The Impact of Investment Decision on Firm Financial Performance Moderated by Economic Policy Uncertainty: Evidence from the Non-Financial Sector of Pakistan

Abdul Quddus, Ph.D.

Doctoral Thesis Summary

Tomas Bata University in Zlín

Tomas Bata University in Zlín
Faculty of Management and Economics

Doctoral Thesis Summary

The Impact of Investment Decision on Firm Financial Performance Moderated by Economic Policy Uncertainty: Evidence from the Non-Financial Sector of Pakistan

Vliv investičního rozhodnutí na finanční výkonnost firmy v závislosti na nejistotě hospodářské politiky v nefinančním sektoru Pákistánu

Author: **Abdul Quddus, Ph.D.**

Degree programme: P6202 Economics Policy and Administration

Degree course: 6202V010 Finance

Supervisor: prof. Dr. Ing. Drahomíra Pavelková

Examiners: prof. Ing. Aleksandr Key Ključnikov, Ph.D.

                       doc. Ing. Adriana Knápková, Ph.D.

Zlín, April 2023

Key words: *Investment decision, Economic policy uncertainty, Firm performance, non-financial sector, Pakistan.*

Klíčová slova: *investiční rozhodnutí, nejistota hospodářské politiky, výkonnost firmy, nefinanční sektor, Pákistán.*

Full text of the doctoral thesis is available in the Library of TBU in Zlín.

ABSTRACT

The non-financial corporate sector is a vital division of a country's economy, and a solid, effective, and robust industrial foundation is therefore fundamental for the economic well-being of a country. Investment decision plays an important role in the performance and value creation of a firm. The current dissertation aims to examine the moderating role of economic policy uncertainty on investment decisions and firm financial performance in the nonfinancial sector of Pakistan.

The objective of this dissertation is achieved using a quantitative method. A sample of 223 nonfinancial listed firms in the Pakistan Stock Exchange is employed for the period of 10 years (2010-2019). Different panel regression estimation techniques were applied: pooled OLS, random and fixed effects, and two-step system (GMM) dynamic panel data estimation to examine the association among the variables to provide the consistent results of the study. The result of the dissertation shows that investment in tangible assets, investment in intangible assets, financial leverage and economic policy uncertainty has a negative and significant impact on firm financial performance measured by return on assets (ROA) but investment in working capital shows a positive and statistically significant influence on ROA. On the other hand, investment in intangible assets and financial leverage has a positive impact on firm market performance measured by Tobin's Q but investment in tangible assets has negative impact on Tobin's Q. Moreover, the moderating impact of economic policy uncertainty significantly and positively moderates the relationship between investment in tangible assets, investment in intangible assets, and financial leverage, and negatively moderates the investment in working capital on firm financial performance (ROA). On the contrary, the interaction of economic policy uncertainty moderates investment in intangible assets and financial leverage significantly and negatively, but has a positive influence with investment in tangible assets and investment in working capital on Tobin's Q. The result of the study confirms that the economic policy uncertainty significantly moderates the relationship between investment decision and firm financial performance in the nonfinancial sector of Pakistan. The study theoretically contributes to the existing body of knowledge that economic policy uncertainty is the vital cause that influences investment decisions and firm value in developing countries. Limitations, future research direction, and practical implications are also defined.

ABSTRAKT

Nefinanční podnikový sektor je důležitým segmentem ekonomiky země, a proto je pevná, stabilní a silná průmyslová základna nezbytná pro hospodářský blahobyt země a jejího obyvatelstva. Investiční rozhodnutí hrají důležitou roli ve výkonnosti a tvorbě hodnoty podniku. Cílem této disertační práce je prozkoumat moderující roli nejistoty hospodářské politiky na investiční rozhodování a finanční výkonnost firem v nefinančním sektoru Pákistánu.

Cíle disertační práce je dosaženo s využitím kvantitativního výzkumu. Je použit vzorek 223 nefinančních firem kótovaných na pákistánské burze cenných papírů za období 10 let (2010-2019). Ke zkoumání souvislostí mezi proměnnými byly použity různé techniky odhadu panelové regrese: sdružený OLS, náhodné a fixní efekty a dvoustupňový systém (GMM) dynamického odhadu panelových dat, aby byly zajištěny konzistentní výsledky studie. Výsledky disertační práce ukazují, že investice do hmotného majetku, investice do nehmotného majetku, finanční páka a nejistota hospodářské politiky mají negativní a významný vliv na finanční výkonnost podniku měřenou rentabilitou aktiv (ROA), ale investice do pracovního kapitálu vykazují pozitivní a statisticky významný vliv na ROA. Na druhé straně investice do nehmotných aktiv a finanční páka mají pozitivní vliv na tržní výkonnost firmy měřenou Tobin Q, ale investice do hmotných aktiv mají negativní vliv na Tobin Q. Navíc moderující vliv nejistoty hospodářské politiky významně a pozitivně moderuje vztah mezi investicemi do hmotných aktiv, investicemi do nehmotných aktiv a finanční pákou a negativně moderuje vliv investice do pracovního kapitálu na finanční výkonnost firmy (ROA). Naopak interakce nejistoty hospodářské politiky významně a negativně moderuje investice do nehmotných aktiv a finanční páku, ale má pozitivní vliv investic do hmotných aktiv a investic do pracovního kapitálu na Tobin Q. Výsledky studie potvrzují, že nejistota hospodářské politiky významně moderuje vztah mezi investičním rozhodnutím a finanční výkonností firmy v nefinančním sektoru Pákistánu. Studie teoreticky přispívá k dosavadním poznatkům, že nejistota hospodářské politiky je zásadní příčinou, která ovlivňuje investiční rozhodnutí a hodnotu firmy v rozvojových zemích. Jsou rovněž definována omezení, budoucí směr výzkumu a praktické využití.

CONTENTS OF THE THESIS

LIST OF FIGURES

LIST OF TABLES

LIST OF SYMBOLS AND ABBREVIATIONS USED

CFO: Cash flow from operations
EPU: Economic Policy Uncertainty
FA: Firm's Age
FE: Fixed effects
FL: Financial Leverage
FS: Firm's Size
IIA: Investment in Intangible Assets
ITA: Investment in Tangible assets
IWC: Investment in working capital
Pooled OLS: Pooled ordinary least square
RE: Random effects
SGMM: System generalized method of moments
WC: Working Capital

1. INTRODUCTION

The decisions made by corporations regarding investments are crucial activities that can result in the establishment of new facilities, development of new products, adoption of innovative technology, implementation of novel business processes, or a combination of these actions. These decisions have significant implications for the organization and its future prosperity (Emmanuel et al., 2010). The new investment in a company is being used to increase the company's productive capacity, and it can be funded either internally or externally. According to Jangili and Kumar (2010), corporate investment decisions often include only those that generate profit and sales and those that reduce firm costs and save capital to boost profitability. Investment decisions are mainly linked to capital expenditures that significantly affect the firm's overall performance and market value (Singh et al., 2012). However, investment decisions are highly concerned with the financial performance of a company and determine risk factors to minimize its cost. Several studies show a significant relation between investment and firm value (da Silva et al., 2013; Moon & Sharma, 2014; Lian et al., 2019). Recently, some studies have indicated the impact of investment decisions on the financial performance of firms. Different studies show mixed results. Some show that investment decisions significantly impact a firm's financial performance. This study contributes to a growing stream of corporate finance literature in exploring the impact of investment decisions and firm financial performance in the Pakistani context which can represent one of the cases of a developing economy. It contributes to existing theories of investments, including neoclassical, Q, trade-off, and pecking order theories. Additionally, it provides new insights by exploring the moderating effect of EPU on the relationship between investment decisions and firm financial performance. This research fills a contextual gap by examining this study in the context of a developing economy, while most previous studies have focused on developed countries.

The thesis is divided into the following 10 chapters. The chapter first is the introduction. Chapter 2 defines research problem and objective and the economy of Pakistan, Chapter 3 focuses on the theoretical background and the literature of the study variables. Next chapter is the hypotheses development and conceptual framework. Chapter 5 includes methodology and the brief description of Pakistani stock market. Chapter 6 shows the findings and discussions of results. Chapter 7 presents discussion of the research. Chapters 8, 9 and 10 propose the limitations, contributions to theory and practice, conclusion of the study and lastly, proposal for future research presented.

2. RESEARCH PROBLEM AND RESEARCH OBJECTIVE

2.1 Research Problem

In fact, various researchers addressed the lack of empirical studies from the nonfinancial sector in the developing countries. The significance of these studies also rises if they are conducted in a dynamic environment of a developing country such as Pakistan due to the

higher fluctuations in economic policy. In the case of the country's investment patterns, the situation is no different. The fluctuation in investment in the country can be attributed to a variety of factors. These include on-going geopolitical and economic challenges, frequent natural disasters, a complex political history marked by contradictory and ever-changing policies, and a persistently unstable and unpredictable economic environment. All these factors have contributed to an uncertain investment climate in the country.

South Asia is a region with a unique set of characteristics and challenges that make it an interesting and important area for research due to large and growing market, economic diversity, and social and environmental challenges. Figure 1 shows the cluster of four countries of economic policy uncertainty trend in Pakistan, India, Iran, and Bangladesh that differ due to a multiplicity factors, including political stability, economic conditions, and government policies. The EPU is higher in Pakistan than other south Asian countries.
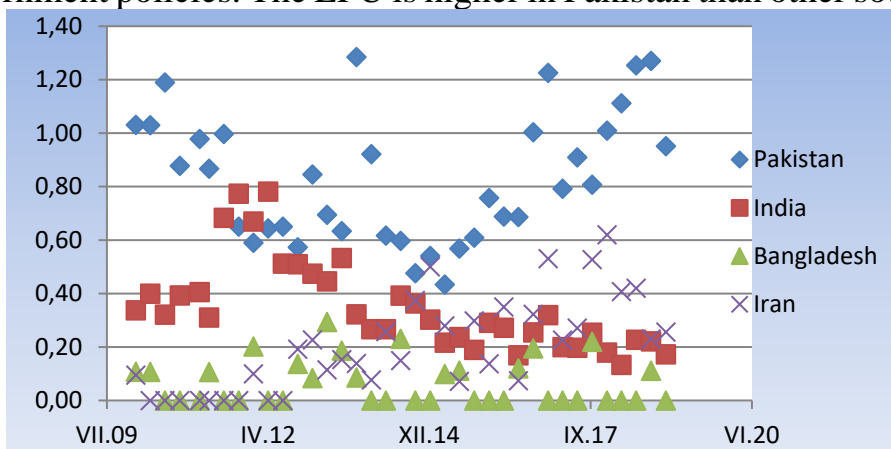
Figure 1: Trend of EPU (Source: WU Index)

Therefore, in the context of Pakistan, the fluctuations in the EPU are dramatic that could influence investment decisions and can provide a rich and diverse understanding of the economic and business environment in the country. To the best of author's knowledge, no single study undertaken in Pakistan has selected economic policy uncertainty as a moderating variable by incorporating all of its categories. The study provides theoretical and practical contribution by explaining the moderating effect of EPU on the relationship between investment decisions and firm performance, which benefits the micro and macro environment of the organization. The study addresses the essential issues of EPU to gain a better understanding of investment decisions for companies. Furthermore, this study contributes to our knowledge of investment behavior and firm performance through economic policy fluctuations that have not been explored in depth in the previous literature.

2.2. The economy of Pakistan, investment policy, and economic policy uncertainty

Pakistan has a developing economy with a population of 227 million people. Its economy is the 23rd largest in the world, based on purchasing power parity (PPP). Pakistan's

nominal GDP for the fiscal year 2022 is US$376 billion, which ranks it at the 177th position globally. In terms of purchasing power parity (PPP), its GDP is estimated to be US$1.512 trillion, and the GDP (PPP) per capita is around US$6,662, positioning it at 168th.

The manufacturing sector of Pakistan plays a significant role in the economy. It contributes approximately 12% to the GDP of a country and established employment opportunities to a large number of people (finance division of Pakistan). The sector is characterized by a diverse range of industries including textiles, leather, chemicals, pharmaceuticals, engineering, and food processing. The textile industry is one of the largest and most established industries in Pakistan, accounting for a large part of the country's total exports. The country is known for producing high-quality cotton, silk and woollen textiles that are exported to various countries around the world. The leather industry in Pakistan is also growing rapidly and is known for producing leather goods such as shoes, bags, jackets, and gloves. Figure 2 shows the share of the manufacturing sector of Pakistan in GDP.
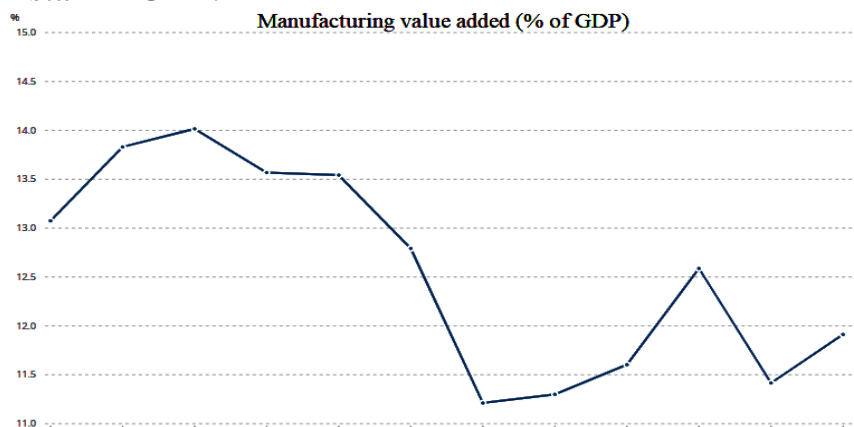
Figure 2: Share of manufacturing sector of Pakistan in the GDP (Source: World bank)

After independence, Pakistan's economy faced several challenges and fluctuations due to a variety of factors such as geopolitical and economic crises, natural disasters, political instability, inconsistent policies, and unstable economic conditions. These dynamics have had a significant influence on the country's investment patterns and overall economic development. The government has attempted to address these challenges through various economic reforms. Despite these challenges, the economy has shown some signs of growth in recent years, and the government continues to take measures to improve the investment climate and promote economic development. However, sustained effort and stability are needed to fully realize the potential of Pakistan's economy. The economy of Pakistan has undergone many political and economic events that have played a crucial role in its economic fluctuations.

Figure 3 shows the various causes and trends of economic policy uncertainty in Pakistan. These causes include historical floods, increased frequency and intensity of terrorism,

political protests and marches, volatility in the stock and foreign exchange markets, political unrest, tax reforms, political chaos, and Pakistan entering an international monetary fund program. It also mentions radical fiscal reforms, which could mean significant changes in the government's financial policies.
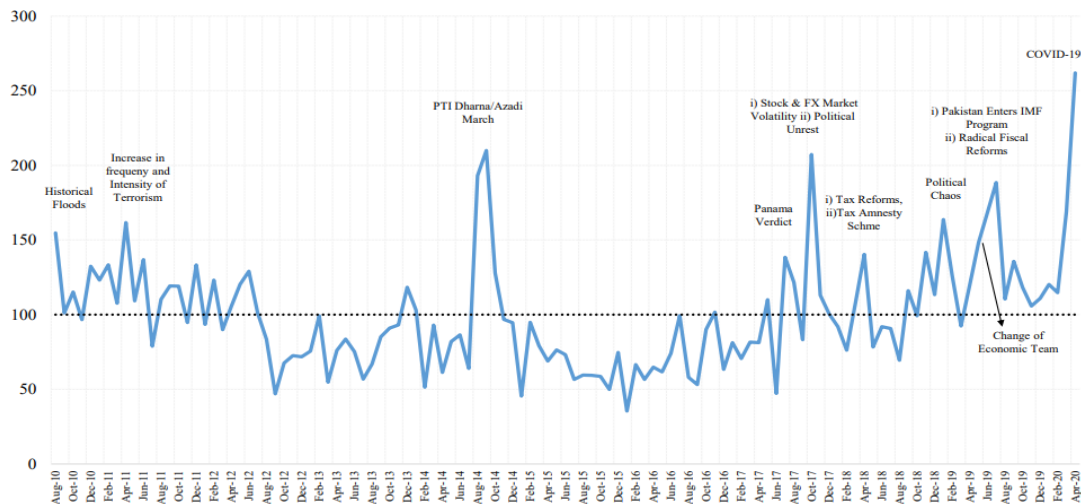
Figure 3: Trend of EPU in Pakistan (Source: EPU index)

2.3 Research Objectives

The study intends to achieve the objective of dissertation by pursuing the following specific objectives.

RO1: To examine the linkage between investment in tangible assets and the financial performance of the nonfinancial sector.

RO2: To examine the moderating impact of economic policy uncertainty on the relationship between investment in tangible assets and the financial performance of the nonfinancial sector.

RO3: To investigate the linkage between investment in intangible assets and the financial performance of the nonfinancial sector.

RO4: To examine the moderating impact of Economic Policy Uncertainty on the relationship between investment in intangible assets and the financial performance of the nonfinancial sector.

RO5: To investigate the relationship between investments in working capital and the financial performance of the nonfinancial sector.

RO6: To investigate the moderating impact of economic policy uncertainty on the relationship between investments in working capital and the financial performance of the nonfinancial sector.

RO7: To examine the linkage between financial leverage and the financial performance of the nonfinancial sector.

RO8: To investigate the moderating impact of economic policy uncertainty on the relationship between financial leverage and the financial performance of the nonfinancial sector.

3. THEORETICAL BACKGROUND

The role of investments can be described as a catalyst for a country's economic growth, whether it is foreign or domestic investment, public or private investment. Besides, macroeconomic variables, i.e. (Monetary policy, Taxation, Inflation, and Economic Growth), play a major role in country-level policy formulation.

3.1 Investment decision and firm performance

Many studies have been carried out earlier on investment decisions and firm financial performance. Investment decisions have been considered as a vital subject for the better performance of the nonfinancial sector. Hatem (2015) has explored the relation between investment and firm profitability and provides evidence that investment and firm performance are positively correlated.

3.2 Investment in tangible and intangible assets, economic policy uncertainty, and firm performance

Gulen and Ion (2016) suggested that economic uncertainty impacts corporate financial decisions. They found that the EPU index and corporate capital investment have a negative relationship. There are more significant influences on businesses that rely on government contracts or elevated levels of irreversible investment exposure. According to Gilchrist et al. (2014), EPU is linked to a decrease in stock market performance, bond prices and yields, and investment. This highlights the importance of stable and predictable economic policies to create a favourable investment environment and sustain economic growth.

3.3 Investment in working capital, economic policy uncertainty, and firm performance

WC is a business's operating liquidity, which accounts for a significant percentage of investment (Fazzari et al., 2000). Effective WC means that businesses have enough cash flow to meet their operating demands during periods of high EPU. However, Smith (1980) implies that working capital is critical because of its impacts on a value and consequently on profitability of firm. The overall effect of a higher economic policy uncertainty increases internal working capital investments. In a highly competitive business environment, companies tend to increase their investments in working capital in response to heightened uncertainty, as postponing these investments can negatively impact their competitiveness in the long run.

3.4 Financial leverage, economic policy uncertainty, and firm performance

Financial leverage refers to the use of borrowed funds (debt) in addition to a company's own capital (equity) to finance its operations and growth. It is a vital determinant of investment decisions (Jangili & Kumar, 2010). There is a general impression that the effect of leverage on a company's performance is inconsistent, with some findings showing a negative correlation (Zeitun and Tian, 2007; Salawu, 2007) and several documenting a positive or no significant correlation (Yakubu, 2015; Brick and Ravid, 1985). The study by Danso et al. (2020) examines the relationship between financial leverage and firm performance using data from 2403 Indian firms during the period 1995-2014. The study finds that financial leverage negatively and significantly influences firm performance, as measured by Tobin's Q.

3.5 Theoretical framework

Researchers have suggested a number of theories to explain the elements that determine corporate investment decisions. Corporate finance theories are chosen based on the objectives, empirical relevance, theoretical contribution, and feasibility of the study.

3.5.1 The Neoclassical Theory of Investment

Jorgenson (1963) developed a neoclassical theory of investment that explained investment behaviour with regard to a business investment. This theory also assumes profit maximization with optimization of the capital stock. A business's aim is to raise profit, which is characterized as gross income minus input costs and the rental value of the capital given. The neoclassical investment model also suggests that investment decisions are primarily influenced by the cost of capital, and that firms' real and financial decisions are separate.

3.5.2 The Q theory of investment

James Tobin (1969) introduced The Q theory of investment, which is fundamentally based on the financial markets. He demonstrated that investment in a firm is dependent on the ratio between the replacement cost of capital and the present value of capital employed. If the q ratio is higher than 1, firms intend to grow capital, whereas if the q ratio is less than 1, the firm may decrease capital. Despite this, if the value of q is more than 1, the firm may borrow and invest more money, generating a high profit; but if the q value is lower than 1, the profit of a firm will be reduced by investing more capital (Santos & Scharfenaker, 2016).

3.5.3 Trade-off and Pecking-order theories

The trade-off theory is based on the MM theory proposed by Modigliani and Miller in 1963, who stated that the cost of debt is lower than the cost of equity as debt, provides tax benefits. The theory suggests that companies tend to borrow more debt as it increases profitability, but also leads to higher financial distress if the firm fails to fulfil its obligations.

The pecking-order theory was first introduced by Donaldson in 1961 and later confirmed by Myers and Majluf in 1984. The theory claims that a firm prioritizes using retained earnings over all other forms of financing.

4. THE HYPOTHESES DEVELOPMENT

Investment in tangible assets is defined as fixed assets to total assets (Liu & Zhang, 2020). According to Van Horne (2000) investment decisions are defined as the allocation of capital to investment proposals whose benefits will be realized in the future, such as new business or expansion goods, new equipment or buildings. The repairing assets, buying machinery, building a new plant or expanding an existing enterprise are all instances of capital spending on tangle assets. From the standpoint of determining the impact of investments on company profitability, the studies of Jiang et al. (2006), Echevarria (1997) indicate positive relationships. So, the study expects the following hypothesis.

H1: Investment in tangible assets has positive influence on firm's financial performance.
The business environment is constantly evolving due to political, governmental, and bureaucratic decisions (Gulen and Ion, 2016). As a result of the momentous amount of uncertainty, substance, and potential government policies, firm financial decisions are influenced. The study by Baker et al. (2016) found a negative association between EPU and corporate investments. Sahinoz and Cosar (2018) shows that EPU is a measure of the frequency of certain terms related to EPU in major Turkish newspapers. The study found that policy uncertainty has a negative impact on investment and economic growth in Turkey. So, the study expects the following hypothesis.

H2: Economic policy uncertainty moderates the relationship between investment in tangible assets and firm's financial performance.

Lin and Lo (2015) explore a study on Taiwanese manufacturing firms, utilizing panel data to investigate intangible expenditures. Their research findings suggest that investing in intangible assets has a positive association on firm performance. Chun and Nadiri (2016) examined the impact of intangible assets on aggregate productivity growth by analyzing firms that heavily invested in intangibles. Their findings demonstrated a considerably strengthened correlation between intangibles-focused companies and aggregate productivity growth. So, the study expects the following hypothesis.

H3: Investment in intangible assets has positive influence on firm's financial performance.
Borghesi & Chang (2020) shows that higher global economic policy uncertainty prior to CSR investments will preserves positive-R&D firms. Atanassov et al. (2015) indicates a negative influence of political uncertainty on R&D investment as a determinant of intangible assets. The high level of risk and uncertainty associated with intangible assets is a key factor that hinders the performance of market mechanisms (Dixit, 1988). Shakina

et al. (2017) observed that negative shocks of crises drive a firm to delay investments in intangible assets. So, the study expects the following hypothesis.

H4: Economic policy uncertainty moderates the relationship between investment in intangible assets and firm's financial performance.

The pecking-order theory is referred to as information asymmetry, in which company executives are thought to know more about the company's principles than potential investors. Internal funding is preferred to all other financing types in this principle (Myers and Majluf, 1984). The theory of pecking order states that businesses should put a high priority on keeping significant reserves of cash and highly liquid assets to fulfil their commitments as they emerge, without depending on outside funding sources (Chen, 2004). The link between working capital and firm performance is examined by Anton and Nucu (2021) in their analysis of 719 publicly listed Polish companies from 2007 to 2016. Their findings imply that working capital and corporate profitability have an inverted U-shaped connection. Therefore, this study expects a positive sign between investment in working capital and firm performance.

H5: Investment in working capital has positive influence on firm's financial performance.

 When EPU is high, companies reduce their capital investments (Handley and Limão, 2015; Baker et al., 2016; Bonaime et al., 2018). Dbouk et al. (2020) found that risen economic policy uncertainty produces greater payables, trade credits, and working capital, enabling companies to bind more capital to their operation. Dbouk et al. (2018) examine the impact of economic policy uncertainty on the amount of capital required by companies to run their operations. The study employs an economic uncertainty index and explores its effect on working capital and its various components. The research is based on a sample of US manufacturing firms from 1985 to 2017, and the results show that economic uncertainty leads to an increase in the levels of working capital and its components.

H6: Economic policy uncertainty moderates the relationship between investment in working capital and firm's financial performance.

Modigliani and Miller (1958) proposed that a firm's performance is independent on its capital structure. They argued that the value of a firm is determined by its operating profit, under the assumptions of no transaction costs, taxes, information asymmetry, equal personal and corporate borrowing costs, and no impact of debt on the firm's earnings before interest and taxes. In their second proposition, which accounted for the deductibility of interest for tax purposes, they concluded that capital structure can be advantageous for the firm when taxes are considered (MM, 1963). Therefore, this study expects the positive sign between financial leverage and firm performance.

H7: Financial leverage has a positive influence on firm's financial performance.

Companies may generate less income because of enhanced economic policy uncertainty, leading to a cash flow shortfall for investment. As a result, firms can opt to use debt to

cover the shortfall and achieve higher business output. Thus, leverage is an important investment tool (Danso et al., 2019). Kotcharin and Maneenop (2018) found that economic policy uncertainty in China significantly affects leverage decisions of the shipping industry in Thailand. As the EPU rises, companies may experience increased growth and subsequently leverage, due to the opportunities presented by uncertainty. So, the hypothesis of the study would be the following.

H8: Economic policy uncertainty moderates the relationship between financial leverage and firm's financial performance.

4.1 Conceptual framework

The fourth figure shows Conceptual framework of investment decision and firm performance measure through ROA and Tobin's Q under economic policy uncertainty with firm specific control variables.
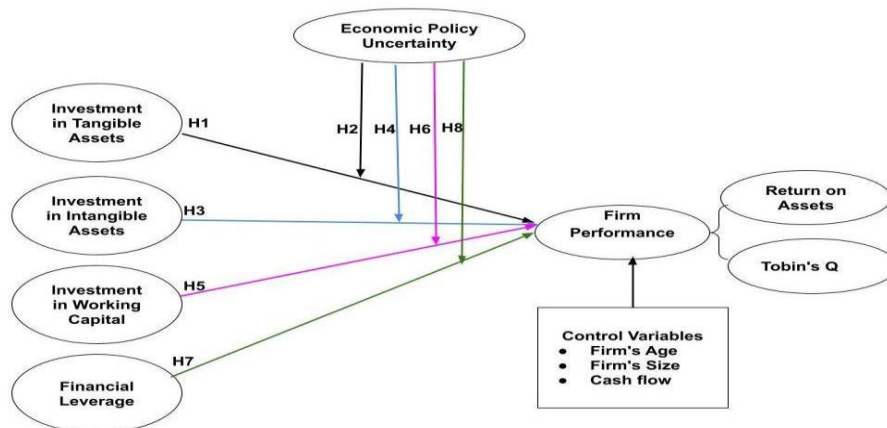
Figure 4: Conceptual framework (Source: Author's Own)

5. METHODOLOGY

The research philosophy and approach are positivist and quantitative. The research strategy and methods involve the use of secondary data, and the research techniques involve empirical analysis.

Table 1: Summary of research methodology

Research Philosophy	Positivist
Research approach/ methodology	Deductive/ Quantitative study
Research strategy/ methods	Secondary data
Research techniques	Empirical analysis
Object of analysis	Non- Financial Sector of Pakistan
Population/Sample size	363/223 Listed Non- Financial Firms
Time Horizon	10-years (2010-2019)

Data analysis	STATA **Descriptive Statistics** Mean, Standard Deviations, Maximum, and Minimum **Inferential Statistics** Correlation, Regression analysis (linear and nonlinear Panel data, Static (Pooled OLS, Random Effects, Fixed Effects) Dynamic panel System GMM Analysis)
Sampling technique	Convenience Sampling techniques, a form of nonprobability sampling

Source: Author's Own

5.1 Brief description of the Pakistani Stock Market

Pakistan Stock Exchange (PSX) had a total of around 540 listed companies, with a collective market capitalization of Rs 7.07031 trillion (equivalent to US$43 billion). At a minimum of 6.17 per cent in 2001 and a high of 45.75 per cent in 2007, stock market capitalization as a percentage of GDP. The new value is 32.97 per cent from 2016 (Pakistan Stock Exchange Limited).

5.2 Research population

The population of the study refers to the secondary data of nonfinancial sector 363 firms listed on the Pakistan Stock Exchange (PSX) and the data are collected from the financial Statements of companies on the State Bank of Pakistan (SBP) department of statistics. Table 2 shows the total population of nonfinancial sector by economic group.

Table 2: Classification of nonfinancial firms on the Pakistan Stock Exchange based on their economic group.

Name of Sector	Number of companies
1. Textiles	129
i) Spinning, weaving, finishing of textiles	115
ii) Made-up textile articles	4
iii) Other textiles n.e.s.	10
2. Sugar	29
3. Food	19
4. Chemical, chemical products and Pharmaceuticals	43
5. Manufacturing	32
6. Mineral products	9
7.Cement	17
8. Motor vehicles, trailers and auto parts	19
9. Fuel & Energy	21
10. Information, Communication & transport Services	11
11.Coke and refined petroleum products	10
12. Paper, paperboard and products	9
13. Electrical machinery and apparatus	6
14. Other services activities	9
Total:	363

5.3 Sample size

The study sample is 223 nonfinancial firms trading on the Pakistan Stock Exchange (PSX) over the period of 10 years (2010-2019) using the panel data analysis of cross-sectional time series data which are categorized into 14 sectors. While excluding companies that have gone bankrupt, merged, and been acquired during the sample period of present study. The convenience sampling techniques is used for data sampling.

5.4 Processing of data and empirical models

The dissertation uses econometric techniques to test the hypotheses. A multicollinearity test is performed on the variables through the variance inflation factor (VIF). After controlling for firm characteristics, the study moves on to using panel data and multiple regressions to explore the strength and direction of the relationships between the variables. The outlier was identified through Box plot method. The steps in data processing are shown in Figure 5.

Step 1	Clean data by managing outliers and eliminating missed observations.
Step 2	Performed statistical analysis to check the feasibility of data.
Step 3	Used appropriate techniques as generalized method of moments (GMM) to test the hypotheses with the chosen models.
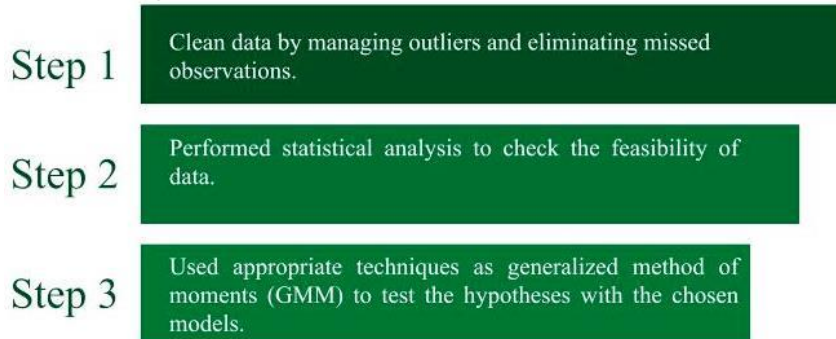
Figure 5: The steps in data processing (Source: Author's Own)

The empirical equations measured through linear and non- linear (multiple regressions). Mostly, a simple regression model as follows:

$$Y_{it} = \alpha_{it} + \beta_1 X_{it} + \varepsilon_{it} \tag{1}$$

For the OLS regression model to be valid, certain basic assumptions must be met (Gujrati, 2003; Hair et al., 2010). These assumptions for the error term include a) Normality: the residuals should have a normal distribution. b) Linearity: The relationship between the response variable and predictors should be linear. c) Homoscedasticity: The variance of the error should be constant. d) Multicollinearity: There should be no exact correlation between the predictors. A multiple regression model as follows.

$$Y_{it} = \alpha_{it} + \beta_1 X_{1it} + \beta_2 X_{2it} + \cdots \ldots + \beta_n X_{nit} + \varepsilon_{it} \tag{2}$$

The β coefficient in a regression model shows the relationship between the independent variables and the dependent variable (Modified-Jones model, 1995). However, the OLS

model can overlook the distinct characteristics of firms, leading to highly correlated errors that violate the assumptions of linear regression models. This can result in biased and inconsistent estimates and unobserved individual effects cannot be accurately estimated using OLS.

Thus, the other techniques can be applied to avoid the violence, the random effects (RE) and fixed effects (FE) models. The Hausman test determines the suitability of random effects or fixed effects model. The effects of models, i.e., OLS, fixed or random is applied, and which model is appropriate is assessed through different types of analysis tools and come up to the conclusion that which model is best suitable. Assumptions are made on the bases of significance level of each model, therefore, the important thing is that a significance level of the test < 5% that will lead us to reject the null hypothesis, it means the fixed effect model is appropriate and if p-value is greater than 5% it means we accept the null hypothesis that means that random model is appropriate at a 95% confidence level. While Breusch and Pagan Lagrange Multiplier test of analysis is used to decide wither random effects or OLS is appropriate, if p-value is less than 5 % then random effects model is appropriate otherwise OLS is appropriate.

Moreover, in regression models, the presence of endogenous variables can lead to issues with two-way correlations between the explanatory variables and the variables being explained. In such cases, FE and RE estimates may not be reliable. To resolve this problem, researchers can use the instrumental variable technique. Therefore, providing a model that has an endogeneity problem can still be useful, as long as the limitations of the model are acknowledged, and appropriate methods are used to address endogeneity. It is important to interpret the results of the model with caution and to consider alternative econometric technique for the observed associations between variables.

To address the issues of heterogeneity and autocorrelation present in unbalanced panel data, Arellano and Bover (1995) recommend the use of instrumental variables, which can be implemented through the dynamic panel GMM method. Hence, employing the J test of Hansen (1982) for testing the validity of the instruments and the Arellano-Bond AR (1) and AR (2) test to observe the presence of the second-order serial correlation in the residuals (Rashid and Waqar, 2017; Reed and Ye, 2011). The empirically models stated as below; -

Performance = (ITA, IIA, IWC, FL, EPU, FA, FS, CF) (3)

Model 1

$$ROA_{it} = \beta_0 + \beta_1 ITA_{it} + \beta_2 IIA_{it} + \beta_3 IWC_{it} + \beta_4 FL_{it} + \beta_5 EPU_{it} + \beta_6 FA_{it} + \beta_7 FS_{it} + \beta_8 CF_{it} + \eta_i + \lambda_t + \varepsilon$$
(4)

$$ROA_{it} = \beta_0 + \beta_1 ITA_{it} + \beta_2 IIA_{it} + \beta_3 IWC_{it} + \beta_4 FL_{it} + \beta_5 EPU_{it} + \beta_6 ITA * EPU_{it} + \beta_7 FA_{it} + \beta_8 FS_{it} + \beta_9 CF_{it} + \eta_i + \lambda_t + \varepsilon$$
(5)

$$ROA_{it} = \beta_0 + \beta_1 ITA_{it} + \beta_2 IIA_{it} + \beta_3 IWC_{it} + \beta_4 FL_{it} + \beta_5 EPU_{it} + \beta_6 IIA * EPU_{it} + \beta_7 FA_{it} + \beta_8 FS_{it} + \beta_9 CF_{it} + \eta_i + \lambda_t + \varepsilon$$
(6)

$$ROA_{it} = \beta_0 + \beta_1 ITA_{it} + \beta_2 IIA_{it} + \beta_3 IWC_{it} + \beta_4 FL_{it} + \beta_5 EPU_{it} + \beta_6 IWC * EPU_{it} + \beta_7 FA_{it} + \beta_8 FS_{it} + \beta_9 CF_{it} + \eta_i + \lambda_t + \varepsilon \tag{7}$$

$$ROA_{it} = \beta_0 + \beta_1 ITA_{it} + \beta_2 IIA_{it} + \beta_3 IWC_{it} + \beta_4 FL_{it} + \beta_5 EPU_{it} + \beta_6 FL * EPU_{it} + \beta_7 FA_{it} + \beta_8 FS_{it} + \beta_9 CF_{it} + \eta_i + \lambda_t + \varepsilon \tag{8}$$

Model 2

$$TOBINQ_{it} = \beta_0 + \beta_1 ITA_{it} + \beta_2 IIA_{it} + \beta_3 IWC_{it} + \beta_4 FL_{it} + \beta_5 EPU_{it} + \beta_6 FA_{it} + \beta_7 FS_{it} + \beta_8 CF_{it} + \eta_i + \lambda_t + \varepsilon \tag{9}$$

$$TOBINQ_{it} = \beta_0 + \beta_1 ITA_{it} + \beta_2 IIA_{it} + \beta_3 IWC_{it} + \beta_4 FL_{it} + \beta_5 EPU_{it} + \beta_6 ITA * EPU_{it} + \beta_7 FA_{it} + \beta_8 FS_{it} + \beta_9 CF_{it} + \eta_i + \lambda_t + \varepsilon \tag{10}$$

$$TOBINQ_{it} = \beta_0 + \beta_1 ITA_{it} + \beta_2 IIA_{it} + \beta_3 IWC_{it} + \beta_4 FL_{it} + \beta_5 EPU_{it} + \beta_6 IIA * EPU_{it} + \beta_7 FA_{it} + \beta_8 FS_{it} + \beta_9 CF_{it} + \eta_i + \lambda_t + \varepsilon \tag{11}$$

$$TOBINQ_{it} = \beta_0 + \beta_1 ITA_{it} + \beta_2 IIA_{it} + \beta_3 IWC_{it} + \beta_4 FL_{it} + \beta_5 EPU_{it} + \beta_6 IWC * EPU_{it} + \beta_7 FA_{it} + \beta_8 FS_{it} + \beta_9 CF_{it} + \eta_i + \lambda_t + \varepsilon \tag{12}$$

$$TOBINQ_{it} = \beta_0 + \beta_1 ITA_{it} + \beta_2 IIA_{it} + \beta_3 IWC_{it} + \beta_4 FL_{it} + \beta_5 EPU_{it} + \beta_6 FL * EPU_{it} + \beta_7 FA_{it} + \beta_8 FS_{it} + \beta_9 CF_{it} + \eta_i + \lambda_t + \varepsilon \tag{13}$$

Where:

i = Numbers of firms

t = sample period (2010-2019)

β_0 = the equation intercepts

β_1 = independent variables coefficients

η_i = measure unobservable heterogeneity

λ_t = time dummy variable which is equivalent to all selected companies for each year

ε = standard error

ITA= Investment in tangible assets

IIA= Investment in intangible assets

IWC= Investment in working capital

FL= Financial leverage

Interaction term = ITA*EPU, IIA*EPU, IWC*EPU, FL*EPU, is the interaction term of independent variable for it can be replaced the term moderating variable.

5.5 The variables

5.5.1 Measure investment in tangible assets (ITA)

This study measures firm's tangible capital intensity investment in tangible assets, such as fixed assets to total assets (Liu & Zhang, 2020). There has been substantiated by previous works in investment (Wu et al., 2020; Gulen and Ion, 2016; Malmendier and Tate, 2005) that they used same proxy to measure investment in tangible assets.

5.5.2 Measure investment in intangible assets (IIA)

Intangible assets, study defines a firm's intangible capital intensity in investment as the intangible assets to total assets. Many researchers such as (Arrighetti et al., 2014; de Moura et al., 2014; Luca et al., 2014) use same measure in their studies.

5.5.3 Measure investment in working capital (IWC)

Investment in working capital refers to the funds that a company allocates to maintain and increase its liquidity and efficiency. It includes current assets minus current

liabilities. Many researchers measure investment in working capital as current assets minus current liabilities to total assets such as (Dar and Dar, 2017; Tahir and Anuar, 2016; Mun and Jang, 2015). So, this study also uses same measure for investment in working capital.

5.5.4 Measure financial leverage (FL)

The impact of financial leverage on firm profitability can be either positive or negative. Different studies such as (Pan et al., 2019; Baum et al., 2009) uses measure of financial leverage as total debt to total assets. So, this study also adopted the same measure.

5.5.5 Measure of economic policy uncertainty (EPU)

Economic policy uncertainty (EPU) index is a measure of the degree of uncertainty in a country's economic policy environment (www.policyuncertainty.com). Many researchers uses EPU index in their recent empirical studies in corporate finance to evaluate the influence of EPU i.e. (Iqbal, Gan and Nadeem, 2019; Mirza and Ahsan, 2020; Yung and Root, 2019; He and Niu, 2018; KO and Lee, 2015). The study uses the yearly average of the monthly EPU index, which is defined as the ''natural logarithm of the yearly average EPU index''. The following studies also uses the same calculations of EPU index (Kim et al., 2022; Akron et al., 2020; Demir et al., 2017).

5.5.6 Measure firm performance and value (ROA and Tobin's Q)

The measure of firm performance indicators depends on the assumptions and limitations of the research and on the availability of data. There are several different measures of financial performance that can be used to evaluate a company's overall financial health and performance. Some of the most commonly used measures include Return on Assets (ROA), Tobin Q, Return on Equity (ROE), Earnings per Share (EPS), Price-to-Earnings (P/E) Ratio, Return-on Sales (ROS) and Economic Value Added (EVA) etc. ROA is an accounting-based financial ratio, commonly used in the study of agglomeration economies, as it provides a simple and unbiased indicator of a firm's earning capability and less biased indicator of profitability.

Measure Return on Assets (ROA)

Return on assets (ROA) assesses a company's profitability by comparing its net income to its total assets. Several researchers employed the same measure, such as (Abdullah & Tursoy, 2021; Fosu, 2013; Dawar, 2014; Jouida, 2018). The author also uses the same measure in this study.

Measure TOBIN Q

The Tobin Q ratio is the market value of the firm to the book value of the asset, where: the market value of the firm is the book value of debt + the market value of equity. Many scholars in corporate finance adapted Tobin's Q as a measure of firm value such as (Saddour, 2006; Dahya et al., 2008; Martnez-Sola et al., 2013 and Bai et al., 2004).

5.5.7 Measure of Control Variables

The measures of control variables are shown in Table 3: -

Table 3: Measure of control variables

Control variables	Definitions
Firm's Age	The firm's age measure as the number of years since the company was founded until the end date. (Rico & Borrás, 2020) took the same measure.
Firm's Size	Log of total assets.
Cash Flow	Net cash flow from operations to net sales.

6. FINDINGS AND DISCUSSIONS

This section depicts the results of the two empirical analyses of this thesis, which aims to assess the influence of investment on firm financial performance moderated by EPU. The data analyzed using various statistical techniques.

6.1. Descriptive statistics and quantitative analysis

Table 4 depicts descriptive analysis for the dependent, explanatory, controlling, and moderating variables of the study. The study uses a total of 2230 observations to observe the sensations of financial data from listed manufacturing firms over ten years from 2010 to 2019 to conduct the entire analysis. The overall samples mean ROA value is 0.045, with a standard deviation of 0.139. The minimum performance value in terms of ROA is -1.401, and one of the selected firms generates a maximum profit of 0.675 from their overall resource allocation. Tobin's Q has a mean value of 0.706 and a standard deviation of 1.089. However, all positive values of ROA and Tobin's Q demonstrate that Pakistani companies made profits during the sample period 2010-2019. The mean value of the EPU for manufacturing firms is 4.424 with a standard deviation of 0.238. The mean values of ITA and IIA are 0.438 and 0.027, respectively, with standard deviation of 0.236 and 0.469, and the mean values of IWC and FL for the firms are 0.009 and 0.660 with the slandered deviation of 0.433 and 0.840.

Table 4: Descriptive statistics (author's own)

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
ROA	2,230	0.045	0.139	-1.401	0.675
TOBIN	2,230	0.706	1.089	0.006	14.155
ITA	2,230	0.438	0.236	0	0.999
IIA	2,230	0.027	0.469	0	18.647
IWC	2,230	0.009	0.433	-5.148	0.995
FL	2,230	0.660	0.840	0	15.703
EPU	2,230	4.424	0.238	4.019	4.783
FS	2,230	15.373	1.914	8.176	20.457
FA	2,230	3.517	0.522	1.098	5.068
CF	2,230	0.036	0.396	-6.84	6.762

6.2 Correlation analysis

The results of a correlation analysis of the study's selected explanatory and control variables are shown in Table 5. Variance inflation factor (VIF) analysis is used to check multicollinearity problems and assess the stability of regression models. The correlation between the investment in tangible assets (ITA) and the return on assets (ROA) is -0.239 and Tobin Q is -0.260. A correlation of -0.239 between ITA and ROA suggests that a higher investment in tangible assets is associated with a lower ROA. Similarly, a correlation of -0.260 between ITA and Tobin Q suggests that a higher investment in tangible assets is associated with a lower Tobin Q. In this case, the correlation between ITA and ROA and Tobin Q is negative, which means that the relationship between these two variables is moderate and negative. On the other hand, the correlation between ROA and Tobin's Q and investment in intangible assets (IIA) is 0.003, suggesting a positive correlation between the two variables. A positive correlation means that as the investment in intangible assets increases, the return on assets and Tobin's Q also increases. In the case of investment in working capital (IWC) and ROA, the correlation coefficient (0.431) indicates a moderate positive correlation between the two variables, which means that when investment in working capital increases, the ROA is likely to increase as well. Tobin's Q (-0.184) shows a moderate negative correlation, indicating that when investment in working capital increases, Tobin's Q is likely to decrease. The correlation between financial leverage and ROA is -0.371, which indicates a negative relationship between the two variables. In the context of this study, this could be due to the high interest rate rather than to the profitability of the firm. On the other hand, the correlation between financial leverage and Tobin's q is 0.241, which indicates a positive relationship between the two variables. This suggests that as financial leverage increases, Tobin's Q value increases, indicating a higher level of market value for the company. The correlation between EPU and ROA is -0.004, which indicates a negative correlation. This means that there is a slight tendency for ROA to decrease as the EPU increases. The correlation between EPU and Tobin's Q is -0.014, which again indicates a weak negative correlation between the two variables.

Table 5: Correlation and variance inflation factor (VIF) coefficients (author's own)

	ROA	TOBIN	ITA	IIA	IWC	FL	EPU	FS	FA	CF	VIF
ROA	1										
TOBIN	-0.206	1									
ITA	-0.239	-0.260	1								1.22
IIA	0.003	0.003	-0.047	1							1.01
IWC	0.431	-0.184	-0.319	0.026	1						1.84
FL	-0.371	0.241	0.0001	-0.018	-0.590	1					1.71
EPU	-0.004	-0.014	-0.024	0.029	-0.014	0.016	1				1.01
FS	0.278	-0.223	-0.158	-0.020	0.233	-0.277	0.0002	1			1.15

| FA | 0.069 | -0.197 | -0.079 | 0.058 | 0.006 | -0.026 | -0.008 | 0.127 | 1 | | 1.03 |
| CF | 0.097 | -0.084 | 0.015 | -0.0008 | 0.100 | -0.066 | -0.059 | 0.119 | -0.030 | 1 | 1.03 |

6.3 Empirical Results from the Fixed-Effects Model

Table 6 shows the result of all three models, pooled OLS, random effects, and fixed effects. The beta values of ITA have negative values of -0.041 and -1.005, which is statistically significant at 0.01, which means it has a negative relationship with ROA and Tobin Q, respectively. The negative and significant coefficient of investment in tangible assets indicates that manufacturing firms have a significant amount of fixed assets that impact company performance. This also shows that a higher tangibility ratio lowers a firm's performance. This argument is supported by the following studies (Thanh, & Ha 2013; Zeitun, & Saleh 2015; Nazir, Azam & Khalid 2021). In the first model, the coefficient value of IIA is -0.013 which is statistically significant at 0.01. It shows a negative relationship with ROA (Huang, & Liu, 2021; Ionita, & Dinu, 2021; Ge, & Xu, 2021). On the other hand, it has an insignificant relationship with Tobin's Q. The beta value of IWC has a positive value of 0.065 with ROA, which means it has a positive relationship with ROA. It ensures that a business has enough cash flow to cover its on-going costs and short-term obligations. Companies can increase their profits by implementing an excellent working capital management system. This argument is supported by the following studies (Aktas, Croci & Petmezas 2015; Sudiyatno, Puspitasari & Sudarsi 2017; Abdulnafea, Almasria & Alawaqleh 2022). In the second model, IWC has a negative beta value of -0.251 with Tobin's Q, meaning it has a negative relationship with Tobin's Q. This argument is also supported by (Pais & Gama, 2015; Alipour, 2011). The beta value of FL is -0.031 with ROA (Salawu, 2007; Tian and Zeitun, 2007; Chen, 2004). On the contrary, the coefficient value of FL has a positive and significant value of 0.187, as the value of FL increased by 18.7%, the firm's performance improves and vice versa. By increasing the debts, it has a positive impact on the firm performance measure Tobins' Q (Robb and Robinson (2010); Berger and Patti 2006; Margaritis and Psillaki 2010; Cai and Zhang 2011). The beta value of the EPU has a negative value of -0.092 significant at 0.1. Furthermore, the coefficient value of firm size (FS) is negative and statistically significant at 0.01 with ROA as the value of size increased by -3.4% the performance of firms get the drop and vice versa. The Age has a positive coefficient as the age of the firm increased the firm's financial performance also and vice versa. The beta value of CFO is -0.067 mean CFO has inverse effects on the Firms performance.

Table 6: The result of static panel (Equations 4 and 9)

	Model (1) ROA			Model (2) TOBINQ		
Variables	Pooled OLS	RE	FE	Pooled OLS	RE	FE

ITA	-0.082***	-0.064***	-0.041**	-1.752***	-1.150***	-1.005***
	(0.011)	(0.015)	(0.017)	(0.094)	(0.101)	(0.105)
IIA	-0.003	-0.003	-0.013***	0.002	0.021	0.025
	(0.005)	(0.004)	(0.005)	(0.043)	(0.030)	(0.030)
IWC	0.076***	0.061***	0.065***	-0.581***	-0.317***	-0.251***
	(0.007)	(0.008)	(0.009)	(0.063)*	(0.054)	(0.055)
FL	-0.031***	-0.040***	-0.051***	0.058	0.181***	0.187***
	(0.003)	(0.004)	(0.005)	(0.031)	(0.029)	(0.030)
EPU	0.0009	-7.5E-05	0.0008	-0.142*	-0.113**	-0.092*
	(0.010)	(0.008)	(0.008)	(0.084)	(0.052)	(0.051)
FS	0.009***	0.001	-0.034***	-0.106***	-0.028	-0.011
	(0.001)	(0.002)	(0.005)	(0.011)	(0.021)	(0.032)
FA	0.009*	-0.003	-0.016	-0.422***	0.246***	1.053***
	(0.004)	(0.009)	(0.019)	(0.039)	(0.077)	(0.114)
CF	0.016*	0.002	-0.004	-0.103**	-0.073**	-0.067*
	(0.006)	(0.005)	(0.005)	(0.051)	(0.036)	(0.035)
Constant	-0.091	0.089	0.680***	5.202***	1.175*	-2.097***
	(0.055)	(0.061)	(0.093)	(0.438)	(0.454)	(0.555)
R2	0.252	0.230	0.112	0.238	0.118	0.146
Hausman test			(102.0)***			(116.3)***
Number of Observations	2230	2230	2230	2230	2230	2230

Notes: The standard errors are enclosed in brackets, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. (Source: Author's own).

In Table 7, the second regression model, the ITA, interacts with the EPU. Independent variables include ITA, IIA, IWC, FL, EPU, FS, FA, CF and (ITA * EPU) (Supatmi et al., 2019). When (ITA*EPU) is used, the first interaction variable indicates a coefficient value of 0.036 with ROA and 0.017 with Tobin's Q, which is statically insignificant. The beta value of IIA is -0.130 and FL is -0.051 statically significant at 0.1 and 0.01, showing a negative relationship with ROA, but the coefficient value of IWC is 0.065, which indicates a positive association with ROA significant at 0.01.

Table 7: The result of static panel with the first interaction (Equations 5 and 10)

	Model (1) ROA			Model (2) TOBINQ		
Variables	Pooled OLS	RE	FE	Pooled OLS	RE	FE
ITA	-0.404**	-0.299*	-0.204	-2.256	-1.030	-1.084
	(0.200)	(0.166)	(0.164)	(1.582)	(1.00)	(0.983)
IIA	-0.003	-0.003	-0.130*	0.003	0.020	0.025
	(0.005)	(0.004)	(0.005)	(0.043)	(0.030)	(0.030)
IWC	0.076***	0.061***	0.065***	-0.582***	-0.317***	-0.251***
	(0.007)	(0.008)	(0.009)	(0.063)	(0.054)	(0.055)
FL	-0.031***	-0.040***	-0.051***	0.058*	0.181***	0.187***
	(0.003)	(0.004)	(0.005)	(0.031)	(0.029)	(0.030)
EPU	-0.032	-0.023	-0.015	-0.192	-0.101	-0.100
	(0.022)	(0.018)	(0.018)	(0.178)	(0.112)	(0.109)
FS	0.010***	0.001	-0.034***	-0.106***	-0.028	-0.011

	(0.001)	(0.002)	(0.005)	(0.011)	(0.021)	(0.032)
FA	0.009*	-0.003	-0.016	-0.422***	0.246***	1.053***
	(0.004)	(0.008)	(0.019)	(0.039)	(0.077)	(0.115)
CF	0.0167*	0.002	-0.004	-0.102**	-0.073**	-0.067*
	(0.006)	(0.005)	(0.005)	(0.051)	(0.036)	(0.035)
ITA*EPU	0.072	0.052	0.036	0.113	-0.026	0.017
	(0.045)	(0.037)	(0.037)	(0.356)	(0.225)	(0.218)
Constant	0.051	0.192**	0.749***	5.425***	1.121*	-2.063**
	(0.104)	(0.095)	(0.116)	(0.824)	(0.629)	(0.694)
R2	0.253	0.371	0.113	0.238	0.118	0.146
Hausman test			(112.20)***			(101.29)***
Number of Observations	2230	2230	2230	2230	2230	2230

Notes: The standard errors are enclosed in brackets, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. (Source: Author's own).

In the third equation in Table 8, the beta value of ITA is (-1.005) and is highly significant at 0.01, indicating that if investment in tangible assets decreases, the profitability of the firm increases and vice versa. The beta value of IWC is (-0.254) and significant at the 0.01 level shows that IWC has an inverse relation with Tobin's Q of the firm. On the other hand, financial leverage shows a positive and significant link with firm performance. It indicates that if investment in working capital increases, then firm performance also rises. The beta value of the EPU is negative (-0.091), which is statistically significant at 0.1 with Tobin's Q. Finally, the interaction term of IIA*EPU has an insignificant influence on firm performance.

Table 8: The results of static panel with second interaction (Equations 6 and 11)

	Model (1) ROA			Model (2) TOBINQ		
Variables	Pooled OLS	RE	FE	Pooled OLS	RE	FE
ITA	-0.082***	-0.064***	-0.041**	-1.750***	-1.151***	-1.005***
	(0.011)	(0.015)	(0.017)	(0.094)	(0.101)	(0.105)
IIA	-0.168	-0.135	-0.207	1.515	0.576	0.483
	(0.187)	(0.154)	(0.153)	(1.478)	(0.936)	(0.912)
IWC	0.076***	0.061***	0.066***	-0.583***	-0.320***	-0.254***
	(0.007)	(0.008)	(0.009)	(0.063)	(0.054)	(0.055)
FL	-0.031***	-0.040***	-0.051***	0.058*	0.181***	0.187***
	(0.003)	(0.004)	(0.005)	(0.031)	(0.029)	(0.030)
EPU	0.003	-0.005	0.001	-0.137	-0.111**	-0.091*
	(0.010)	(0.008)	(0.008)	(0.084)	(0.052)	(0.051)
FS	0.010***	0.001	-0.034***	-0.106***	-0.028	-0.009
	(0.001)	(0.002)	(0.005)	(0.011)	(0.021)	(0.033)
FA	0.009*	-0.003	-0.015	-0.421***	0.243**	1.051***
	(0.004)	(0.009)	(0.019)	(0.039)	(0.076)	(0.115)
CF	0.016**	0.002	-0.004	-0.102**	-0.073**	-0.067*
	(0.006)	(0.005)	(0.005)	(0.051)	(0.036)	(0.035)
IIA*EPU	0.035	0.027	0.041	-0.322	-0.118	-0.097

	(0.039)	(0.032)	(0.032)	(0.314)	(0.198)	(0.193)
Constant	-0.088	0.092	0.688***	5.176***	1.170*	-2.115***
	(0.055)	(0.062)	(0.093)	(0.439)	(0.454)	(0.193)
R2	0.252	0.369	0.113	0.238	0.0118	0.146
Hausman test			(260.81)***			(140.75)**
Number of Observations	2230	2230	2230	2230	2230	2230

Notes: The standard errors are enclosed in brackets, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. (Source: Author's own).

Table 9 with equations 7 and 12 regressed with the interaction term of IWC*EPU. The independent variables include ITA, IIA, IWC, FL, EPU, FS, FA, CF and (IWC*EPU), (Supatmi et al., 2019). The beta value of IWC*EPU is 0.038, which is statistically significant at 0.05. It indicates a positive interactional effect of economic policy uncertainty on investment in working capital. When economic policy rises, the level of investment in working capital also increases in Pakistan's manufacturing sector. Demir and Ersan (2017) also showed a positive link between EPU in their study.

Table 9: The results of static panel with the third interaction (Equations 7 and 12)

	Model (1) ROA			Model (2) TOBINQ		
Variables	Pooled OLS	RE	FE	Pooled OLS	RE	FE
ITA	-0.082***	-0.065***	-0.043**	-1.753***	-1.144***	-0.999***
	(0.011)	(0.015)	(0.017)	(0.094)	(0.101)	(0.105)
IIA	-0.003	-0.003	-0.013*	0.002	0.021	0.025
	(0.005)	(0.004)	(0.005)	(0.043)	(0.030)	(0.030)
IWC	0.081	-0.051	-0.107	-0.723	0.309	0.387
	(0.103)	(0.087)	(0.087)	(0.821)	(0.533)	(0.520)
FL	-0.031***	-0.040***	-0.050***	0.058**	0.180***	0.186***
	(0.003)	(0.004)	(0.005)	(0.031)	(0.029)	(0.030)
EPU	0.009	-2.9E-05	0.009	-0.142*	-0.113**	-0.093*
	(0.010)	(0.008)	(0.008)	(0.084)	(0.05)	(0.051)
FS	0.010***	0.001	-0.034***	-0.106***	-0.027	-0.008
	(0.001)	(0.002)	(0.005)	(0.011)	(0.021)	(0.033)
FA	0.009**	-0.003	-0.014	-0.422***	0.244***	1.047***
	(0.004)	(0.008)	(0.019)	(0.039)	(0.077)	(0.115)
CF	0.016**	0.003	-0.004	-0.102**	-0.074**	-0.067*
	(0.006)	(0.005)	(0.005)	(0.051)	(0.036)	(0.035)
IWC*EPU	-0.001	0.025	0.038**	0.031	-0.139	-0.142
	(0.023)	(0.019)	(0.019)	(0.184)	(0.118)	(0.115)
Constant	-0.091	0.085	0.683***	5.202***	1.166**	-2.109***
	(0.055)	(0.061)	(0.093)	(0.438)	(0.454)	(0.555)
R2	0.252	0.370	0.114	0.238	0.119	0.147
Hausman test			(140.75)***			(88.96)***
Number of Observations	2230	2230	2230	2230	2230	2230

Notes: The standard errors are enclosed in brackets, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. (Source: Author's own).

Table 10 with equations 8 and 13 with model 1, ROA, and model 2, Tobin's Q regressed with the interaction term of FL*EPU. The independent variables include ITA, IIA, IWC, FL, EPU, FS, FA, and (FL * EPU) (Supatmi et al., 2019). The beta value of ITA is -0.044 and -0.992, indicating a negative relationship between ROA and Tobin's Q. The beta value of IIA is -0.013 with ROA. The coefficient values of the EPU are positive 0.025 with ROA and negative -0.199 with Tobin's Q, indicating that increased economic policy uncertainty decreases firm performance. The interaction of FL*EPU has a negative value of -0.036 with ROA and 0.160 with Tobin's Q, which are significant at 0.01.

Table 10: The results of static panel with the fourth interaction (Equations 8 and 13)

Variables	Model (1) ROA			Model (2) TOBINQ		
	Pooled OLS	RE	FE	Pooled OLS	RE	FE
ITA	-0.083***	-0.066***	-0.044**	-1.747***	-1.137***	-0.992***
	(0.011)	(0.015)	(0.017)	(0.094)	(0.101)	(0.105)
IIA	0.003	0.003	-0.013***	0.003	0.021	0.024
	(0.005)	(0.004)	(0.005)	(0.043)	(0.030)	(0.030)
IWC	0.074***	0.058***	0.061***	-0.573***	-0.302***	-0.235***
	(0.007)	(0.008)	(0.009)	(0.063)	(0.054)	(0.055)
FL	0.160**	0.133***	0.112*	-0.633	-0.540**	-0.531**
	(0.052)	(0.043)	(0.042)	(0.412)	(0.262)	(0.256)
EPU	0.029**	0.026**	0.025**	-0.247**	-0.220***	-0.199**
	(0.013)	(0.010)	(0.010)	(0.105)	(0.065)	(0.063)
FS	0.010***	0.001	-0.033***	-0.106***	-0.030	-0.014
	(0.001)	(0.002)	(0.005)	(0.011)	(0.021)	(0.032)
FA	0.009**	-0.003	-0.017	-0.422***	0.249***	1.055***
	(0.004)	(0.008)	(0.019)	(0.039)	(0.077)	(0.114)
CF	0.017*	0.003	-0.004	-0.104**	-0.074**	-0.068*
	(0.006)	(0.005)	(0.005)	(0.051)	(0.036)	(0.035)
FL*EPU	-0.043***	-0.039***	-0.036***	0.156*	0.161***	0.160***
	(0.011)	(0.009)	(0.009)	(0.093)	(0.058)	(0.056)
Constant	-0.219***	-0.032	0.562***	5.666***	1.662***	-1.581***
	(0.065)	(0.068)	(0.097)	(0.518)	(0.488)	(0.583)
R2	0.256	0.378	0.119	0.239	0.122	0.149
Hausman test			(122.7)***			(101.37)***
Number of Observations	2230	2230	2230	2230	2230	2230

Notes: The standard errors are enclosed in brackets, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
(Source: Author's own).

6.4 The results of the System Generalized Method of Moments estimation method (SGMM)

This study utilized a two-step system GMM dynamic panel data estimation method to determine the relationships between the study variables. To analyze the interdependence of the study variables, we applied the Generalized Method of Moments System Estimation (GMM), as suggested by Arellano and Bover (1995) and Blundell and Bond

(1998). To mitigate econometric issues such as endogenous problems or unobserved heterogeneity, we employed several data processing techniques.

Table 11 presents the result of the dynamic panel data of the two-step system GMM of model 1, Return on Assets (ROA), regressed with independent variables ITA, IIA, IWC, FL, EPU, FS, FA, and CF. The first column shows the results of all variables without a moderating effect. The coefficient value of ITA is negative -0.028, which is statistically significant at 0.1. It indicates a negative relationship between ITA and firm performance. The negative and significant coefficient of ITA shows that nonfinancial firms have a significant amount of fixed assets that impact company performance. This argument is supported by the following studies (Thanh & Ha, 2013; Zeitun & Saleh, 2015; Nazir, Azam & Khalid, 2021). The coefficient value of IIA is -0.008, which is statistically significant at 0.01 and negatively affects firm performance, suggests that an increase in investment in intangible assets results in a decrease in the performance of Pakistani manufacturing firms. The studies of the following are also consistent with the same results (Nguyen-Anh et al., 2022; Ferdaous et al., 2019; Fang & Lin, 2010). The investment in working capital (IWC) has a positive coefficient value of 0.070, which is significant at 0.01 and indicates a positive relationship with ROA. Different studies also show the same results (Aktas, Croci & Petmezas 2015; Sudiyatno, Puspitasari & Sudarsi 2017; Abdulnafea, Almasria & Alawaqleh 2022).

The beta value of financial leverage (FL) is statistically significant and negative -0.026, which means that it has a negative relationship with firm performance. This is due to the fact that debt financing often comes with higher interest costs and other related expenses, which can lower a firm's profitability. Furthermore, in the context of Pakistan, there may be other factors, such as the overall financial and economic environment, the availability of credit, and the legal and regulatory framework that influence the relationship between FL and firm performance. The studies of (Ibhagui & Olokoyo, 2018; Raza, 2013; Kale, 2014; Singh & Faircloth, 2005) also documented the same results. The beta value of the EPU is negative -0.018 and statistically significant at 0.01 with ROA. It shows a negative relationship with firm performance. The same result is supported by the following studies (Umer Iqbal et al., 2020; Baker et al., 2016; Gulen & Ion, 2016; Ko & Lee, 2015; Sahinoz & Cosar, 2018). The age and size of the firm are crucial key firm-specific determinants affecting profitability. The finding shows that the age and size of a firm have a negative and significant influence on firm performance (Pervan, & Ćurak, 2017).

Column 2 of Table 11 used the interaction term of ITA with EPU. The independent variables include ITA, IIA, IWC, FL, EPU, FS, FA, CF and (ITA * EPU) (Supatmi et al., 2019). The coefficient value of (ITA*EPU) is positive 0.0387, which is statistically significant at 0.1. In column 3 of Table 11, the coefficient value of IIA*EPU is 0.043, which is significant at 0.01. The interaction of (IIA*EPU) showing a positive relationship with Return on Assets (ROA) in the context of Pakistan is due to several reasons. One is

that manufacturing firms invest heavily in intangible assets, such as brand building, research and development, or patents, etc., and are better equipped to navigate uncertain economic conditions. In the context of increasing EPU, these firms may be able to leverage their intangible assets to maintain or even increase their profitability, as measured by ROA. The interaction of (IWC*EPU) showing a negative relationship with return on assets (ROA) in the context of Pakistan for several reasons. Wider working capital investment levels may increase a firm's exposure to economic policy instability. The last column of Table 11 shows the results of the fourth interaction of the FL*EPU variable and regressed with independent variables, including ITA, IIA, IWC, FL, EPU, FS, FA, and CF. The beta value of FL*EPU is positive, 0.027, which is statistically significant at 0.01. It shows positive moderating effects of economic policy uncertainty between financial leverage and firm performance. These results are consistent with (Bajaj et al., 2021; Wang et al., 2014; Çolak et al., 2018; Qiu & Li, 2017). Table 11 also shows that the serial correlation test AR (1) is less than 0.1 and AR (2) is greater than 0.1 and the result of the sargan test supports the appropriateness of the dynamic two-step GMM estimation.

Table 11: The results of SGMM dynamic panel model 1 with interactions

| Variables | Model (1) ROA | | | | |
	2 Step sys GMM	1st interaction 2 Step sys GMM	2nd interaction 2 Step sys GMM	3rd interaction 2 Step sys GMM	4th interaction 2 Step sys GMM
ROA = L	0.253***	0.252***	0.253***	0.256***	0.260***
	(0.012)	(0.012)	(0.012)	(0.011)	(0.012)
ITA	-0.028*	-0.196**	-0.027*	-0.026*	-0.025*
	(0.014)	(0.096)	(0.014)	(0.013)	(0.014)
IIA	-0.008***	-0.008***	-0.214***	-0.008***	-0.009
	(0.001)	(0.001)	(0.052)	(0.001)	(0.002)
IWC	0.070***	0.068***	0.073***	0.395***	0.080***
	(0.010)	(0.010)	(0.011)	(0.057)	(0.012)
FL	-0.026***	-0.028***	-0.026***	-0.0289***	-0.147***
	(0.005)	(0.006)	(0.007)	(0.005)	(0.015)
EPU	-0.018***	-0.034***	-0.018***	-0.012**	-0.033***
	(0.004)	(0.010)***	(0.005)	(0.004)	(0.006)
FS	-0.015***	-0.015	-0.016***	-0.016***	-0.015***
	(0.006)	(0.005)	(0.006)	(0.005)	(0.005)
FA	-0.051***	-0.050*	-0.048*	-0.050**	-0.049*
	(0.019)	(0.020)	(0.0196)	(0.020)	(0.019925)
CF	0.002	0.005	0.002	0.001	0.002
	(0.005)	(0.006)	(0.007)	(0.005)	(0.006)
ITA*EPU		0.0387*			
		(0.022)			
IIA*EPU			0.043***		
			(0.010)		
IWC*EPU				-0.072***	
				(0.011)	

					FL*EPU
FL*EPU					0.027***
					(0.004)
Constant	0.557***	0.631***	0.579***	0.543***	0.623***
	(0.093)	(0.103)	(0.093)	(0.095)	(0.094)
Sargan test/ p-value	209.9/ 0.33	207.3/ 0.38	207.7/ 0.37	208.3/ 0.36	208.2/ 0.36
AR (1) / p-value	-3.60/ 0.0003	-3.59/ 0.0003	-3.7/ 0.000	-3.56/ 0.0004	-3.57/ 0.0003
AR (2)/ p-value	1.37/0.17	1.40/0.16	1.41/0.15	1.38/0.16	1.21/0.22
Number of Observations	2007	2007	2007	2007	2007

AR represents autocorrelation 1 and 2 order test. Notes: The standard errors are enclosed in brackets, *** p < 0.01, ** p < 0.05, * p < 0.1. (Source: Author's own).

The results of Table 12, column 1 system dynamic panel estimation of model 2 (Tobin's Q) show that investment decisions from the non-financial sector significantly influence financial performance. The coefficient value of investment in tangible assets (ITA) is -0.693, which is significant at 0.01, indicating a negative and statistically significant influence on firm market performance. This argument is supported by the following studies (Thanh & Ha, 2013; Zeitun & Saleh, 2015; Nazir, Azam & Khalid, 2021). Investment in intangible assets (IIA) shows a positive and significant impact on firm performance. The beta value of IIA is positive 0.026 which is significant at 0.01 and exhibits that investment in intangible assets provides more returns to firm. The findings of our study are consistent with those of Godfrey and Koh (2001). The coefficient value of investment in working capital (IWC) is negative -0.030. It shows that when investment in working capital higher than firm performance falls due to shorten cash flow, but this relationship is found insignificant. The dynamic panel regression also shows a positive coefficient value of financial leverage of 0.202, which is statistically significant at 0.01, implying that financing through debt enhances firm performance. The coefficient value of economic policy uncertainty is -0.009 and when applied interaction effects of other variables, it shakes a beta value of 0.181 and 0.152 which is significant at 0.01. The SGMM panel data regression findings shows that firm's age and Tobin's Q have a positive and significant relationship. This indicates that a company's founding year significantly impacts the firm's financial performance. The value of the cash flow is negative -0.062, which is statistically significant at 0.01, indicating that firms should avoid unnecessary investments or improper planning that negatively impacts firm performance.

Column 2 shows a significant positive effect of the moderating variables (ITA*EPU), where all the response variables respond positively. When economic policy uncertainty is high, investors can become more cautious and risk-averse, which can make it more difficult for firms to secure funding for investment in tangible assets. The beta value of the second interaction variable IIA*EPU is -0.080 which is significant at 0.01 and shows a negative impact of economic policy uncertainty on investment in intangible assets and firm performance (Bhattacharya et al. 2017). The coefficient value of the third interaction

variable IWC*EPU is 0.371 which is statistically significant. It shows the positive impact of economic policy uncertainty on investment in working capital and firm performance. The following study is also consistent with the same argument (Dbouk, Moussawi-Haidar & Jaber, 2020). The interaction of financial leverage and economic policy uncertainty (FL*EPU) indicates a negative value of beta -0.233 which is significant at 0.001. It shows that economic policy uncertainty has a negative and statistically significant impact on financial leverage and firm performance. The studies of the following authors are also consistent (Pan et al., 2019; Zhang et al., 2015). The Sargan test approved the significance of the instruments, those included in the econometric specifications are exogenous because the P-value is more than 10%, serial correlation test AR (1) is less than 0.1 and AR (2) is greater than 0.1, which means that the error terms during these time periods are not correlated with the lag variable. The summary of the hypotheses tested is shown in Table 13.

Table 12: The results of SGMM dynamic panel model 2 with interactions

Variables	Model (2) Tobin's Q				
	2 Step sys GMM	1st interaction 2 Step sys GMM	2nd interaction 2 Step sys GMM	3rd interaction 2 Step sys GMM	4th interaction 2 Step sys GMM
TOBINQ = L	0.550***	0.567***	0.551***	0.562***	0.556***
	(0.010)	(0.010)	(0.0101)	(0.009)	(0.010)
ITA	-0.693***	-2.30***	-0.692***	-0.803***	-0.715***
	(0.113)	(0.388)	(0.113)	(0.108)	(0.103)
IIA	0.026***	0.019***	0.405**	0.025***	0.0254***
	(0.004)	(0.004)	(0.124)	(0.004)	(0.004)
IWC	-0.030	0.006	-0.044	-1.742***	-0.019
	(0.042)	(0.043)	(0.043)	(0.203)	(0.0366)
FL	0.202***	0.168***	0.199***	0.191***	1.260***
	(0.032)	(0.032)	(0.0321)	(0.030)	(0.294)
EPU	-0.009	0.181***	-0.007	0.007	0.152***
	(0.011)	(0.043)	(0.011)	(0.014)	(0.041)
FS	0.032**	0.006***	0.037**	0.029**	0.034**
	(0.015)	(0.015)	(0.015)	(0.014)	(0.015)
FA	0.063*	0.110***	0.053	0.105**	0.088**
	(0.037)	(0.038)	(0.037)	(0.041)	(0.039)
CF	-0.062***	0.062***	-0.062***	-0.059***	-0.057***
	(0.010)	(0.010)	(0.010)	(0.0105)	(0.0103)
ITA*EPU		0.425***			
		(0.100)			
IIA*EPU			-0.080***		
			(0.026)		
IWC*EPU				0.371***	
				(0.048)	

FL*EPU					-0.233***
					(0.0620)
Constant	-0.232	0.673**	-0.285	-0.382	-1.09***
	(0.245)	(0.315)	(0.248)	(0.239)	(0.280)
Sargan test/ p-value	218.9/ 0.19	217.02/ 0.22	218.41/ 0.20	218.59/ 0.20	218.10/ 0.21
AR (1) / p-value	-3.06/ 0.002	-3.09/ 0.002	-3.06/ 0.002	-3.01/ 0.002	-3.05/ 0.0022
AR (2)/ p-value	1.07/0.28	1.05/0.29	1.07/0.28	0.956/0.33	1.04/0.29
Number of Observations	2007	2007	2007	2007	2007

AR represents autocorrelation 1 and 2 order test. Notes: The standard errors are enclosed in brackets, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. (Source: Author's own).

Table 13: Summary of the hypotheses tested (source: Author's own)

	Hypotheses	Findings			
		Model 1 ROA		Model 2 Tobin's Q	
H1	Investment in tangible assets has a positive influence on firm financial performance.	Rejected	-	Rejected	-
H2	Economic policy uncertainty moderates the relationship between investment in tangible assets and firm's financial performance.	Failed to reject	+	Failed to reject	+
H3	Investment in intangible assets has a positive influence on firm financial performance.	Rejected	-	Failed to reject	+
H4	Economic policy uncertainty moderates the relationship between investment in intangible assets and firm's financial performance.	Failed to reject	+	Failed to reject	-
H5	Investment in working capital has a positive influence on firm financial performance.	Failed to reject	+	Rejected	-
H6	Economic policy uncertainty moderates the relationship between investment in working capital and firm's financial performance.	Failed to reject	-	Failed to reject	+
H7	Financial leverage has a positive influence on firm financial performance.	Rejected	-	Failed to reject	+
H8	Economic policy uncertainty moderates the relationship between financial leverage and firm financial performance	Failed to reject	+	Failed to reject	-

7. DISCUSSION

Pakistan is considered a suitable context because the firm's investment decisions are influenced by vulnerable fluctuations in economic policy uncertainty. The result of investment in tangible assets shows a negative and statistically significant influence on both the measures of financial performance (ROA) and (Tobin's Q). In the context of

this study, this negative relationship due to investment in tangible assets such as property, plant, and equipment is more expensive or requires higher competition, and companies may not be able to leverage these assets effectively to improve their return on assets. This argument also contributes to the literature as many studies of the following research are consistent with the same result (Thanh & Ha, 2013; Zeitun & Saleh, 2015; Nazir, Azam & Khalid, 2021).

The study examined the moderating role of EPU in investment decisions and financial performance of a nonfinancial sector. In the context of this study, the moderating result of (ITA*EPU) economic policy uncertainty and investment in tangible assets indicates a positive and significant impact on both ROA and Tobin's Q measures of firm financial performance. The positive relationship is due to the fact that companies have invested in tangible assets may be better prepared to withstand economic uncertainty, as these assets tend to provide a more stable source of income. The moderating result of (IIA*EPU) and (FL* EPU) also indicates a significant positive impact on the firm's financial performance (ROA). This also confirms the moderating impact of EPU and investment in intangible assets and financial leverage on the financial performance of the nonfinancial sector. Furthermore, the interaction of (IWC*EPU) showing a negative relationship with Return on Assets (ROA) in the context of Pakistan due to several reasons. The higher level of investment in working capital increases the exposure of a firm to economic policy instability. In an environment of increasing EPU, these firms faced difficulty in efficiently managing their working capital, leading to reduced profitability as measured by ROA.

8. LIMITATION OF THE STUDY

The study presented robust evidence that economic policy uncertainty plays a moderating role in the relationship between investment decisions and firm financial performance in developing economies. Nonetheless, some limitations were observed in this study. Due to the extended period of observation, the sample size is relatively small, and there was a turnover of firms, with some exiting the market and new ones entering, leading to missing data on some market players. The sample includes all listed firms excluding the financial institutions.

9. CONTRIBUTION

9.1 Contribution to theory

The major contribution is to fulfil the contextual gap. The earlier papers of Wu, Zhang & Zou, (2020) and Chen, Lee, & Zeng (2019) focus on developed countries like the USA, Australia, and European countries. Furthermore, the study by Kong, Wang & Peng (2022) on the fast-growing country analyzed the impact of economic policy uncertainty and investment in the Chinese context, but there are no studies on this issue in Pakistan. The trade-off theory (Myers, 1977) posits that the cost of debt is lower than the cost of equity, due to the tax benefits of debt. In this study, the finding suggests that the firm can

enhance their market performance and shareholder value by increasing its leverage ratio. This result supports the trade-off theory in the Pakistani context, which represents a developing economy. Contrarily, the pecking order theory of Myers and Majluf (1984) argues that a firm will prioritize using its retained earnings over other sources of financing, and once these earnings are depleted, the company will then turn to external financing sources. So, the finding suggests that the firm can enhance its financial performance investing through retained earning rather than debt. This result supports the pecking order theory in the context of developed economies. In the context of this study, working capital has a positive impact on the financial performance of a firm. In developing countries, it has always been essential to achieve optimal working capital as the nonfinancial sector widely contributes to the economy in terms of tax revenue generation. So, the result of the study also confirms that economic policy uncertainty moderates' investment negatively in tangible assets, which ultimately affects firm financial performance in the context of Pakistan. The Q theory of investment also confirmed the results of the study, as investment in intangible assets positively influences market performance of the nonfinancial sector of Pakistan, which contributes to the existing literature.

9.2. Contribution to Practice

In practice, the study highlights the significance for policy makers to ensure the transparency, stability, and consistency of macroeconomic policies. The higher EPU affects the corporate investment environment, and its components, in a direction more harmful to the operating and financial performance of firms. So, it can be achieved by reducing policy uncertainty.

The results of the current study are helpful to managers, researchers, investors, stakeholders, and regulators. The findings are significant for investors, as they evaluate corporate performance when deciding investment decisions. The results have implications for managers and policymakers who decide how to improve their organizations' financial performance. Therefore, the findings are also crucial for academics.

10. CONCLUSION

In the context of this study, investment in tangible assets has a negative and statistically significant impact on firm performance. It shows that a higher tangibility ratio lowers the non-financial sector's profitability. Intangible intensity positively and significantly influences a firm market performance. Financial leverage has a negative impact on ROA as a measure of firm performance and a positive influence on Tobin's Q. It means that financial leverage raises the cost of debt, as suggested by the pecking order theory, but it enhances the firm's market performance, which is beneficial for external stakeholders, and the trade-off theory also supports this argument. The system dynamic regression result indicates that EPU has a negative significant influence on firm performance. It

suggests that firms decline its investments when the EPU rises in the economy. Those investments' profit (Loss) is related to the firm performance.

Moreover, the moderating analysis of the current study shows that the interaction of EPU significantly and positively moderates the relationship between ITA, IIA and FL, and negatively and statistically significantly moderates IWC with (ROA) a measure of firm performance. On the contrary, the interaction of EPU moderates IIA and FL significantly and negatively, but has a positive influence with ITA and IWC with Tobin's Q. The result of the study confirms that EPU significantly moderates the relationship between investment decisions and firm financial performance in the non-financial sector of Pakistan. Age, size, and cash flow of the company are the key factors of its financial performance among the listed control variables. Although firm size and age also have a positive effect on firm performance.

Recommendations for future research

The current study focused on examining the link between organizational performance, EPU, and investment decisions. However, there are many opportunities to conduct additional research on this subject. A larger time frame and more countries can be considered in future studies. Numerous economic, cultural, social, and financial variables and elements were left out of the current study. It is advised that more research be done in the areas of financial firms. Researchers advise future researchers to decide on other issues or elements that can influence investment decisions using different business performance metrics.

11. REFERENCES

Abdulnafea, A. L., Almasria, N. A., & Alawaqleh, Q. (2022). The effect of working capital management and credit management policy on jordanian banks' financial performance. Banks and Bank Systems, 16(4), 229-239.

Abdullah, H., & Tursoy, T. (2021). Capital structure and firm performance: a panel causality test. Munich Personal RePEc Archive, 1-18.

Abuzayed, B. (2012). Working capital management and firms' performance in emerging markets: the case of Jordan. International Journal of Managerial Finance, 8(2), 155-179.

Agarwal, R., & Gort, M. (2002). Firm and product life cycles and firm survival. American Economic Review, 92(2), 184-190.

Aghion, P., & Howitt, P. (1992). A model of growth through creative destruction. Econometrica, 60, 323-351.

Ahmad, Imtiaz and Qayyum, Abdul (2008): Effect of Government Spending and Macro-Economic Uncertainty on Private Investment in Services Sector. European Journal of Economics, Finance and Administrative Sciences No. 11 (September 2008): pp. 84-96.

Ahsan, T., & Qureshi, M. A. (2021). The nexus between policy uncertainty, sustainability disclosure and firm performance. Applied Economics, 53(4), 441-453.

Aktas, N., Croci, E., & Petmezas, D. (2015). Is working capital management value-enhancing? Evidence from firm performance and investments. Journal of Corporate Finance, 30, 98-113.

Alipour, M. (2011). Working capital management and corporate profitability: Evidence from Iran. World Applied Sciences Journal, 12(7), 1093–1099.

Al-Najjar, B. and Belghitar, Y. (2011) 'Corporate cash holdings and dividend payments: evidence from simultaneous analysis', Managerial and Decision Economics, Vol. 32, No. 4, pp.231–241, DOI: 10.1002/mde.1529.

Altaf, N. and Shah, F. (2017), "Working capital management, firm performance and financial constraints: Empirical evidence from India", Asia-Pacific Journal of Business Administration, Vol. 9 No. 3, pp. 206-219.

Anton, S. G., & Afloarei Nucu, A. E. (2021). The impact of working capital management on firm profitability: Empirical evidence from the Polish listed firms. Journal of Risk and Financial Management, 14(1), 9.

Anyanwu, J. C. (2006). Promoting of investment in Africa. African Development Review, 18(1), 42–71.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. The review of economic studies, 58(2), 277-297.

Asimakopoulos, I., Samitas, A., & Papadogonas, T. (2009). Firm-specific and economy wide determinants of firm profitability: Greek evidence using panel data. Managerial finance, 35(11), 930-939.

Atanassov, J., Julio, B., & Leng, T. (2015). The bright side of political uncertainty: The case of R&D. http://dx.doi.org/10.2139/ssrn.2693605

Berger, A. N., and E. B. D. Patti. 2006. "Capital Structure and Firm Performance: A New Approach to Testing Agency Theory and an Application to the Banking Industry." Journal of Banking & Finance 30 (4): 1065–1102.

Baum, C. F., Stephan, A., & Talavera, O. (2009). The effects of uncertainty on the leverage of nonfinancial firms. Economic Inquiry, 47(2), 216–225.

Bennouna, K., Meredith, G.G. and Marchant, T. (2010), "Improved capital budgeting decision making: evidence from Canada", Management Decision, Vol. 48 No. 2, pp. 225-247.

Bonaime, A., Gulen, H. and Ion, M., (2018), "Does policy uncertainty affect mergers and acquisitions?", Journal of Financial Economics, 129(3), pp. 531-558.

Bhatia, S., & Srivastava, A. (2016). Working capital management and firm performance in emerging economies: evidence from India. Management and Labour Studies, 41(2), 71-87.

Berger, A.N., & Bonaccorsi-di-Patti, E.(2006). Capital structure and firm performance: a new approach to testing agency theory and an application to the banking industry. Journal of Banking and Finance, 30, 1065–1102.

Bhattacharya, U., Hsu, P., Tian, X., & Xu, Y. (2015). What affects innovation more: Policy or policy uncertainty? Quarterly Journal of Economics, 98, 85–106.

Borghesi, R., & Chang, K. (2020). Economic policy uncertainty and firm value: the mediating role of intangible assets and R&D. Applied Economics Letters, 27(13), 1087-1090.

Brick, I. E., & Ravid, S. A. (1985). On the relevance of debt maturity structure. The journal of Finance, 40(5), 1423-1437.

Chun, H., & Nadiri, M. I. (2016). Intangible investment and changing sources of growth in Korea. The Japanese Economic Review, 67, 50-76.

Choudhary, M. A., Pasha, F., & Waheed, M. (2020). Measuring Economic Policy Uncertainty in Pakistan. Munich Personal RePEc Archive, 1-18.

Cohen, S. and Kaimenakis, N. (2007), "Intellectual capital and corporate performance in knowledge intensive SMEs", The Learning Organization, Vol. 14 No. 3, pp. 241-62.

Cai, J., and Z. Zhang. 2011. "Leverage Change, Debt Overhang, and Stock Prices." Journal of Corporate Finance 17 (3): 391–402.

Chen, P. F., Lee, C. C., & Zeng, J. H. (2019). Economic policy uncertainty and firm investment: evidence from the US market. Applied Economics, 51(31), 3423-3435.

Chen, Y. and Wang, S. (2004), "The empirical evidence of the leverage effect on volatility in international bulk shipping market", Maritime Policy and Management, Vol. 31 No. 2, pp. 109-124.

Chen, C., Wang, Y., & Huang, Y. S. (2014). Economic policy uncertainty and corporate investment: Evidence from China. Pacific-Basin Finance Journal, 26, 227-243.

Çolak, G., Gungoraydinoglu, A., & Öztekin, Ö. (2018). Global leverage adjustments, uncertainty, and country institutional strength. Journal of Financial Intermediation, 35, 41-56.

Cohen, J. (2013). Statistical power analysis for the behavioral sciences. Routledge.

Hsiao, Cheng (2003). "Fixed-effects models". Analysis of Panel Data (2nd ed.). New York: Cambridge University Press. pp. 95–103.

Cooper, M. J., Gulen, H., & Schill, M. J. (2008). Asset growth and the cross-section of stock returns. The Journal of Finance, 63(4), 1609–1651.

Chun, H. and Nadiri, M.I. (2016), "Intangible investment and changing sources of growth in Korea", The Japanese Economic Review, Vol. 67 No. 1, pp. 50-76.

Chen, J. J. (2004). Determinants of capital structure of Chinese listed companies. Journal of Business Research, 57(12), 1341- 1351.

Dbouk, W., Moussawi-Haidar, L., & Jaber, M. (2018). The detrimental effect of economic policy uncertainty on firms' working capital. the detrimental effect of economic policy, 1-24.

Deloof, M. (2003). Does working capital management affect profitability of Belgian firms? Journal of Business Finance & Accounting, 30(3-4), 573–588.

Danso, A., Lartey, T., Fosu, S., Owusu-Agyei, S., & Uddin, M. (2019). Leverage and firm investment: the role of information asymmetry and growth. International Journal of Accounting & Information Management, 27(1), 56-73.

Danso, A., Lartey, T. A., Gyimah, D., & Adu-Ameyaw, E. (2021). Leverage and performance: do size and crisis matter?. Managerial Finance, 47(5), 635-655.

Demir, E., & Ersan, O. (2017). Economic policy uncertainty and cash holdings: Evidence from BRIC countries. Emerging Markets Review, 33, 189-200.

Dawar, V. (2014). Agency Theory, Capital Structure and Firm Performance: Some Indian Evidence. Managerial Finance, 1-19.

Dahya, Jay & Dimitrov, Orlin & McConnell, John. (2008). Dominant Shareholders, Corporate Boards and Corporate Value: A Cross-Country Analysis. Journal of Financial Economics. 87. 73-100. 10.2139/ssrn.887383.

Danso, A., Adomako, S., Lartey, T., Amankwah-Amoah, J., & Owusu-Yirenkyi, D. (2020). Stakeholder integration, environmental sustainability orientation and financial performance. Journal of business research, 119, 652-662.

Dbouk, W., Moussawi-Haidar, L., & Jaber, M. Y. (2020). The effect of economic uncertainty on inventory and working capital for manufacturing firms. International Journal of Production Economics, 230, 107888.

de Moura, G. D., Theiss, V., & da Cunha, P. R. (2014). ativos intangíveis e gerenciamento deresultados: uma análise em empresasbrasileiras listadas na bm&fbovespa. Revista Base (Administração e Contabilidade) da UNISINOS, 11(2), 111-122.

Dixit, A. (1988). A general model of r & d competition and policy. The RAND Journal of Economics, 317-326.

Da Silva, A. F., Vieira, A. M. C., Navarro, A. C., & Parisi, C. (2013). Decisions on investment and profitability: An empirical study using generalized linear mixed models in non-financial Brazilian companies. In European Financial Management Association (EFMA) Annual Conference, UK, 1-30.

Dar, S. Q., & Dar, A. A. (2017). The working capital and its ratios: A qualitative study. International Journal of Statistics and Actuarial Science, 1(1), 24-30.

Donaldson, G. (1961), Corporate Debt Capacity: A Study of Corporate Debt Policy and Determination of Corporate Debt Capacity, Harvard Graduate School of Management, Boston, MA.

dos Santos, P. L., & Scharfenaker, E. (2016). Capital-market competition, informational performance, and the distribution of tobin's q. New School Soc. Res, 6, 1-24.

Echevarria, D. P., 1997, 'Capital Investment and the Profitability of Fortune 500 Industries: 1971–1990', Studies in Economics and Finance (Fall), 3-35.

Economic Survey of Pakistan. (2019). No Title. Finance Division Government of Pakistan.

Emmanuel, C., Harris, E. and Komakech, S. (2010), "Towards a better understanding of capital investment decisions", Journal of Accounting & Organizational Change, Vol. 6 No. 4, pp. 477-504.

Fazzari, S. M., Hubbard, R. G., & Petersen, B. C. (2000). Investment-cash flow sensitivities are useful: A comment on Kaplan and Zingales. The Quarterly Journal of Economics, 115(2), 695–705.

Fazzari, S. M., & Petersen, B. C. (1993). Working capital and fixed investment: new evidence on financing constraints. The RAND Journal of Economics, 328–342.

Frank. M. Z., & Goyal. V.K. (2003). Testing the pecking order theory of capital structure. Journal of Financial Economics, 67, 217 – 248.

Fosu, S. (2013). Capital structure, product market competition and firm. The Quarterly Review of Economics and Finance, 1-32.

Ferreira, M.A. and Vilela, A.S. (2004) 'Why do firms hold cash? Evidence from EMU countries', European Financial Management, Vol. 10, No. 2, pp.295–319, DOI: 10.1111/j.1354- 7798.2004.00251.x

Fazzari, S.M., Petersen, B.C., 1993. Working capital and fixed investment: new evidence on financing constraints. Rand J. Econ. 24 (3), 328–342.

Ferdaous, J. and Rahman, M.M. (2019), "The effects of intangible assets on firm performance: An empirical investigation on selective listed manufacturing firms in DSE, Bangladesh", American Journal of Business, Vol. 34 No. 3/4, pp. 148-168.

Faulkender, M. W. (2002). Cash holdings among small businesses. Available at SSRN 305179. 1-40.

Fazzari, S., Hubbard, R. G., & Petersen, B. C. (1987). Financing constraints and corporate investment. NBER, 1-61.

Feng, Y. (2001). Political freedom, political instability, and policy uncertainty: A study of political institutions and private investment in developing countries. International Studies Quarterly, 45(2), 271-294.

Fang, W. S., & Lin, H. K. (2010). Do R&D expenditure, royalty and technology licensing expenses increase operational performance of the biotech industry in Taiwan?. Problems and perspectives in management, (8, Iss. 3), 80-91.

Gilchrist, S., Sim, J. W., & Zakrajšek, E. (2014). Uncertainty, financial frictions, and investment dynamics (No. w20038). National Bureau of Economic Research, 1-60.

Grunfeld, Y., & Griliches, Z. (1960). Is aggregation necessarily bad?. The review of economics and statistics, 1-13.

Gujarati, D. N., & Porter, D. C. (2003). Basic econometrics (ed.). New York: McGraw-HiII.

Goyal, A. (2012), "Empirical cross-sectional asset pricing: a survey", Financial Markets and Portfolio Management, Vol. 26 No. 1, pp. 3-38.

Grazzi, M., Jacoby, N., & Treibich, T. (2016). Dynamics of investment and firm performance: Comparative evidence from manufacturing industries. Empirical Economics, 51(1), 125-179.

Gill, A. and Shah, C. (2012) 'Determinants of corporate cash holdings: evidence from Canada', International Journal of Economics and Finance, Vol. 4, No. 1, pp.70–79.

Ge, F., & Xu, J. (2021). Does intellectual capital investment enhance firm performance? Evidence from pharmaceutical sector in China. Technology Analysis & Strategic Management, 33(9), 1006-1021.

Godfrey, J. and Koh, P.S. (2001), "The relevance to firm valuation of capitalising intangible assets in total and by category", Australian Accounting Review, Vol. 11 No. 25, pp. 39-48

Haji, A. A., Ghazali, N. A. M. (2018). The role of intangible assets and liabilities in firm performance: empirical evidence. Journal of Applied Accounting Research, Vol. 19, No. 1, 42-59.

Huang, L., & Liu, M. T. (2021). Backfires on firms' intangible assets of the casino industry in Macau and Las Vegas: investigating advertising expenditure. Asia Pacific Journal of Marketing and Logistics.

Hatem, B. S. (2015). Factors explaining firm investment: An international comparison. International Business Research, 9, 1112–1120.

Heenetigala, K., & Armstrong, A. F. (2011, December). The impact of corporate governance on firm performance in an unstable economic and political environment: Evidence from Sri Lanka. In 2012 Financial markets & corporate governance conference, 1-17.

Hair, J. F., Black, W. C., & Babin, B. J. (2010). Anderson. RE, 2010. Multivariate Data Analysis. New Jersey, Pearson Prentice Hall.

Hansen, L. P., & Singleton, K. J. (1982). Generalized instrumental variables estimation of nonlinear rational expectations models. Econometrica: Journal of the Econometric Society, 1269-1286.

Hayashi, F. (1982). Tobin's marginal q and average q: A neoclassical interpretation. Econometrica: Journal of the Econometric Society, 213-224.

Ionita, C., & Dinu, E. (2021). The effect of intangible assets on sustainable growth and firm value–Evidence on intellectual capital investment in companies listed on Bucharest Stock Exchange. Kybernetes, 50(10), 2823-2849.

Iqbal, U., Gan, C., & Nadeem, M. (2020). Economic policy uncertainty and firm performance. Applied Economics Letters, 27(10), 765–770.

Jaisinghani, D., Tandon, D., & Batra, D. K. (2018). Capital expenditure and persistence of firm performance: an empirical study for the Indian automobiles industry. International Journal of Indian Culture and Business Management, 16(1), 39-56.

Jangili, Ramesh and Kumar, Sharad (2010): Determinants of Private Corporate Sector Investment in India. Published in: Reserve Bank of India Occasional Papers , Vol. 31, No. 3 (2010): pp. 67-89.

Jones, M. C., & Sheather, S. J. (1991). Using non-stochastic terms to advantage in kernel-based estimation of integrated squared density derivatives. Statistics & Probability Letters, 11(6), 511-514.

Jorgenson, D. W. (1963). Capital theory and investment behavior. The American Economic Review, 53(2), 247-259.

Jouida, S. (2018). Diversification, capital structure and profitability: A panel VAR approach. Research in International Business and Finance, 45, 243-256.

Kayani, U. N., De Silva, T.-A., & Gan, C. (2020). Working Capital Management and Firm Performance Relationship: An Empirical Investigation of Australasian Firms. Review of Pacific Basin Financial Markets and Policies, 23(03), 2050026.

Kenton, W. (2020). Financial Performance. In Fundamental Analysis. https://www.investopedia.com/terms/f/financialperformance.asp

Kim, S. (2001), "The near-term financial performance of capital expenditures: a managerial perspective", Managerial Finance, Vol. 27 No. 8, pp. 48-62.

Kaufmann, L. and Schneider, Y. (2004), "Intangibles, a synthesis of current research", Journal of Intellectual Capital, Vol. 5 No. 3, pp. 366-88.

Kim, S., Saha, A., & Bose, S. (2021). Do capital expenditures influence earnings performance: Evidence from loss-making firms. Accounting & Finance, 61, 2539-2575.

Kotcharin, S., & Maneenop, S. (2018). The giant's pull: How macroeconomic conditions in China explain leverage decisions in Thailand's shipping SMEs. The Asian Journal of Shipping and Logistics, 34(4), 337–344.

Kale, A. A. (2014). The impact of financial leverage on firm performance: the case of non financial firms in Kenya (Doctoral dissertation, University of Nairobi).

Kong, Q., Li, R., Wang, Z., & Peng, D. (2022). Economic policy uncertainty and firm investment decisions: Dilemma or opportunity?. International Review of Financial Analysis, 83, 102301.

Kundu, A., Kulkarni, P. and Murthy, A. (2010), "Advertising and firm value: mapping the relationship between advertising, profitability and business strategy in India", Middle-East Journal of Scientific Research, Vol. 17 No. 6, pp. 650-658

Liu, G., & Zhang, C. (2020). Economic policy uncertainty and firms' investment and financing decisions in China. China Economic Review, 63, 101279.

Loderer, C., Neusser, K., & Waelchli, U. (2011). Firm age and survival. Munich Personal RePEc Archive, Working paper.

Luca, M. M. M. D., Maia, A. B. G. R., Cardoso, V. I. D. C., Vasconcelos, A. C. D., & Cunha, J. V. A. D. (2014). Intangible assets and superior and sustained performance of innovative Brazilian firms. BAR-Brazilian Administration Review, 11, 407-440.

Lian, C., Ma, Y., & Wang, C. (2019). Low interest rates and risk-taking: Evidence from individual investment decisions. The Review of Financial Studies, 32(6), 2107-2148.

Lin, H. L., & Lo, M. L. (2015, November). The portfolio of intangible investments and their performance: Evidence from Taiwanese Manufacturing Firms. In Asia-Pacific Innovation Conference, Hangzhou, China, 1-36.

Martínez-Sola, C., García-Teruel, P. J., & Martínez-Solano, P. (2013). Corporate cash holding and firm value. Applied Economics, 45(2), 161-170.

Miller, M. H., & Modigliani, F. (1963). Dividend policy and market valuation: a reply. The Journal of Business, 36(1), 116-119.

Margaritis, D., and M. Psillaki. 2010. "Capital Structure, Equity Ownership and Firm Performance." Journal of Banking & Finance 34 (3): 621–632.

Malmendier, U., & Tate, G. (2005). CEO overconfidence and corporate investment. The journal of finance, 60(6), 2661-2700.

Mirza, S. S., & Ahsan, T. (2020). Corporates' strategic responses to economic policy uncertainty in China. Business Strategy and the Environment, 29(2), 375-389.

Moon, J., & Sharma, A. (2014). Factors influencing fixed assets investments in the US hospitality industries. The Journal of Hospitality Financial Management, 22(2), 75-88.

Mun, S., & Jang, S. (2015). Working capital, cash holding, and profitability of restaurant firms. International Journal of Hospitality Management, 1-11.

Nazir, A., Azam, M. and Khalid, M.U. (2021), "Debt financing and firm performance: empirical evidence from the Pakistan Stock Exchange", Asian Journal of Accounting Research, Vol. 6 No. 3, pp. 324-334.

Nestoroska, I. (2020). Economic Policy Uncertainty and Firm Performance in the Czech Republic. Journal of Accounting, Business and Finance Research, 10(1), 10-16.

Nguyen-Anh, T., Hoang-Duc, C., Nguyen-Thi-Thuy, L., Vu-Tien, V., Nguyen-Dinh, U., & To-The, N. (2022). Do intangible assets stimulate firm performance? Empirical evidence from Vietnamese agriculture, forestry and fishery small-and medium-sized enterprises. Journal of Innovation & Knowledge, 7(3), 100194.

Pais, M. A., & Gama, P. M. (2015). Working capital management and SMEs profitability: Portuguese evidence. International journal of managerial finance, 11(3), 341-358.

Pervan, M., Pervan, I., & Ćurak, M. (2017). The influence of age on firm performance: evidence from the Croatian food industry. Journal of Eastern Europe Research in Business and Economics, 2017(1), 1-10.

Pan, W.F., Wang, X., Yang, S., 2019. Debt maturity, leverage, and political uncertainty. North Am. J. Econ. Finance 50, 100981.

Pastor, L., & Veronesi, P. (2003). Stock Valuation and Learning about Profitability. Journal of Finance, 58,1749–1789.

Pastor, L., & Veronesi, P. (2013). Political uncertainty and risk premia. Journal of Financial Economics, 110(3), 520–545.

Patel, P. C., Guedes, M. J., Soares, N., & da Conceição Gonçalves, V. (2018). Strength of the association between R&D volatility and firm growth: The roles of corporate governance and tangible asset volatility. Journal of Business Research, 88, 282-288.

Peel, M. J., & Wilson, N. (1996). Working capital and financial management practices in the small firm sector. International Small Business Journal, 14(2), 52-68.

Qiu, M., & Li, X. (2017). Capital Structure and Economic Policy Uncertainty: US versus German Firms. Working paper. Massey University.

Raza, M. W. (2013). Affect of financial leverage on firm performance. Empirical evidence from Karachi Stock Exchange. Munich Personal RePEc Archive, 1-20.

Robb, A. and Robinson, D. (2010), "The capital structure decisions of new firms", National Bureau of Economic Research, NBER Working Papers, 27.

Rico, P., & Cabrer-Borrás, B. (2020). Intangible capital and business productivity. Economic research-Ekonomska istraživanja, 33(1), 3034-3048.

Rumyantsev, S., & Netessine, S. (2007). Inventory and its relationship with profitability: evidence for an international sample of countries. SSRN 2319862, 1-33.

Rashid, A., & Waqar, S. M. (2017). Exchange rate fluctuations, firm size, and export behavior: An empirical investigation. Small Business Economics, 49, 609-625.

Reed, W. R., & Ye, H. (2011). Which panel data estimator should I use?. Applied economics, 43(8), 985-1000.

Ren, T., Liu, N., Yang, H., Xiao, Y. and Hu, Y. (2019), "Working capital management and firm performance in China", Asian Review of Accounting, Vol. 27 No. 4, pp. 546-562.

Ren, Y., Guo, Q., Zhu, H., & Ying, W. (2020). The effects of economic policy uncertainty on China's economy: evidence from time-varying parameter FAVAR. Applied Economics, 52(29), 3167-3185.

Saddour, K. (2006). The determinants and the value of cash holdings: Evidence from French firms (No. halshs-00151916).

Sajid, M., Mahmood, A., & Sabir, H. M. (2016). Does financial leverage influence investment decisions? Empirical evidence from KSE-30 index of Pakistan. Asian Journal of Economic Modelling, 4(2), 82–89.

Schwarz, L. A. D., & Dalmácio, F. Z. (2020). The relationship between economic policy uncertainty and corporate leverage: Evidence from Brazil. Finance Research Letters, 101676, (40).

Shakina, E., Barajas, A., Parshakov, P. and Chadov, A. (2017), "Status-quo vs new strategy in intangibles", Journal of Economic Studies, Vol. 44 No. 1, pp. 138-153.

Surajit, B. & Saxena, A. (2009). Does the Firm Size Matter? An Empirical Enquiry into the Performance of Indian Manufacturing Firms, Munich Personal RePEc Archive, 13029.

Sharma, A. K., & Kumar, S. (2011). Effect of working capital management on firm profitability: Empirical evidence from India. Global Business Review, 12(1), 159–173.

Singh, S., Jain, P.K. and Yadav, S.S. (2012), "Capital budgeting decisions: evidence from India", Journal of Advances in Management Research, Vol. 9 No. 1, pp. 96-112.

Sundaresan, S., Wang, N., & Yang, J. (2015). Dynamic investment, capital structure, and debt overhang. The Review of Corporate Finance Studies, 4(1), 1–42.

Sudiyatno, B., Puspitasari, E., & Kartika, A. (2012). The Company's Policy, Firm Performance, and Firm Value: An Empirical Research. American International Journal of Contemporary Research, 30-40.

Salawu, R. O., & Ile-Ife, N. (2007). An empirical analysis of the capital structure of selected quoted companies in Nigeria. The International Journal of Applied economics and finance, 1(1), 16-28.

Simon, S., Sawandi, N., & Abdul-Hamid, M. A. (2017). The quadratic relationship between working capital management and firm performance: Evidence from the Nigerian economy. Journal of Business and Retail Management Research, 12(1).

Sahinoz, S., and E. E. Cosar. 2018. "Economic Policy Uncertainty and Economic Activity in Turkey." Applied Economics Letters 25 (21): 1517-1520.

Salawu, R. (2007), "An empirical analysis of the capital structure of selected quoted companies in Nigeria", The International Journal of Applied Economics and Finance, Vol. 1 No. 1, pp. 16-28.

Shin, M.S. and Kim, S.E. (2010), "The effects of R&D expenditure on the firm value: evidence from korean small and medium sized enterprises", Journal of Finance and Accountancy, Vol. 7, pp. 1-20.

Singh, M., & Faircloth*, S. (2005). The impact of corporate debt on long term investment and firm performance. Applied Economics, 37(8), 875-883.

Supatmi, T., Sutrisno, Saraswati, Erwin, Purnomosidhi, Bambang, 2019. "The effect of related party transactions on firm performance: The moderating role of political connection in Indonesian banking", Business: Theory and Practice, Vol. 20, pp. 81-92.

Seo, H. S., & Kim, Y. (2020). Intangible assets investment and firms' performance: Evidence from small and medium-sized enterprises in Korea. Journal of Business Economics and Management, 21(2), 421-445.

Smith, K. (1980). Profitability versus liquidity tradeoffs in working capital management. Readings on the management of working capital, 42(1), 549-562.

Satt, H., & Chetioui, Y. (2017). Does goodwill improve firm performance? Evidence from the Mena Region. Journal of Risk governance & Control: Financial Markets & Institutions, 7(2), 108-115.

Sharma, A. K., & Kumar, S. (2011). Effect of working capital management on firm profitability: Empirical evidence from India. Global business review, 12(1), 159-173.

Svoboda, P., Bohusova, H., & Semerádová, L. (2017, June). Intangible assets in Pharmaceutical Companies in the Czech Republic. In Proceedings of the 14th International Scientific Conference European Financial Systems 2017, Part (Vol. 2, pp. 391-399).

Thum-Thysen, A., Voigt, P., Bilbao-Osorio, B., Maier, C., & Ognyanova, D. (2019). Investment dynamics in Europe: Distinct drivers and barriers for investing in intangible versus tangible assets?. Structural Change and Economic Dynamics, 51, 77-88.

Thanh, V. H., & Ha, N. M. (2013). The effect of banking relationship on firm performance in Vietnam. International Journal of Economics and Finance, 5(5), 148-158.

Tian, G.G. and Zeitun, R. (2007), "Capital structure and corporate performance: evidence from Jordan", Australian Accounting Bussiness and Finance Journal, Vol. 1 No. 4, pp. 40-61

Tabassam, A. H., Hashmi, S. H., & Rehman, F. U. (2016). Nexus between political instability and economic growth in Pakistan. Procedia-Social and Behavioral Sciences, 230, 325–334.

Titman, S., Wei, K. J., & Xie, F. (2009). Capital investments and stock returns in Japan. International Review of Finance, 9(1-2), 111-131.

Tahir, M., & Anuar, M. (2016). The determinants of working capital management and firms performance of textile sector in pakistan. International Journal of Methodology, 605-618.

Ukaegbu, B. (2014). The significance of working capital management in determining firm profitability: Evidence from developing economies in Africa. Research in International Business and Finance, 31, 1–16.

Van Horne, J. (2002). Financial Management and Policy. Upper Saddle, NJ: Prentice Hall.

Wu, J., Zhang, J., Zhang, S., & Zou, L. (2020). The economic policy uncertainty and firm investment in Australia. Applied Economics, 1–25.

Wang, Y., Chen, C. R. and Huang, Y. S. (2014), "Economic policy uncertainty and corporate investment: Evidence from China", Pacific-Basin Finance Journal, 26, pp. 227-243.

www.psx.com.pk.

www.finance.gov.pk/survey/chapter_22/Economic%20Survey%202021-22.pdf.

Yung, K., and A. Root. 2019. "Policy Uncertainty and Earnings Management: International Evidence." Journal of Business Research 100 (7): 255–267.

Yakubu, Ibrahim Nandom and Alhassan, Mohammed Mubarik and Mikhail, Abdul Azeez and Alhassan, Abdul-Nasiru Iddrisu (2017): Commercial Banks Performance in Ghana: Does Capital Structure Matter? Published in: International Journal of Accounting and Financial Reporting , Vol. 7, No. 1 (12 June 2017): pp. 333-342.

Zhang, G., Han, J., Pan, Z., Huang, H., 2015. Economic policy uncertainty and capital structure choice: evidence from China. Econ. Syst. 39 (3), 439 – 457.

Zhang, Q.C.; Yang, D.C. Government Motivation or Capital Return Inducing—Empirical Analysis on Determinants of Regional Investment Behavior. J. Shanxi Univ. Finan. Econ. 2018, 40, 1–14.

Zeitun, R., and G. Tian. 2007. "Does Ownership Affect a Firm's Performance and Default Risk in Jordan?" Corporate Governance 7(1):66–82.

Zeitun, R. and Saleh, A.S. (2015), "Dynamic performance, financial leverage and financial crisis: evidence from GCC countries", EuroMed Journal of Business, Vol. 10 No. 2, pp. 147-16.

LIST OF PUBLICATIONS BY AUTHOR

Journal papers and conference proceeding registered in Web of Science and SCOPUS databases.

Quddus, A., Pavelková, D., Hussain, S., Tien, P. (2022). The impact of investment decisions on firm financial performance moderated by economic policy uncertainty: evidence from the manufacturing sector of Pakistan. Asian Economic and Financial Review.

Asad, A., Pavelková, D., Hussain, S., Tien, P., Quddus, A. (2022). Impact of export and import on value addition of ready-made garments sector in Bangladesh. Journal of International Studies.

Tien, P., Quddus, A., (2021). The Impact of Innovation Activities on Firm Efficiency: Data Envelopment Analysis. Journal of Asian Finance, Economics and Business, Vol. 8 No. 3, pp. 895-904, ISSN: 0895–0904.

Hussain, S., Golam Hassan, A.B., Quddus, A., Rafique, M., Nguyen, V.C. (2021). Impact of Exchange rate as moderator with Cash Conversion Cycle on Financial Performance of manufacturing sector of Pakistan. Business: Theory and Practice, Volume 22 Issue 1, ISSN: 1648-0627.

Tien, P., Popesko, B., Quddus, A., Nguyen, N.T.K. (2021). Innovation and Bank Efficiency in Vietnam and Pakistan. Scientific Papers of the University of Pardubice, Series D: Faculty of Economics and Administration, Vol.29, No. 2, 1184, pp. 1-11, ISSN: 1804-8048.

Hussain, S., Ahmad, N., Quddus, A., Rafiq, M., Tien, P., Popesko, B. (2021). online education adopted by the students of business science. Academy of Strategic Management Journal, Volume 20, Special Issue 2, pp. 1-14, ISSN: 1544-1458.

Hussain, F., Hussain, S., Ahmad, N., Quddus, A., Rafiq, M., Tien, P. (2021). China-Pak Strategic Entente with Respect to Search for reciprocated security through Gwadar port. Psychology and Education, Vol. 58 No. 1, pp.3320-3333, ISSN: 00333077.

Hussain, S., Rafiq, M., Quddus, A., Ahmad, N., Tien, P. (2021). China-Pakistan Economic Corridor: Cooperate
Investment Development and Economic Modernization Encouragement. Journal of Contemporary Issues in Business and Government, Vol. 27, No. 1, pp. 96-108, ISSN: 2204-1990.

Hussain, S., Rafiq, M., Quddus, A., Ahmad, N., Tien, P. (2021). Pak Rupee as A Currency and Currency War. Journal of Contemporary Issues in Business and Government, Vol. 27, No. 1, pp. 88-95, ISSN: 2204-1990.

Tien, P., Hoang, S.D., Popesko, B., Hussain, S., Quddus, A. (2021) Journal of eastern European and central Asia research. Relationship between google search and the Vietcombank stock.

Tien, P., Popesko, B., Quddus, A., Hussain, S., Tran, T.B. (2021) SCMS journal of India management. Do fintech related keywords on searching google influence bank return? A case study from Vietcombank and Sacombank in Vietnam.

Quddus, A., Pavelková, D., Hussain, S., Tien, P., Atiso F., (2021), the nexus between determinants of investment and firm performance moderated by economic policy uncertainty: Evidence from the energy sector of Pakistan, Academy of Accounting and financial studies journal.

Hussain, S., Quddus, A., Tien, P., Rafique, M., Pavelková, D. (2020). The moderating role of firm size and interest rate in capital structure of the firms: selected sample from sugar sector of Pakistan. Investment Management and Financial Innovations, Volume 17, Issue 4, pp. 341-355, ISSN: 1810-4967.

Hussain, S., Golam Hassan, A.B., Rafique, M., Abdullah, M., Quddus, A. (2020). Impact of investment decisions and interest rate on firm's financial performance of Fuel and Energy Sector of Pakistan. International Journal of Advanced Science and Technology.

Sohail, A., Quddus, A. (2022). The Impact of Working Capital Management on Firm Profitability: Evidence from Pakistan. Conference Proceedings International Scientific Conference on the Occasion of the Hungarian Science Festival, 303-310.

Quddus, A., Pavelková, D., Hussain, S., Tien, P. (2021). The moderating impact of economic policy uncertainty on the relationship between investment in working capital and profitability. International Scientific Conference 'Contemporary Issues in Business, Management and Economics Engineering (cibmee), Vilnius, Lithuania.

Quddus, A., Pavelková, D., Hussain, S., Tien, P., Arif, I. A. (2021). Investment decisions and firm performance under economic policy uncertainty. 17th International Bata Conference for Ph.D. Students and Young Researchers (DOKBAT).

Atiso, F., Jemberu, E.T., Kopřivová, L., Sufyan, A., Quddus, A. (2021). the impact of fdi on domestic investment: a literature review. 17th International Bata Conference for Ph.D. Students and Young Researchers (DOKBAT).

Tien, P., Quddus, A., Arif, I. A., Popesko, B., Hussain, S. (2021). The Factors of Fintech: A Literature Review. 17th International Bata Conference for Ph.D. Students and Young Researchers (DOKBAT).

Quddus, A., Pavelková, D., Hussain, S., Tien, P., Atiso F., (2021), The impact of corporate investment strategy on firm performance moderated by economic policy uncertainty: Evidence from Pakistan. 15th International Scientific Conference INPROFORUM 2021.

Tien, P., Quddus, A., (2020). The role of performance on firm value: the moderation model of innovation in vietnam. The 16th International Bata Conference for Ph.D. Students and Young Researchers (DOKBAT), Czech Republic.

Article Publications (Ready for publications and under review)

The impact of determinants of investment on firm financial performance under economic policy uncertainty: Evidence from the manufacturing sector of Pakistan: Cogent economic & Finance.

Relationship between financial innovation and e-commerce in Visegrád economies. Journal of Financial Economics.

Impact of economic policy uncertainty on firm's investment decisions: evidence from Visegrád economies: International Scientific Conference „Contemporary Issues in Business, Management and Economics Engineering, Lithuania.

The Scenario of Economic Policy Uncertainty and Financial Innovation in Visegrád Economies: A Critical Literature Review. Conference IFKAD – International Forum on Knowledge Asset Dynamics, Matera, Italy.

AUTHOR'S CURRICULUM VITAE (CV)

Personal information

Full name: Abdul Quddus

Nationality: Pakistani

Temporary Address: Chak No. 49/5L, Post office 50/5L, Tehsil & District Sahiwal, Pakistan

Permanent Address: House no. 105, Royal Palm Garden, Tehsil & District Sahiwal, Pakistan.

Present Address: PhD Candidate, Tomas Bata University in Zlin, Czech Republic.

Mail: quddus@utb.cz ; sidhuciitsahiwal@gmail.com

Academic/ Professional Qualifications

2020 to date: Ph.D. candidate at Tomas Bata University in Zlín, Zlín, Czech Republic.

2021- 2022: Ph.D. visiting student (Erasmus) at Riga Technical University, Latvia

2013-2015: M.S. (Business Administration) degree from Government College University, Faisalabad (Pakistan)

2009-2011: M.B.A (Finance) from Comsats University Islamabad, Sahiwal campus (Pakistan)

Career Details (Academic/professional experience)

2018-2019: Assistant Lecturer at Allied Commerce College, Sahiwal (Pakistan)

2017-2018: Manager Finance at SQR Global Services, Pakistan

Abdul Quddus, Ph.D.

The Impact of Investment Decision on Firm Financial Performance Moderated by Economic Policy Uncertainty: Evidence from the Non-Financial Sector of Pakistan

Vliv investičního rozhodnutí na finanční výkonnost firmy v závislosti na nejistotě hospodářské politiky v nefinančním sektoru Pákistánu

Doctoral Thesis Summary