in production capacity of a firm is linked with the growth in non-cash assets and in this study investment scale is defined as non-cash assets growth as calculated by Ma et al 2015.

$$IS = \Delta(TA - \text{Cash}) / (TA - \text{Cash})_{t-1}, \text{ where } \Delta(TA - \text{Cash}) = (TA - \text{Cash})_t - (TA - \text{Cash})_{t-1} \dots (1)$$

TA stands for total assets.

#### 3.2.2 Investment Efficiency (IE)

Investment efficiency refers to optimal level of investment. It means suboptimal investment decisions are curtailed by minimizing the levels of over investment and under investment. For calculation of investment efficiency model used by Cherkasova and Kuzmin (2018) was deployed.

$$Inv_{it} = \alpha + \beta_1 Lev_{i,t-1} + \beta_2 Cash_{i,t-1} + \beta_3 MTB_{i,t-1} + \beta_4 Size_{i,t-1} + \beta_5 Ret_{i,t-1} + \beta_6 Inv_{i,t-1} \dots (2)$$

From the above equation residuals can shows the firm's degree of unexpected investment; positive residuals mean over-investment and negative means and under-investment. The reciprocal of the absolute values of residual is used as investment efficiency proxy in this study.

### 3.3 Independent Variable

In my study the independent variable is financial flexibility.

#### 3.3.1 Measuring of Financial Flexibility

The term financial flexibility means a company's capability to response unexpected earnings shortfalls and investment opportunities. Usually financial flexibility is determined by examining the company's capital structure as well as level of cash holdings. However, the precise measure of financial flexibility vary among analysts, researchers and investors.

Many existing studies used single and composite indicators, financial flexibility (FF) index Z, and others for measuring flexibility. The several variables used as proxies of financial flexibility were: leverage Billett et al., (2007), Denis and McKeon, (2017) (Marchica and Mura, 2010) cash holdings (Byoun, 2011) ;(Hoberg et al., 2014), fixed assets ratio (Poulsen et al., 2013) and others. In calculating financial flexibility, some of them used different variables. Like (Arslan-Ayaydin et al . , 2014), financial stability is calculated based on both debt and

cash holdings. (Bancel and Mittoo, 2011) calculated Z-score Financial Flexibility (FF) by using Altman Z score weights:  $Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4$ .

In this study the index anticipated by (Ma et al., 2015) is used for measuring financial flexibility.

$$FFI=0:44A+0:49P+ 0:07L.....(3)$$

In the above equation A denotes the level of cash holdings and explained in the table 3.1. P denotes the potential cash inflows which can be generate by utilizing untapped borrowing power measured as one minus debt ratio. L in the equation 2 denotes to the financial health measured by Altman Z score. The formula of Z-score is:  $Z = 1.2T1 +1.4T2 +3.3T3 +0.6T4 +0.999T5$ .

### 3.4 Control Variables

Considering the literature, firm’s size natural log of total assets (Baños-Caballero et al., 2016) and leverage measured by dividing the total liabilities to total assets are used as control variables.

**Table 1** Summary Table for proxies used

Variables	Symbol	Description
Return on assets	ROA	Ration of net profit to total assets
financial flexibility	FFI	$FFI=0:44A+0:49P+ 0:07L$
Leverage	LEV	Total debt book value divided by total assets book value.
Market-to-Book value	MTB	Ratio determined as assets book value plus equity market value minus equity book value over assets book value.
Firm size	SIZE	Natural log of total assets
Return	Ret	Annual stock return, calculated as the change in the market capitalization of the company in two periods
Cash Holdings	Cash	Cash assets plus and short-term investments over total assets
Investment	Inv	Ratio of the net changes in property, plant and equipment with the addition of the maintenance costs to the total assets
Investment scale	IS	The growth rate of non-cash assets.
Financial health	L	Altman Z Score
WC Ratio	T1	Working Capital divided by total assets.
Retained earnings ratio	T2	Retained Earnings over total assets.
EBIT ratio	T3	Operating profit divided by total assets.
Equity to debt ratio	T4	Market value of equity divided by total liabilities.
Sales Ratio	T5	Sales over total assets.

### 3.5 Econometric Model

For the panel data the general model is as under:

$$Y_{it} = a_0 + \beta_1 X_{it} + \mu_{it} \dots \dots \dots (6)$$

The econometric model of the study is as under:

- **Impact of Financial Flexibility on Firm Performance**

$$ROA_{it} = \alpha_{it} + \beta_1 FFI_{it} + \beta_2 Size_{it} + \beta_3 Lev_{it} + \varepsilon_{it} \dots \dots \dots (7)$$

ROA = Firm performance (Return on assets)

$\alpha_{it}$  = Slope intercept

FFI = financial flexibility

Size = Firm size

Lev = Leverage

**• Impact of Financial Flexibility on Investment Scale**

$$IS_{it} = \alpha_{it} + \beta_1 FFI_{it} + \beta_2 Size_{it} + \beta_3 Lev_{it} + \varepsilon_{it} \dots \dots \dots (8)$$

$FFI_{it}$  = Financial Flexibility

$\alpha_{it}$  = Slope intercept

IS = Investment scale

Size = Firm size

Lev = Leverage

**• Impact of Investment Scale on Firm Performance**

$$ROA_{it} = \alpha_{it} + \beta_1 IS_{it} + \beta_2 Size_{it} + \beta_3 Lev_{it} + \varepsilon_{it} \dots \dots \dots (9)$$

ROA = Firm performance (return on assets)

$\alpha_{it}$  = Slope intercept

IS = Investment scale

Size = Firm size

Lev = Leverage

**• Impact of Financial Flexibility on Investment Efficiency**

$$IE_{it} = \alpha_{it} + \beta_1 FFI_{it} + \beta_2 Size_{it} + \beta_3 Lev_{it} + \varepsilon_{it} \dots \dots \dots (10)$$

$FFI_{it}$  = Financial Flexibility

$\alpha_{it}$  = Slope intercept

E = Investment efficiency

Size = Firm size

Lev = Leverage

**• Impact of Investment Efficiency on Firm Performance**

$$ROA_{it} = \alpha_{it} + \beta_1 IE_{it} + \beta_2 Size_{it} + \beta_3 Lev_{it} + \varepsilon_{it} \dots \dots \dots (11)$$

ROA = Firm performance (return on assets)

$\alpha_{it}$  = Slope intercept

IE = Investment efficiency

Size = Firm size

Lev = Leverage

**• Mediating role of Investment Scale between Financial Flexibility and Firm Performance**

$$ROA_{it} = \alpha_{it} + \beta_1 FFI_{it} + \beta_2 IS_{it} + \beta_3 Size_{it} + \beta_4 Lev_{it} + \varepsilon_{it} \dots \dots \dots (12)$$

ROA = Firm performance (Return on assets)

$\alpha_{it}$  = Slope intercept

FFI = Financial flexibility

IS = Investment scale

Size = Firm size

Lev= Leverage

- **Mediating role of Investment Efficiency between Financial Flexibility and Firm Performance**

$$ROA_{it} = \alpha_{it} + \beta_1 FFI_{it} + \beta_2 IE_{it} + \beta_3 Size_{it} + \beta_4 Lev_{it} + \varepsilon_{it} \dots \dots \dots (13)$$

ROA = Firm performance (Return on assets)

$\alpha_{it}$  = Slope intercept

FFI= Financial Flexibility

IE= Investment efficiency

Size = Firm size

Lev= Leverage

- **Moderating role of Investment Scale between Financial Flexibility and Firm Performance**

$$ROA_{it} = \alpha_{it} + \beta_1 FFI_{it} + \beta_2 IS_{it} + \beta_3 FFIS_{it} + \beta_4 Size_{it} + \beta_5 Lev_{it} + \varepsilon_{it} \dots \dots \dots (14)$$

ROA = Firm performance (Return on asset)

$\alpha_{it}$  = Slope intercept

FFI= Financial Flexibility

IS = Investment scale

Size = Firm size

Lev= Leverage

FFIS= Interaction of investment scale and financial flexibility

- **Moderating role of Investment Efficiency between Financial Flexibility and Firm Performance**

$$ROA_{it} = \alpha_{it} + \beta_1 FFI_{it} + \beta_2 IS_{it} + \beta_3 FFIE_{it} + \beta_4 Size_{it} + \beta_5 Lev_{it} + \varepsilon_{it} \dots (15)$$

ROA = Firm performance (Return on assets)

$\alpha_{it}$  = Slope intercept

FFI= financial Flexibility

IS = Investment scale

IE= Investment efficiency

Size = Firm size

Lev= Leverage

## 4. RESULTS AND DISCUSSION

Descriptive statistics, correlation and panel data models techniques were used in or order to identify the mediating and moderating role of investment efficiency and investment scale between financial flexibility and firm performance on manufacturing companies in Pakistan.

### 4.1 Descriptive Analysis

Descriptive statistics results are presented in table 4.1. The results consist of range, minimum, maximum, mean, standard deviation, and variances values of all dependent, independent, controlling and mediating and moderating variables that are engaged in current study.



**Table 2** Descriptive Statistics

Variable	Range	Min.	Max.	Mean	Std. Deviation	Variance
ROA	1.1102	-0.7821	0.3281	0.0287	0.0710	0.0050
FFI	3.6576	-1.1330	2.5246	0.5213	0.3798	0.1442
IS	12.0257	-0.3752	11.6505	0.1368	0.5042	0.2542
IE	0.0003	0.0000	0.0003	0.0000	0.0000	0.0000
SIZE	8.1408	12.1767	20.3175	16.4734	1.4939	2.2317
LEV	2.7433	0.0703	2.8137	0.5296	0.2849	0.0812
FFIS	8.7175	-0.5259	8.1915	0.0780	0.3478	0.1210
FFIE	0.0001	0.0000	0.0001	0.0000	0.0000	0.0000

The dependent variable of the study is return on assets (ROA). The minimum value of the dependent variable ROA is -0.7821 and maximum value is 0.3281, which indicates there is existence of data between two values. The value of mean of ROA is 0.0287 and standard deviation is 0.0710. The low value of standard deviation of ROA depicts that there is low volatility. The independent variable of the study is financial flexibility (FFI). The minimum value of the independent variable FFI is -1.1330 and maximum value is 2.5246, which indicates there is existence of data between two values. The value of mean of FFI is 0.5213 and standard deviation is 0.3798.

**Table 3** Correlation Matrix

Variable	ROA	FFI	IS	IE	SIZE	LEV	FFIS	FFIE
ROA	1							
FFI	.531**	1						
IS	0.054	0.035	1					
IE	-0.020	0.004	-0.005	1				
SIZE	.177**	-0.043	-0.060	-.080*	1			
LEV	-.489**	-.691**	-0.075	-0.018	0.048	1		
FFIS	0.020	.115**	.970**	0.004	-.099*	-.084*	1	
FFIE	0.035	.127**	0.010	.927**	-0.077	-.090*	0.037	1

\*\* Significant at  $p < 0.01$  level

\* Significant at  $p < 0.05$  level

The reported correlation results are quite interesting and stated that the return on assets (ROA) have significant positive correlation of 0.531 at 0.01 level of significance with the financial flexibility. Similarly ROA is positively correlated with investment scale with r value of 0.054, which means that both moves in same direction. It shows that as the investment increases it will positively affects the performance. However the relation is not significant due to lower correlation value. ROA shows negative correlation with the investment efficiency but the association is not significant as the value of correlation is -0.02.

**Table 4A** Impact of Investment Efficiency on Firm Performance

DV: ROA				
Variable	Coef.	Std. Error	t-Stat	P.value
C	-0.061961	0.02725	-2.273832	0.0233
IE	-53.18719	141.7234	-0.375289	0.7076
SIZE	0.009507	0.001635	5.815419	0.00**
LEV	-0.124167	0.008547	-14.52817	0.00**
R <sup>2</sup>	0.279177	Adjusted R		0.275655
F-stat	79.26813	Prob(F-stat)		0

\*\* At  $p < 0.01$  level of significant

\* At  $p < 0.05$  level of significant

The coefficient of the investment efficiency depicts that one unit increase in investment efficiency will cause to decrease firm performance. The negative sign expresses that there is inverse interaction between investment efficiency and firm execution. In addition, the model is insignificant. The beta value of the size of firm highlights that one unit increase in size of firm will cause to enhance firm performance. The value of the coefficient of the leverage will cause to reduce the firm performance owing to one unit increase in leverage. However, as a whole the model is insignificant for inference purposes as the relation is observed between investment efficiency and firm performance.

### Fixed Effect Model

**Table 4B** Impact of Investment Efficiency on Firm Performance

<b>Dependent Variable: ROA</b>				
<b>Fixed Effect Model</b>				
<b>Variable</b>	<b>Coef.</b>	<b>Std. Error</b>	<b>t-Stat</b>	<b>P. value</b>
C	-0.105434	0.134412	-0.7844	0.4332
IE	-66.82027	120.2138	-0.5558	0.5786
SIZE	0.010974	0.008166	1.34389	0.1796
LEV	-0.087629		0.01629	0.00**
R <sup>2</sup>	0.636182	Adjusted R <sup>2</sup>		0.561571
F-stat	8.52665	P(F-stat)		0

\*\*At p<0.01 level of significant

\* At p<0.05 level of significant

### Random Effect Model

**Table 4C** Impact of Investment Efficiency on Firm Performance

<b>D.V: ROA</b>				
<b>Variable</b>	<b>Coef.</b>	<b>Std. Error</b>	<b>t-Stat</b>	<b>P.value</b>
C	-0.070426	0.045032	-1.56391	0.1184
IE	-61.26942	117.9853	-0.5193	0.6037
SIZE	0.009551	0.002712	3.522095	0.005*
LEV	-0.109492	0.011522	-9.50255	0.00**
R <sup>2</sup>	0.140308	Adjusted R <sup>2</sup>		0.136107
F-stat	33.40297	P(F-stat)		0

\*\*At p<0.01 level of significant

\* At p<0.05 level of significant

Model 1( $\beta = 0.0698$ ,  $p$  (sig.) = 0.0000) expressed that financial flexibility is a determinant of performance of firm. It means that flexible companies have better firm performance than non-flexible ones. The present study findings are concurrent with the outcomes of (Ma et al., 2015) (Chang and Ma, 2019); (Mahmood et al., 2019); (Ayaydin et al., 2014) that financial flexibility leads towards better firm performance.

**Table 5A** Impact of Financial Flexibility on Firm Performance under the influence of Investment Scale

Dependent Variable: ROA				
Variable	Coef.	Std. Error	t-Stat	P.value
C	<b>-0.138941</b>	<b>0.027296</b>	<b>-5.09021</b>	<b>0.00**</b>
FFI	0.070044	0.008396	8.342349	0.00**
IS	0.004948	0.004594	1.076965	0.2819
SIZE	0.009818	0.001548	6.343993	0.00**
LEV	-0.059041		0.011219	0.00**
R <sup>2</sup>	0.35325	Adjusted R <sup>2</sup>		0.34903
F-stat	83.70405	P(F-stat)		0

\*\*At p<0.01 level of significant

\* At p<0.05 level of significant

In table 5A the coefficient of the financial flexibility depicts that one unit increase in financial flexibility will cause to increase firm performance by 0.07 unit. The positive sign expresses that there is direct relation between firm performance and financial flexibility.

The positive sign revealed that the connection between investment scale and firm output is positive.

**Table 5B** Impact of Financial Flexibility on Firm Performance under the influence of Investment Scale

Dependent Variable: ROA				
Variable	Coef.	Std. Error	t-Stat	P.value
C	-0.135881	0.025831	-5.260397	0.00**
FFI	0.101179	0.008745	11.57039	0.00**
IS	0.169606	0.019805	8.56386	0.00**
SIZE	0.007621	0.001487	5.125025	0.00**
LEV	-0.033382	0.011035	-3.025096	0.002**
FFIS	-0.246224	0.028893	-8.521864	0.00**
R <sup>2</sup>	0.421855	Adjusted R <sup>2</sup>		0.4171
F-stat	89.31157	Prob(F-stat)		0

\*\*At p<0.01 level of significant

\* At p<0.05 level of significant

The coefficient of the financial flexibility depicts that one unit increase in financial flexibility will cause to increase firm performance by 0.101 unit. This shows that investment scale moderate the effect of financial flexibility towards performance of firm. Hence it can be deduced that investment scale is a moderator between financial flexibility and performance of firm.

## Fixed Effect Model

**Table 5C** Impact of Financial Flexibility on Firm Performance under the influence of Investment Scale

<b>D.V: ROA</b>				
<b>Variable</b>	<b>Coef.</b>	<b>Std. Error</b>	<b>t-Stat</b>	<b>P.value</b>
C	-0.08162	0.13291	-0.6140	0.5394
FFI	0.071019	0.01181	6.00939	0.00**
IS	0.108649	0.01978	5.49246	0.00**
FFIS	-0.155907		0.02879	0.00**
SIZE	0.005048		0.00804	0.5306
LEV	-0.023697		0.01826	0.1952
R <sup>2</sup>	0.669319	Adjusted R <sup>2</sup>		0.59994
F-stat	9.647382	Prob(F-stat)		0

\*\*At p<0.01 level of significant

\* At p<0.05 level of significant

In table 5C the coefficient of the financial flexibility depicts that one unit increase in financial flexibility will cause to increase firm performance. This shows that investment scale moderate the effect of financial flexibility towards performance of firm. Therefore, the investment scale can be deduced as a moderator between financial flexibility and firm efficiency. Here under the fixed effect model R-squared value is high as compared to the value under the common constant model.

## Random Effect Model

**Table 5D** Impact of Financial Flexibility on Firm Performance under the influence of Investment Scale

<b>D.V: ROA</b>				
<b>Variable</b>	<b>Coef.</b>	<b>Std. Error</b>	<b>t-Stat</b>	<b>P.value</b>
C	-0.130105	0.037207	-3.4968	0.0005
FFI	0.086393	0.009586	9.0125	0.00**
IS	0.128475	0.018322	7.0122	0.00**
FFIS	-0.18496	0.026713	-6.9239	0.00**
SIZE	0.007878		0.00218	0.00**
LEV	-0.036124		0.01298	0.005**
R <sup>2</sup>	0.28105	Adjusted R <sup>2</sup>		0.275176
F-stat	47.84828	Prob(F-stat)		0

\*\*At p<0.01 level of significant

\* At p<0.05 level of significant

In table 5D the coefficient of the financial flexibility depicts that one unit increase in financial flexibility will cause to increase firm performance by 0.086 unit. The positive sign expresses that there is positive connection between investment scale and firm performance. Moreover, the model is significant as value of probability value is 0.0000 which is lower than 0.05.

**Table 6A** Impact of Financial Flexibility on Firm Performance under the influence of Investment Efficiency

<b>D.V: ROA</b>				
<b>Variable</b>	<b>Coef.</b>	<b>Std. Error</b>	<b>t-Stat</b>	<b>P.value</b>
<b>C</b>	<b>-0.135382</b>	<b>0.027324</b>	<b>-4.95465</b>	<b>0.00**</b>
FFI	0.069795	0.008402	8.307021	0.00**
IE	-38.11657	134.4841	-0.28343	0.7769
SIZE	0.009688	0.001551	6.2446	0.00**
LEV	-0.059936		0.0112	0.00**
R <sup>2</sup>	0.352111	Adjusted R <sup>2</sup>		0.347884
F-stat	83.28755	P(F-stat)		0

\*\*At p<0.01 level of significant

\* At p<0.05 level of significant

In table 6A the coefficient of the financial flexibility depicts that one unit increase in financial flexibility will cause to increase firm performance by 0.0697 unit. The positive sign expresses that there is direct relation between firm performance and financial flexibility.

**Table 6B** Impact of Financial Flexibility on Firm Performance under the influence of Investment Efficiency

<b>D.V: ROA</b>				
<b>Variable</b>	<b>Coef.</b>	<b>Std. Error</b>	<b>t-Stat</b>	<b>P.value</b>
<b>C</b>	<b>-0.13666</b>	<b>0.02737</b>	<b>-4.993089</b>	<b>0.00**</b>
FFI	0.071893	0.008747	8.219421	0.00**
IE	266.8218	377.3379	0.707116	0.4798
SIZE	0.009694	0.001552	6.247595	0.00**
LEV	-0.059445	0.011221	-5.297487	0.00**
FFIE	-684.0094	790.8043	-0.864954	0.3874
R <sup>2</sup>	0.352902	Adjusted R <sup>2</sup>		0.347616
F-stat	66.75229	P(F-stat)		0

\*\*At p<0.01 level of significant

\* At p<0.05 level of significant

The coefficient of the financial flexibility depicts that one unit increase in financial flexibility will cause to increase firm performance by 0.0718 unit. The positive sign expresses that there is direct relation between firm performance and financial flexibility.

## Random Effect Model

**Table 6C** Impact of Financial Flexibility on Firm Performance under the influence of Investment Efficiency

<b>Dependent Variable: ROA</b>				
<b>Variable</b>	<b>Coef.</b>	<b>Std. Error</b>	<b>t-Stat</b>	<b>P.value</b>
<b>C</b>	<b>-0.137776</b>	<b>0.043109</b>	<b>-3.19597</b>	<b>0.001**</b>
FFI	0.062785	0.009789	6.413862	0.00**
IE	282.7295	324.0167	0.872577	0.3832
FFIE	-764.3052	678.7886	-1.12598	0.2606
SIZE	0.010038		0.002516	0.000**
LEV	-0.058903		0.013666	0.00**
R <sup>2</sup>	0.202728	Adjusted R <sup>2</sup>		0.196215
F-stat	31.12355	P(F-stat)		0

\*\*At p<0.01 level of significant

\* At p<0.05 level of significant

The coefficient of the financial flexibility depicts that one unit increase in financial flexibility will cause to increase firm performance by 0.062 unit. The positive sign expresses that there is direct relation between firm performance and financial flexibility. This shows that investment efficiency does not moderate the effect of financial flexibility towards firm performance. Hence it can be deduced that investment efficiency is not a moderator between FF and performance of firm.

## 5. CONCLUSION

Study aimed to investigate the influence of financial flexibility upon performance of firms with investment scale and investment efficiency as the mediating and moderating variable. The moderator-mediator model of Baron and Kenny 1986 was used for the identification of the mediation and moderation. The findings showed that there is a direct relation between financial flexibility and of firm performance. Financial flexibility is positively influencing the performance. On the other hand, mediation of investment scale and efficiency is not observed between performance and flexibility. However, it was observed that investment scale played the role moderator between performance and financial flexibility. Investment efficiency failed to moderate between performance and flexibility. In the end, it can be concluded that financially flexible firms have better performance than that of non-financially flexible firms.

## 6. FURTHER DIRECTION

This examination is conducted on the chosen manufacturing firms registered on Pakistan Stock Exchange. The outcomes of this investigation proposed that future investigation of interaction among financial flexibility, investment and firm monetary execution can be performed on singular parts of the economy. Future researchers should perform this examination to make a connection between Pakistan's financial and non-financial firms. In addition, this research may also be coordinated to carry out cross-country investigations with several other manufacturing companies. Future examinations ought to be directed to recognize the impact of financial flexibility on firm performance with investment as the intervening variable utilizing large sample size and longer timespans. Therefore, it is suggested that corporate managers should maintain financial flexibility as it is a tool for enhancing the performance.

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Mediating and Moderating Role of Investment Efficiency and Investment Scale between Financial Flexibility and Firm Performance: Evidence from Non-Financial Sector of Pakistan

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