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Firm, Industry and Macroeconomics Dynamics of Stock Returns: A Case of Pakistan Non-Financial Sector

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Abstract: The available research literature on stock performance has primarily stressed the importance of asset price theories, macroeconomic and microeconomic, and institutional differences. However, there is still an open question: Are there any other factors those influence stock performance? This research aims to answer this question by providing new insights into industry factors along with country-level and firm-specific factors in conjunction with the stock performance of the non-financial sector firms listed at the Pakistan Stock Exchange. The study provides new insights into the prevailing research literature by considering an emerging economy, Pakistan. We find that non-financial sector firms are heterogeneous, suggesting applying a fixed effect approach for reliable estimation. To investigate the issue, data from 80 companies spanning 17 years (2004–2020) were analyzed with a fixed-effect model. Our study results revealed that firm tangibility, munificence, gross domestic product, inflation and money supply have negative, while size, growth, dynamism, Herfindahl–Hirschman index, exchange rate and oil prices have a positive relationship with financial performance. The results are robust under alternative estimation approaches and offer useful policy implications.

Keywords: stock returns; growth; industry; macroeconomics dynamics; non-financial sector

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1. Introduction

The securities exchange market is an extensively researchable point of economics and finance. The financial analysts preferred area of research is to forecast the trends of stocks. The demand and supply forces fluctuate prices of different stocks (Al-Shubiri 2010). People's desire to purchase companies' shares is treated as demand, and the number of shares companies provide to the peoples has been considered as supply. By keeping the investment goal in mind, both the seller and buyer got significant information about targeted firms and the industry in which firms operate (Palepu et al. 2007). Ologunde et al. (2007) said that securities exchange effectuates it for the economy to pursue enduring dedications in real capital. At the time of deciding to buy or trade stocks of any firm, its economic health is first taken into consideration. As stated by Palepu et al. (2007), analysis of the potential of the entire industry is an essential facet of the company. As an industry under which different firms work to make substantial impacts on their operations and policies too. Additionally, the securities' performance is perceived to be reliant on external forces, such as country-specific factors, future growth expectation of the market, social and political distresses, fiscal plans and monetary plans, global riches etc. Fostered attentiveness to this extent is because the economic theory considers stock prices a vigorous measure of

fluxes in economic events. To analyze the stock performance with a firm-level perspective is an important area to research. Numerous studies Tseng et al. (2007), Lu et al. (2010) provided a positive association of firm-specific factors and stock performance, whereas researchers like Cubbin and Leech (1986); Kalantaridis and Levanti (2000), Poff and Heriot (2005) reported it as an opposite association. Several researchers like Amato and Wilder (1985), Senthilkumar (2009) proposed no relation. In the existing literature, we cannot draw any clear picture of this relationship. So, in this specific study, we are trying to address this unclear streak of relativity in the context of the economic markets of Pakistan. According to most of above-mentioned researchers, this field of study is mostly focused on developed countries. The impact of macroeconomic indicators on stock performance is important to investigate for both developed and emerging countries (Naveed et al. 2015). The essence of the relationship of macroeconomic factors in emerging and developing markets varies from the results in developed markets because financial markets in such economies as Pakistan differ from those in developed markets, where governance and control are weak, and there is inadequate disclosure. It is acknowledged that developing markets in Asian countries have high information asymmetries and market imbalances, such as less regulatory protection for investors and transparency processes (Tseng et al. 2007). The potency of the industry is a key part of the evaluation of the company's performance for the reason that the industry under which the firm works make significant effects on the procedure and policies of the company (Palepu et al. 2007). Hence, in conjunction with firm-specific factors, sector/industry-specific factors are equally imperative to study. In this study, textile and food & personal care products (F&PCP) were studied to explore industry influence on stock performance. Pakistan's textile industry plays a critical role in the country's exports (Ahmed 2008). Pakistan is the eighth-largest textile exporter in Asia. This sector contributes 8.5 percent of the overall GDP. It hires about 15 million people (Ahmed 2008). Macroeconomic forces and stock market outcomes have been researched by researchers over the ages and existing recognized literature on this aspect, but even now this is an open-ended matter that the country-specific factors or macroeconomic forces impact stock performance or not. Despite all the aspects of share prices, some received enhanced consideration of scholars is country or macroeconomic dynamics since the economical stance is realized via these country-specific aspects. Therefore, country-specific aspects are key components for the valuation of stock performance. In the literature, limited formal studies are existing those making use of the sectors specific factors equally for economies of developed nations as well as economies of developing/emerging nations, the available research are pertinent to the debt/equity structure of companies none of the studies attained relevant to stock performance. Kayo and Kimura (2011) stated that research stance of previous literature overlooks the significance of sector-specific factors only a few formal studies are available those employed the industry as dummy; however, those exercises do not portray the reliable portrayal of specific sectors effect. Summarizing the above arguments lead us to the following research questions. How do different firm-level, industry-level and country-level factors influence firm's stock performance of PSX listed firms of textile and F&PCP sector? Thus, the main objective of the study is to answer this question by providing perceptiveness of industry factors along with country and firm specific aspects concurrence to financial performance of the non-financial sector firms listed at PSX. FEM employed for empirical analysis of 17 years (2004–2020) secondary data for 80 PSX listed firms.

The rest of the paper is organized as follows: Section 2 discusses a variable-wise literature review. Section 3 presents data and methods with diagnostic tests and estimation models. Section 4 is the results and discussion. The final part is about the conclusion, limitations, and future research.

2. Literature Review

This section highlights various researchers' and scholars' perspectives on how firm, industry, and country-level aspects influence stock performance. Various theories and perspectives related to stock performance, with an emphasis on the firm level, industry-level, and country-level factors explored. Following a thorough analysis of the literature on stock performance related to company, industry, and country-level aspects, this section developed the conceptual and theoretical basis for the research. In the following sections, the variable-wise research literature is discussed.

2.1. Firm-Specific Factors

Size effects primarily documented by scholars like Banz (1981) far ahead researcher like Brown et al. (1983), Blume and Stambaugh (1983) established these effects. Studies that support a negative correlation between size and stock performance were (Morgan and Thomas 1998; Chan et al. 1991; Banz 1981; Fama and French 1992). Moreover, some other scholars like Gunarathna (2014), Al-Qudah (2012), Anuradha (2007), Mcmanus et al. (2004) also established a negative relationship by providing the reasons that stockholders of bigger firms suppose lower returns on their investment compared to the stockholders of smaller firms because bigger firms are considerably better diversified, retaining rapid entrance to financial markets thus tolerate less risk comparatively from smaller firms. Prabowo and Sunarto (2016), Senthilkumar (2009), Luk et al. (2008) studied the firm size and return relation. They described that firm size showing an insignificant correlation towards stock performance.

As for the tangibility concern, it is convenient for firms to exploit intangible assets progressively. Li et al. (2014) said that intangible and tangible asset has an inconsistent association with stock performance. Various variables promote a firm's scope to get external financing. To some extent, tangibility is one such variable. It increases investment when companies have weak entry to loan/credit (Almeida and Campello 2007). Meanwhile, additional tangible assets accept more external funding, such assets lower contractibility snags. The firm's tangibility increases the firm's worth and uses this tangibility encouragingly to transmit outlay and cash-flow sensitivity of the firm. Skoogh and Swärd (2015), Hoque et al. (2014) presented a positive association between tangibility and firm worth. Kodongo et al. (2015) reported a negative association between assets tangibility and firm value. The inconsequential conclusions of tangibility and stocks reported by (Prabowo and Sunarto 2016).

Many researchers like Li et al. (2008), Gomes et al. (2003), Berk et al. (1999), Cochrane (1996) furnished the hypothetical provisions for an inverse link between firm assets growth and stock performance. The methodical reduction in risk consequential from growth adoptions influences a negative relationship between capital outlay and returns. Economists define risk as to the presence of uncertainty regarding possible results (Dvorský et al. 2018; Oláh et al. 2019b; Oláh et al. 2019a). Gray and Johnson (2011), Yao et al. (2011), Lipson et al. (2011), Cooper et al. (2008) studied assets growth with stock performance association. They conclude the total firm's asset is a greater computation of stock performance than numerous single growth factors.

The investigation of firm-level variables and stock performance is an active area of research. Numerous studies like Lu et al. (2010); Tseng et al. (2007) found a positive association, while others Cubbin and Leech (1986), Kalantaridis and Levanti (2000), Poff and Heriot (2005) found a negative relationship. In addition, some suggested that there was no relationship (Senthilkumar 2009; Amato and Wilder 1985). A review of the extant literature reveals no clear picture of this relationship, which leads to the explorations of these aspects of stock performance and provide empirical evidence with different context and settings.

2.2. Industry Level Factors

The concept of the environment's munificence explained as a parameter that can support constant growth is identical to Aldrich's notion of an environment's capacity (Starbuck 1976). They both reasoned that companies trace settings that help them in growth and stability. Such growth and stability probably let the companies yield affordable resources and utilized them (Cyert and March 1963). The study of Dess and Beard (1984) stated that the environment's competence to sustain an insistent rise is termed munificence. Referring to Ramakrishnan (2012), industries/sectors consequently took advantage of more productivity as a result of a rarer moderate setting. Hereafter, even using these directives, the sector's effect is observable, as businesses yield higher earnings; those reside in industries with an excessive degree of industry munificence. Only a few researchers used munificence as an element of leverage. In the existing body of literature there are rare studies those incorporates sector specific aspects relative to stock performance. Researchers like Kayo and Kimura (2011) specified that on firm-level, twin hypothetical methodologies contend estimates provided roughly the influence of company productivity on leverage. "Pecking order theory" provides backing to negative/inverse linkage in between firm productivity and leverage, although the "tradeoff theory" cares about favorable/positive linkage. Accordingly, Dess and Beard (1984), Simerly and Li (2000) in view that positive linkage of munificence with stock performance is following "tradeoff theory" and negative affiliation with "pecking order theory".

Commonly, the environment's dynamism describes ratio and variableness in a company's external environment. We assume that high dynamism produces further uncertainty; henceforth, it cuts down leverage level, influencing the stock market prices and eventually stock returns. Consequently, firms operating beneath dynamic settings may tend to use equity funding to reduce the operation cost arising from improved risk levels. Alternatively, companies working under a setting with a lower level of dynamism have a tendency to focus on debt or credit financing. In their study about emerging markets, Kayo and Kimura (2011) initiate a progressive and inconsequential linkage of leverage and dynamic environment. As specified by Simerly and Li (2000), the encouraging of association between leverage and company stocks works under a stable environment. Settings under those businesses are operating, in turn, shaken firms operating under "parallel industry" and are exposed to systematic risk. Predictably, highly increased dynamism produces extra uncertainty, which influences the stock performance also.

The concentration of industry can be categories as "high concentration" and "low concentration" industries. As per the Moeinaddin et al. (2013), the most vigorous index/measure for the industry/sector-specific concentration is HHI "Herfindahl–Hirschman index". It is an efficient and broad index to gauge the level of the concentration of industry. Almazan and Molina (2005) stated in relation to their appearances, both sorts of industries significantly differ. Basically, low-level concentration industries also termed "competitive industries", are exposed to greater risk and extreme variability in profits; hereafter, they achieve a low level of leverage. As Naveed (2015) stated, in contrast, extra "concentrated industries" use additional leverage levels as they are higher profitable, uniform and less exploited to the risk and its dispersion. In their empirical study, Hou and Robinson (2006) stated that concentrating industry and typical stock performance by specifying that companies under the "highly concentrated" industry yields lesser risk-bearing stock performance paralleled to the companies under the category of lower concentrated industry. Finalized with the argument that is encouraging association of industry concentration and stock performance. As stated by Gaspar and Massa (2006), US companies operating in "competitive industries" have excessive flux in their stocks in the market and securities holders need additional returns as compensation for their investment.

The existing body of literature pertinent to industry-level factors is not as wide as firm and country-level factors. Thus, only a few of the studies available address the industry-level factor, e.g., munificence, dynamism, and HHI; hence, the relationship's direction is

not well established. This study provides an addition to existing literature pertinent to industry-level factors.

2.3. Country-Level Factors

Gross domestic product is well-known for its utilization as a gauge of a country's economic state's performance, and there is an adjacent and vital connection between the gross domestic product and stock performance. Naveed (2015) stated that Gross Domestic Product is driven as a device to weigh the intensity and flaws of numerous segments of the economy. The drive of GDP provides the signal for by and large economic state of the country. Studies in literature specified that actual economic pursuit carries an encouraging affiliation with stocks. Olasumbo (2012), Chen et al. (1986), Fama (1981) specify that the association between stock market performance and GDP is significantly positive. The studies of Ramadan (2016), El-Nader and Alraimony (2012), Zaman et al. (2012), Singh et al. (2011), Hassapis and Kalyvitis (2002) also back this positive linkage. This association is possible for the reason that expected economic progress and the cost of capital. But, Lee and Tan (2006) disclose that GDP is negatively connected to performance in Malaysia. Kirui et al. (2014), Muhammad et al. (2009) said that GDP is irrelevant in the explanation of share performance.

The results of inflation towards stock market performance both in a theoretical sense and empirical sense are doubtful. Researchers like Ouma and Muriu (2014), Apergis and Payne (2011), Adam and Tweneboah (2008), Ratanapakorn and Sharma (2007) have demonstrated that stock returns and inflation encouragingly linked, stating that stock serves as a shield towards inflation. In opposition, Erdugan (2012) clarified that stock prices and inflation are positively linked because companies evade their common stocks contrary to inflation as shares/stocks indicate the possession of factual assets. As per Bodie (1976), the securities market provides managed hedging strategies to sidestep the inflation effect. The debate that the securities market manages hedging strategies for inflation is based on the Fisher Effect. The Fisher Effect cleared in a long period; the nominal rate of interest moves along with inflation. Further proposes that more inflation will increase nominal stock performance. In the existing body of literature, studies like El-Nader and Alraimony (2012), Ramadan (2016), Mukherjee and Naka (1995), Sagarika and Harminder (2012), Pal and Mittal (2011), Fama (1981) have employed inflation. These research studies resulted in inflation, and stock returns are relating in a negative way. But Tursoy et al. (2008), Zaheer and Rashid (2014), Kirui et al. (2014), Butt et al. (2010), Ozturk and Acikalin (2008) disclosed that not any noteworthy pricing relationship between the stock performance and inflation.

Huang et al. (1996) outline the theoretical linkage of oil prices and stock performance using economic linkages at the overall level. As described by Narayan and Sharma (2014), Filis (2010), Driesprong et al. (2008), Park and Ratti (2008), the influences of crude oil price changes on stock performance. Results indicate a negative impression of crude oil price changes on securities returns. Oil price variations contrarily impact the different industries by inspecting 20 industries for this drive and concluded that changes in oil prices impact different sectors (Liao and Chen 2008). However, Çiftçi (2014), Narayan and Sharma (2014), Gjerde and Sættem (1999) considered the relationship between share performance and oil prices positive. While Zaman et al. (2012), Gay (2008), Chen et al. (1986) stated, oil prices do not seem to have any considerable effect on stock performance.

The exchange rate is explained as the amount of specified currency is replaced for getting another currency. Geske and Roll (1983) stated that the exchange prices had been considered as infector to stock performance via trade. There is no hypothetical agreement either on the existence of a linking among stock performance and exchange rate or the progression of connection. Maku and Atanda (2010) stated that literature available on the forex specified two tactics for the interrelationship between stock performance and currency exchange rate. One of them is the "flow-oriented model" or "goods market model" stated by Dornbusch and Fischer (1980), and the second is the "stock-oriented model" or

"portfolio oriented model". Maysami et al. (2005) favoring the positive relationship hypothesis between exchange rate and stock performance. A price increase in the domestic assets reasons resources is increasing that lead investor to advance their income claim, which rises indigenous interest rates. As per Stavarek (2005), an improved rate of interest attracts overseas capital and began developments in the extraneous necessity for local currency reasons its growth. Empirically Vanita and Khushboo (2015), Agrawal et al. (2010), Bilson et al. (2001), Ajayi and Mougouė (1996) study the association among currency exchange rate and stock performance. They stated a significantly negative linkage between the currency exchange rate and share returns. Although some of the researchers like Chkili and Nguyen (2014), Caporale et al. (2014), Ozturk and Acikalin (2008), Tursoy et al. (2008) specified that there is no pricing relationship between the stock performance and currency exchange rate. Money supply also initiating to alter stocks of businesses.

The primary money managing institutions are primarily worried about the supply of money as it is concerned with the various financial activities of the country. By considering the supply of money as a foremost sign of performance and classifies "money supply" into categories "narrow money supply" (M1) and "broad money supply" (M2) Nell (2000). Friedman (1988) stated that the money supply effect is stated by two lines. The first one is the "monetary portfolio hypothesis MPH", while the second is the "efficient market hypothesis EMH". "monetary portfolio hypothesis" (MPH) accepts that an increased money supply reason growth in nearly entire economic activities along with the stock exchange market. Researchers like Ramadan (2016), Galea (2015), Zaheer and Rashid (2014), Maku and Atanda (2010), Maysami et al. (2005), Mukherjee and Naka (1995) portrayed that stocks and money supply interrelationship and report it as positive. In their study, Mukherjee and Naka (1995) benefited from "economic provocation" to clarify how the supply of money and stock prices are linked. Also explained, money supply lifts commercial happenings afterward, the allied business income marks a rise in share prices. At the same time, the "efficient market hypothesis" assumes that the impact of the money supply variation on share price is controlled, and adjustment pace delivers no gap for dealers to receive any abnormal earnings as the exchange market stocks previously combined all relevant material info. Isenmila and Erah (2012), Humpe and Macmillan (2009), Gan et al. (2006) provide a suggestion that the cost of keeping cash negatively influenced by rising interest rates, which turns a decline in stock performance therefore, negatively connected to the money supply. El-Nader and Alraimony (2012), Butt et al. (2010), Singh et al. (2011) revealed the insignificant conclusion about supply of money in defining stocks performance.

Although some researchers do not find a strong and important link between macroeconomic conditions and stock returns, others do. Fama (1981) demonstrated, using annual data, that actual Stock Performance has a close relationship with production growth rates. Humpe and Macmillan (2009) and several other researchers from developed economies discovered that macroeconomic conditions influence firm stock efficiency. In this study, country-level factors pertinent to the stock performance of developing/emerging economy Pakistan were studied.

3. Data and Methods

3.1. The Data

Quantitative statistics methods were employed. The study has employed the data for 17 years' time spam from the year 2004 until 2020. The study encompasses non-financial sector firms of Pakistan. This research study rests on secondary data attained form "Financial Statement Analysis of Companies" issued by the State Bank of Pakistan. The available publications bring valued data relevant to the listed firm using "audited financial statements". Additional data sources include the World Bank Development Indicators. variable expression is outlined in Table 1 in terms of abbreviation, measurement and literature reference.

Table 1. Variable expression.

Variables	Measures	Empirical Evidence
SR (stock returns)	(Pt–Pt-1)/Pt-1	(Akbar et al. 2012)
TN (tangibility)	Fixed assets divided by total assets	(Frank and Goyal 2009; Kayo and Kimura 2011)
SZ (size)	Natural log of sales	(Shah et al. 2004)
GR (growth)	% Change in total assets	Ahsan et al. (2016)
MU (munificence)	"Regressing time with sales of industry over the study period and Taking the ratio of the regression slope coefficient to mean value of sales over the same study period."	(Kayo and Kimura 2011)
DYA (dynamism)	"Standard error of the munificence regression slopes co-efficient divided by the mean value of sales over the study period."	(Kayo and Kimura 2011; Ahmad Zaidi and Othman 2014)
HHI	HH index is measured by the sum of the squares of market shares of firms within a given industry	(Kayo and Kimura 2011)
GDP	Annual growth in GDP	(Forson et al. 2013)
IN (inflation)	"CPI consumer price index."	(Talla 2013; Mahmood et al. 2013)
OP (oil price)	Crude oil rates per barrel in USD	(Gay 2016)
XR (exchange rate)	"Pakistani Rupee against one unit of USD"	(Yang and Zeng 2014)
MS (money supply)	"M2"	(Sirucek 2011)

3.2. Diagnostic Tests

Before moving ahead for analysis, different investigative tests were performed to confirm the legitimacy and health of the dataset. Next to the dependable diagnostic test, the data are arranged for supplementary analysis. For the purpose to diagnose the data, the following tests were performed:

- Data stationarity test;
- Descriptive statistics;
- Correlation matrix.

Appendix A Table A2 presents descriptive statistics for study variables. The last seventeen years' average annual stock return is 0.207. The maximum loss throughout a year is 1, and the maximum earning seen 4.19 standard deviation S.D. of returns is 0.552.

If FEM is employed, therefore, it is presumed that data need to be stationary. To reject subjective outcomes and approve that data set is a dependable test of unit root carried out. Many methods are used to validate data stationarity. Mostly used and dependable methods were implemented. All other variables other stationary at level, but Size and HHI are stationary at first difference. Tests results are presented in Appendix A, Table A2.

Multicollinearity occurs when two or more forecasters in any regression analysis exceptionally coupled with one other so that they do not imitate authentic or impartial info of the regression analysis. Basically, when two predictors are remarkably linked with one another, both express similar information. If multicollinearity occurs, then independent variables/variables are influenced and do not provide rational outcomes. Appendix A Table A3 shows the correlation matrix of the study variable. As Adam and Tweneboah (2008) suggested that the rule of the thumb was if a high correlation exists within two predictors, which is more than (0.8), multicollinearities may reason a critical problem.

3.3. The Estimation Models

Study values panel estimator thus, to take account of the overlooked firm and country-specific invariant time outcomes to analysis, we used the "fixed effect model" (Mundlak 1961). "Fixed effect" technique, as per Mundlak (1961), lets us take control measures for unobserved heterogeneity. The purpose of the study primarily emphasizes the

marginal effects of determining firm-specific, sector-specific and country-specific factors hereafter in directing the unobserved factors in the model. Fixed effects of firm-specific factors play a most important role. The inspiration behind this technique is that firms have exclusive possessions that otherwise not detected.

$$Rit = \beta\theta + \beta1(TN)it + \beta2(SZ)it + \beta3(GR)it + \mu i + \varepsilon it \quad (1)$$

$$Rit = \beta\theta + \beta1(MU)t + \beta2(DY)t + \beta3(HHI)t + \mu i + \varepsilon t \quad (2)$$

$$Rit = \beta\theta + \beta(GDP)t + \beta2(IN)t + \beta3(OP)t + \beta4(XR)t + \beta5(MS)t + \mu i + \varepsilon t \quad (3)$$

where the Ri, t = return of security i and for, t time

SZ = firm size, TN = tangibility, gr = firm growth, MU = industry munificence, DY = industry dynamism, HHI = industry concentration, MS = money supply, GDP = gross domestic product, IN = inflation (CPI), O = oil price, XR = currency exchange rates, (M2), μi = the fixed effects, ε = error term.

4. Empirical Results and Discussion

Baseline FEM results are provided in Table 2, where size is positively correlated with stock performance. Grounded on results presented in the table, firm size shows an insignificant association with stock performance. Assets tangibility has a negative and significant relationship with stock performance, similar outcomes reported by Kodongo et al. (2015) in their study. Growth shows astonishing results and contrasting existing literature. Firm growth has a significant positive correlation with stock performance. A positive bond getting supported by Claessens et al. (2000) by giving the reason that the monetary markets of "Asian Countries" are considerably changed from the United States US market concerning ownership structure, governance mechanism and corporate control. More prominently, the Asian country's markets are extremely dependent on the bank-based economic system. As stated by Yao et al. (2011), the firms based in Asian Economic Markets with powerful capital markets, funding is done through the bank. Added by Yao et al. (2011) that banks watching can impact firm productivity since banks may directly have entrance to financial information of companies. Therefore, it may efficiently limit industries' more investment tendency, growth prospects of the business, using capital rationing. Therefore, through the medium of efficient corporate strategies and constant scrutinizing by banks, avoid firms' risk and participating in safe and more money-making projects, which make stock performance rising.

Munificence showing the negative relationship with stock performance and keeping a strongly correlated with performance with showing a *p*-value of 0.0000*** indicating robust correlation cutoff point of 1%. Model results are someway matching with researchers like (Kayo and Kimura 2011). They acknowledged that industry munificence demonstrates significantly adverse relations with leverage. It seems like "agency theory". These steady terms between leverage and performance. Since when stocks increase value, firms bring down the level of credit/debit, which accordingly reasons a stock performance decline, and firms are yet once again arranged to make more debt financing. The infinite circle inverse effects subsequently drive leverage and share performance at a similar level. Industry munificence of industry is significantly impacting the firm productivity testified by (Kayo and Kimura 2011).

Dynamism has a positive and significant relationship with stock performance. Firms operating under a dynamic setting may have a propensity to use equity funding to cut the operational cost arising from higher risk levels. Otherwise, companies working under the setting with a lower level of dynamism tend to focus on debt or credit financing, which reduces their earnings. Industry concentration (HHI) has a significant positive correlation with stock performance. As explained by Naveed (2015), higher "concentrated industries" use additional leverage levels as they are higher profitable, uniform and less exploited to the risk and its dispersion.

Table 2. Fixed effect regression results.

	(1)	(2)	(3)
	Firm Level	Industry Level	Country Level
SZ	0.003 (0.008)		
TN	−0.211 ** (0.097)		
GR	0.135 ** (0.056)		
MU		−1.983 *** (0.449)	
DYA		16.874 *** (3.619)	
HHI		12.661 *** (1.922)	
GDP			−0.099 *** (0.012)
IN			−0.099 *** (0.007)
MS			−11.226 *** (1.321)
XR			2.112 *** (0.313)
OP			0.720 *** (0.062)
Constant	0.282 *** (0.072)	−1.063 *** (0.196)	1.650 *** (0.109)
Obs.	1360	1360	1360
R-squared	0.008	0.041	0.139
F-stat	3.37	18.07	41.00

Standard errors are in parenthesis *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

GDP shows a negative correlation towards stock performance, and it is considered as cleared through *p*-value, which is 0.0000*** authorized robust correlation cut off point of 1%. Inflation has a significant negative relationship with stock performance. The negative sign of the coefficients means that a rise in inflation will reason stock prices to fall. This is constant with the prior evidence of a negative and significant linkage between inflation and stock performance (Fama and Schwert 1977). The study results are in line with El-Nader and Alraimony (2012), Ramadan (2016), Mukherjee and Naka (1995), Sagarika and Harminder (2012), Pal and Mittal (2011), Fama (1981) provided a negative relationship. The oil prices have a positive association with stock performance, and this association is noteworthy as indicated through *p*-value 0.0000***, which clear, robust correlation measures of the p-value. The results are constant with Çiftçi (2014), Gjerde and Sættem (1999) supported for positive association. A clarification for this association could be, companies are patronage with risk managing methods. Hedge strategies of crude oil and different rates of commodities with using derivatives are normal (Sadorsky 2001). Çiftçi (2014) explained that uncertainty state and variations in rates of crude oil if trailed by any business tragedy then companies are keener to implement protecting approaches to decline coverage of risk. These arrangements upsurge the level of commerce and conceivably expand revenue and potential cash flows of companies, and took advantage of varied prices of oil. Study outcomes of correlation of crude oil rates and stock performance are not coherent with the results of Narayan and

Sharma (2014), Park and Ratti (2008) supported negative correlation. Exchange rate has a positive relationship with stocks. Maysami et al. (2005) favoring the positive relationship hypothesis between exchange rate and stock performance. A price increase in the domestic assets reasons resources increases that lead investors to advance their income claim, which rises indigenous interest rates. As per Stavarek (2005), an improved rate of interest attracts overseas capital and began developments in the extraneous necessity for local currency reasons its growth. The supply of money has a negative correlation with stock performance. As per EMY effect of the money supply disparity on share price is controlled, and the adjustment pace delivers no gap for brokers to receive any abnormal earnings as the exchange market stocks previously combined all relevant material information. Isenmila and Erah (2012), Humpe and Macmillan (2009), Gan et al. (2006) provide a suggestion that the cost of keeping cash is negatively influenced by rising interest rates, which turns a decline in stock performance therefore, negatively connected to the money supply.

5. Robustness

To ensure that FEM assumptions meet the criteria robustness test was performed. As the estimated FEM for panel data suffers from diagnostic problems, thus it is imperative to estimate the robustness using robust estimators that may correct standard error issues. Diagnostic results of modified Wald test for groupwise heteroskedasticity, Pesaran's test of cross-sectional independence, and Wooldridge test for autocorrelation in panel data shown in Table 3 document that estimated FEM suffers from standard error problems.

Table 3. Diagnostic testing.

	(1)	(2)	(3)
	Firm Level	**Industry Level**	**Country Level**
Modified Wald test for groupwise heteroskedasticity	1008.46	579.55	1200.73
Pesaran's test of cross-sectional independence	65.876	58.570	37.626
Wooldridge test for autocorrelation in panel data	18.258	20.959	13.793

To overcome diagnostic problems, Driscoll–Kraay's covariance matrix estimator of Driscoll and Kraay (1998) and Panel-corrected standard errors (PCSE) are employed. We follow literature devoted to the situations alike present scenario (Khan et al. 2020; Pervaiz et al. 2021; Abdulahi et al. 2019). Referred studies use Driscoll–Kraay and PCSE for a given condition where cross-sections are greater than time (N > T). The estimation results of the panel corrected standard error provided in Appendix A, Table A4. The estimation results of the Driscoll–Kraay regression provided in Appendix A Table A5.

6. Conclusions, Limitations, and Future Research

Firm, industry, and macroeconomic level variables were investigated in relation to financial efficiency. The research's main aim is to explore how different firm-level, industry-level and country-level factors influence a firm's stock performance of PSX listed firms of textile and F&PCP sector? and how the nature of the sector influences the stock performance. Of these firms? PSX. Seventeen years of secondary data from 80 companies of textile and F&PCP analyzed using FEM. Our analysis suggested that different firm, industry and country-level factors influence stock performance differently. Like most of the quoted literature studies, our results pertinent to the size indicated a positive relationship. Growth has a favorable relationship, which is because companies with a high asset ratio will borrow more money and put it into more lucrative ventures, resulting in higher earnings. Munificence maintained a negative relationship with stock performance. The quoted literature provides support for both directions of the relationship as Dess and Beard

(1984), Simerly and Li (2000) in the view that positive linkage of munificence with stock performance is following "tradeoff theory" and negative affiliation with "pecking order theory". The FEM analysis of dynamism indicates that it correlates positively with stock performance. HHI results are positive in FEM analysis in the literature. We have both streams of a negative and positive relationship. Since concentrated industry firms are shielded from competitive challenges, have lower levels of creativity, and hence experience lower profitability. The GDP has a negative relationship with stock performance. Inflation was noticed to have a pessimistic relationship. The negative sign of the coefficients means that a rise in inflation will cause stock prices to drop. Mainstream research literature like El-Nader and Alraimony (2012), Ramadan (2016), Mukherjee and Naka (1995), Sagarika and Harminder (2012), Pal and Mittal (2011), Fama (1981) reported similar relationship. Our results of oil prices indicate its positive association with stock performance, and in the literature Çiftçi (2014), Narayan and Sharma (2014), Gjerde and Sættem (1999) come up with similar findings. It linked positively as risk management processes and oil/energy hedging are backed by the companies provide benefit to them. Money supply has a negative correlation with stock performance. The cost of keeping cash is negatively influenced by rising interest rates, which turns a decline in stock performance, therefore, negatively connected to the money supply. As per EMY, stock prices are meticulous and quickly adjustable, thus deliver no gap for brokers to receive any abnormal return as the exchange market stocks previously combined all relevant material information. The exchange rate has a positive relationship with stocks. A price increase in the domestic assets reasons resources is increasing that lead investors to advance their income claim, which rises indigenous interest rate, which attracts overseas capital and started developments in the peripheral necessity for local currency reasons its appreciation.

One of the limitations of the study is that data are limited to 80 companies only, and therefore, due to the small sample size, results cannot be generalized. The annual data have been used, which may be considered as a longer period as a lot of changes are reflected during the period of one year.

There is a fruitful area to move further in this research field. To gain a more in-depth understanding of stock performance, one could investigate by conducting a comparative analysis of the financial non-financial industries. By keeping in front, the status of stock exchange markets, supplementary research stretched to monthly or daily data to depict the further awareness of economic conditions. One more area could be the integration of instability of political environment or government change since these aspects suggestively affect the stock exchange market performance. Additionally, relative analysis of these economic forces on the stock returns of public and private firms could also be a valuable area for research.

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Appendix A

Table A1. Descriptive Statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
Returns	1360	0.207	0.552	−1	4.19
Size	1360	6.91	3.20	−7.28	15.37
Tangibility	1360	0.48	0.261	−0.334	1.34
Growth	1360	0.02	0.298	−3.75	1
Munificence	1360	0.117	0.284	−0.308	0.897
Dynamism	1360	0.015	0.039	−0.055	0.162
HHI	1360	0.099	0.118	0.035	0.411
GDP	1360	3.71	1.90	1.607	7.66
Inflation	1360	9.14	3.82	2.54	20.2
Money supply	1360	0.017	0.054	−0.182	0.074
Exchange rates	1360	0.055	0.23	−0.774	0.296
Oil prices	1360	−0.142	0.333	−0.896	0.293

Table A2. Unit root test.

Variables	Return		Size		Growth		Tangibility		Munificence	
Method	**Statis**	**Prob**	**Statis**	**Prob**	**Statis**	**Prob**	**Statis**	**Prob**	**Statis**	**Prob**
Levin, Lin and Chu t	−21.9	0	−37.3	0	−16.4	0	−3.42	0	−31.5	0
Im, Pesaran and Shin W-stat	−17.2	0	−31.6	0	−16.3	0	−1.50	0.066	−22.1	0
ADF—Fisher's chi-squared	588.1	0	1017	0	625	0	222	0	721.9	0
PP—Fisher's chi-squared	1020	0	1370	0	1043	0	242	0	513.1	0
Variables	**Dynamism**		**HHI**		**GDP**		**Inflation**		**Oil Prices**	
	Statis	**Prob**	**Statis**	**Prob**	**Statis**	**Prob**	**Statis**	**Prob**	**Statis**	**Prob**
Levin, Lin and Chu t	−32.4	0	−32.3	0	−21	0	−8.6	0	−21.6	0
Im, Pesaran and Shin W-stat	−23.75	0	−23.4	0	−18	0	−7.4	0	−13.8	0
ADF—Fisher's chi-squared	775.5	0	787	0	602	0	272.8	0	456	0
PP—Fisher's chi-squared	565.8	0	1423	0	178	0.158	262.6	0	460	0
Variables	**Exch. Rates**		**Money Sup.**							
	Statis	**Prob**	**Statis**	**Prob**						
Levin, Lin and Chu t	−57.2	0	−67.8	0						
Im, Pesaran and Shin W-stat	−53	0	−64.4	0						
ADF—Fisher's chi-squared	1721	0	2163	0						
PP—Fisher's chi-squared	1508	0	1461	0						

Table A3. Correlation matrix.

Variables	−1	−2	−3	−4	−5	−6	−7	−8	−9	−10	−11
(1) Size	1										
(2) Tangibility	−0.11	1									
(3) Growth	0.323	−0.006	1								
(4) Munificence	0.003	0.11	0.242	1							
(5) Dynamism	−0.005	0.1	0.233	0.79	1						
(6) HHI	0.127	−0.3	0.158	−0.09	−0.05	1					
(7) GDP	−0.02	0.081	0.203	0.796	0.776	−0.06	1				
(8) Inflation	0.042	0.049	0.043	0.153	0.149	−0.03	−0.36	1			
(9) M Supply	0.01	−0.07	−0.17	−0.86	−0.87	0.067	−0.59	−0.05	1		
(10) Ex rates	0.013	−0.07	−0.18	−0.86	−0.87	0.063	−0.69	0.121	0.763	1	
(11) Oil prices	0.036	0.064	0.139	0.328	0.296	−0.05	0.149	0.546	−0.03	−0.01	1

Table A4. Robustness: panel corrected standard error results.

	(1)	(2)	(3)
	Firm Level	**Industry Level**	**Country Level**
Size	0.009 * (0.005)		
Tangibility	−0.024 (0.073)		
Growth	0.181 *** (0.068)		
Munificence		−0.080 (0.767)	
Dynamism		−0.064 (5.234)	
HHI		0.487 *** (0.151)	
GDP			−0.093 ** (0.042)
Inflation			−0.090 *** (0.024)
Money supply			−9.852 ** (4.166)
Exchange rates			1.828 * (0.995)
Oil prices			0.717 *** (0.204)
Constant	0.159 ** (0.071)	0.176 ** (0.084)	1.540 *** (0.364)
Obs.	1360	1360	1360
R-squared	0.017	0.013	0.106
Wald Chi2	18.61	11.89	15.55

Standard errors are in parenthesis *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A5. Robustness: Driscoll–Kraay regression results.

	(1)	(2)	(3)
	Firm Level	**Industry Level**	**Country Level**
Size	0.003 (0.004)		
Tangibility	−0.211 ** (0.075)		
Growth	0.135 (0.089)		
Munificence		−1.983 (1.137)	
Dynamism		16.874 (9.889)	
HHI		12.661 ** (4.961)	

Table A5. *Cont.*

	(1)	(2)	(3)
	Firm Level	**Industry Level**	**Country Level**
GDP			−0.099 ** (0.035)
Inflation			−0.099 *** (0.013)
Money supply			−11.226 *** (2.903)
Exchange rates			2.112 ** (0.790)
Oil prices			0.720 *** (0.216)
Constant	0.282 *** (0.084)	−1.063 ** (0.457)	1.650 *** (0.248)
Obs.	1360	1360	1360
R-squared	0.008	0.041	0.139
F-stat	2.77	12.77	15.14

Standard errors are in parenthesis *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

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