



Tomas Bata University in Zlín
Faculty of Management and Economics

Doctoral Thesis

**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

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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.

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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 effect of investment decisions on the firm's market and financial performance. Different studies show mixed results. Some show that investment decisions significantly impact a firm's financial performance. Kim (2001) examined the profitability of US manufacturing corporations from 1976 to 1989 with a sample of 515 observations. The finding of the study shows insignificant effect of investment on the profitability. Jiang et al. (2006) analyzed the effect of investment on the profitability of firms over more than ten years for 357 manufacturing firms. The study finds a positive impact of capital expenditure on firm performance. Titman et al. (2003) indicated a negative relationship between capital investment and firm returns. The study of Cooper et al. (2008) found a statistically significant relationship among firm-level investment and returns. Hatem (2015) explored the relationship between investment and firm profitability and provided evidence that investment and firm performance are positively correlated. Grozdić, et al. (2020) explored capital investments using panel data analysis on firm profitability. The findings show that capital investments have a statistically negative and significant impact on short-term performance but a positive effect on the firms' long-term performance while adjusting for fixed-term effects and some internal variables. Asimakopoulos et al. (2009) examined the determinants that influence the profitability of nonfinancial companies listed on the Athens Stock

Exchange in Greece from 1995 to 2003. The study uses panel data estimation techniques and finds that firm investment has a positive influence on the profitability of firm. Intangible asset investments are increasingly being used to sustain company growth, competitiveness, and profitability (Kaufmann and Schneider, 2004; Cohen and Kaimenakis, 2007). Intangible assets provide a competitive advantage, increase the company's market value, and generate revenue through goodwill, R & D, licensing, or patents. In addition, intangible assets can improve the operational efficiency of a company and reduce costs. Therefore, investing in intangible assets could be a major inducement of long-term growth and profitability of a company.

Investment in tangible and intangible assets that are examined separately on firm profitability can provide valuable insights into a firm's market and financial performance. Tangible assets, like machinery, and real estate, is typically linked with the manufacture of products and can directly contribute to a firm's revenues and profits (Grazzi et al. 2016). Investments in intangible assets provide a significant role among firm-specific performance drivers. Intangible assets provide value through intellectual property, while tangible assets provide value through their physical form. The study of Andonova & Ruz-Pava (2016) indicates that intangible assets have a significant effect on a profitability of firm's and are an important source of value for firms. Seo & Kim (2020) show that intangible assets can provide a competitive advantage for a firm, allowing it to charge premium prices for its products or services, as well as to increase efficiency, lower costs, and optimize firm performance. By examining these two types of investment separately, firms can better understand the relative importance of tangible and intangible assets in determining their financial performance. They can also allocate resources more effectively and make informed decisions about where to invest capital for maximum return (Patel et al., 2018; Thum-Thysen et al., 2019). Additionally, analysing investments in tangible and intangible assets separately allows firms to evaluate the performance of these assets independently, which can help identify sources of profitability and inefficiency. This can help firms improve their overall performance and competitiveness in the long run.

All investments are supposed to generate returns that are proportional to their costs; this is also essential of funds invested in the innovative product or increase product capacity of nonfinancial companies. As a result, effective management of working capital can help a company balance the need for funds to support growth and investment with the

need to maintain liquidity and financial stability. A study of Deloof (2003) indicates that working capital accounts for a large portion of a company's investment. Madura and Veit (1988) showed that financing through internal resources may limit the amount of working capital available, but reduces the risk associated with external borrowing as the financing decision entails a risk-return trade-off with respect to profitability. Working capital cash flows are integrated into the business's cash flows, and WC supports the capital budgeting decision (Peel, Wilson, 1996). Kayani et al. (2020) documents an investment in WC has significant effects on firm performance. Ukaegbu, (2014); Ren et al., (2019) and Bhatia & Srivastava, (2016) indicate that short-term investment in WC has a negative link with profitability. The study by Abuzayed (2012) explores the connection between IWC and business profitability for listed companies on the Amman Stock Exchange between 2000 and 2008. The cash conversion cycle (CCC) is used in the research as a metric for working capital. The results show a positive correlation between profitability and the CCC, indicating that these businesses may not be as motivated to manage their working capital efficiently, leading to a longer time for the CCC from inventory to accounts receivable to cash. A study by Alipour (2011) examined the associations between WC and firm profitability for 2,628 Tehran Stock Exchange-listed businesses between 2001 and 2006. By using multiple regression analysis, the results of this study demonstrated a significant inverse link between working capital and profitability. Another study by Baños-Caballero et al. (2014) explored the relationship between investment in working capital and a company's efficiency. The study found a U-shaped association, indicating that there is an optimal level of IWC that results in the highest degree of efficiency. However, both excessive IWC and insufficient IWC could lead to decreased efficiency.

The decision on capital expenditure deals with the proposed investment decision (Bennouna et al., 2010). The capital process involves the leverage decision, which determines how much debt funding is required in a company's capital structure (Sundaresan et al., 2015). Investment decisions and financial leverage have remained a focus of academics and financial analysts for many years (Sajid et al., 2016). Several studies have found an inverse/negative association between investments and financial leverage, with the association being much more significant for low-growth companies (Aivazian et al., 2005; Lang et al., 1996; Ahn et al., 2006).

Instability is a prevalent challenge in developing countries such as Pakistan, characterized by weakened economic situations and frequent political changes. The

fluctuating economic and political landscape is believed to negatively impact investment prospects by making it difficult to predict future conditions. This results in uncertainty and reduced investor confidence, leading to a decline in investment activities (Feng, 2001). The impact of political instability has adversely affected economic conditions, leading to a decrease in investment (Tabassam et al., 2016). The Economic Policy Uncertainty (EPU) contains several particular terms i.e., instability and economic and policy: taxation, fiscal policy, monetary policy, policymakers, and debt (Choudhary et al., 2020). Economic risk is connected with unclear prospective policies, and the regulatory systems of governments lead to uncertainty in policy. Due to economic uncertainty, this phenomenon will delay spending and investments for companies and individuals. Pastor and Veronesi (2012) shows that political unrest increased cost of financing, decreased investment, and hastened economic circumstances. Driver et al. (2004) finds a negative impact on investment-uncertainty variable dependent on the cross-sectional dispersion in an industry to maximization for the business. Ahsan & Qureshi (2020) find compelling evidence that policy uncertainty decreases firm performance. Iqbal et al. (2020) explores the connection between EPU and nonfinancial business performance in the United States. They were used four firm performance proxies i.e., net profit margin (NPM), Tobin's Q and ROA. They found that on all four proxy accounts, the impact of the EPU on financial performance inverse significantly.

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 impact of EPU on the relationship between investment decision and firm 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 which addresses the research background, the rationale behind choosing the research. 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. Also, the dissertation reviews the previous studies on the investment decisions and economic policy uncertainty and firm performance. Next chapter is the hypotheses development

and conceptual framework. Chapter 5 includes methodology and the brief description of Pakistani stock market, research population, sample size, processing of data and empirical models. 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. Pakistan has a history of political instability and weak economic infrastructure, which can lead to higher levels of economic policy uncertainty relative to all other South Asian countries. The country has faced challenges such as high inflation, high fiscal deficits, low foreign reserves, and a high public debt-to-GDP ratio, which have contributed to a relatively uncertain policy environment. India, on the other hand, has a relatively stable political environment and a growing economy. The country has been adopting strategic policies to promote economic growth and development, such as the "Make in India" initiative to attract foreign investment and increase manufacturing in the country. However, the recent economic slowdown and global trade tensions have raised a moderate level of EPU in the country. Iran is under economic sanctions and facing political turmoil, leading to a moderate level of EPU. The country's economy has

been heavily impacted by sanctions, which have restricted its ability to export oil and access international financial markets. Bangladesh has a stable political environment, but the economic situation is not good, leading to a low level of EPU. The country has been experiencing steady economic growth, but faces challenges such as low foreign investment, high poverty and unemployment rates, and a lack of infrastructure development. Additionally, government policies and regulations are not always clear and consistent, which can also contribute to EPU in the country. Comparing Pakistan to other emerging countries, the EPU is considerably greater, so studying the impact of investment decisions on firm performance under EPU in Pakistan can provide valuable information for policymakers, academics, and business leaders in Pakistan, but also for developing countries facing similar challenges.

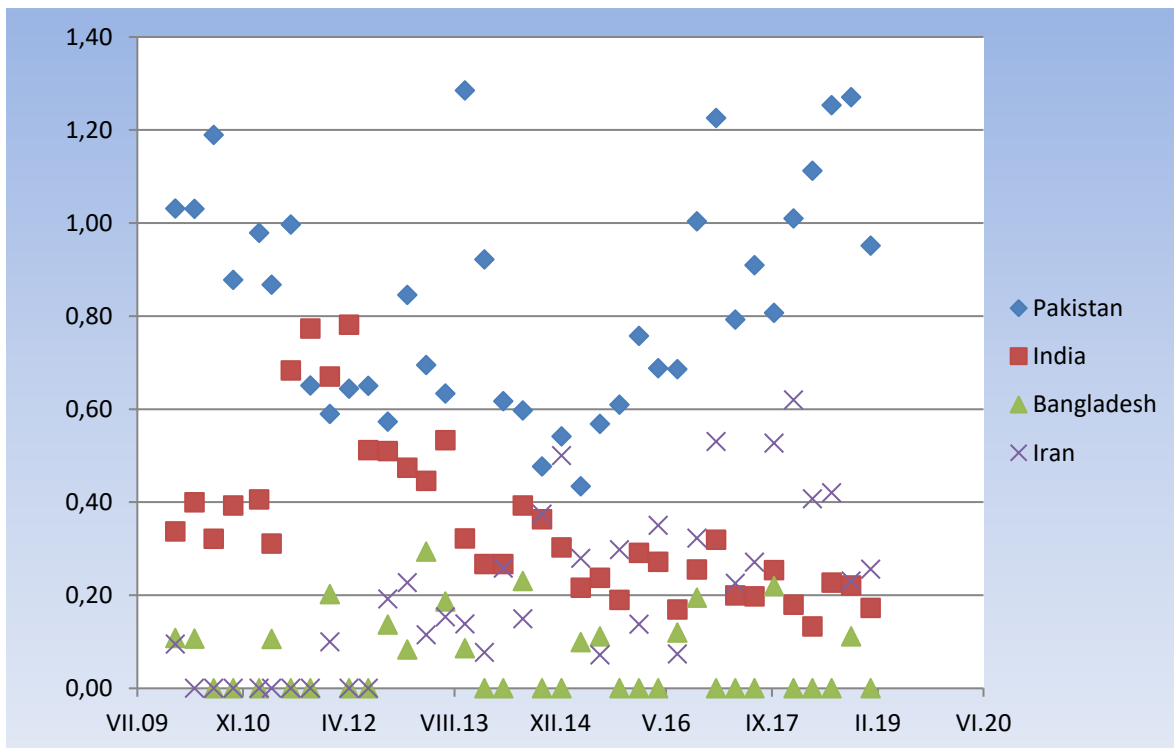


Figure 1: Trend of EPU (Source: WU Index)

As an emerging economy, Pakistan has several challenges in growing its economy due to political instability and economic circumstances. Pakistan has gone through many structural changes in corporate investment strategy that directly influence the business environment. Investment decisions and firm performance have been studied in several countries of the world, but no thorough study prevails for the Pakistani nonfinancial

sector. The lack of empirical evidence with reference to the nonfinancial sector of Pakistan provides a strong motivation to examine investment decisions and firm performance with a moderating impact of EPU. EPU is used as a moderating or interaction variable in the study, since policy changes influence the climate in which firms work. Therefore, political or economic shocks can be a significant source of uncertainty for businesses because they can have a considerable impact on their sale, costs, and profits (Wang et al., 2014). The most recent research finds that the decrease in business investment expenditures is due to increased uncertainty in policies (Baker et al., 2016; Gulen and Ion, 2013). 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. 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. In this regard, the finding of the present study reinforces the necessity to investigate this behavior. The current study sheds light on investment decisions (ITA, IIA, and IWC) and FL as an investment strategy by corporations, which are the hallmark in the investment literature. So, this study employed ITA, IIA, IWC and capital structure strategy (Financial leverage) as independent variables and Return on Assets, and Tobin's Q as dependent variables. To control the deviation problem, the study used control variables from previous studies. The control variables include FA, FS, and CFO for the nonfinancial sector of Pakistan.

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 exports to various territories 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. The country is also home to a number of pharmaceutical companies that produce and export a wide range of medicines. The engineering sector in Pakistan is dominated by the production of heavy machinery, automobiles, and other related products. The country's food processing industry is also rapidly growing and includes the production of various food products such as fruits, vegetables, dairy and meat. In general, the manufacturing sector in Pakistan is facing several challenges, including lack of access to financing, energy shortages, and inadequate infrastructure. Despite these challenges, the sector continues to grow and provides important contributions to the country's economy. Figure 2 shows the share of the manufacturing sector of Pakistan in GDP.

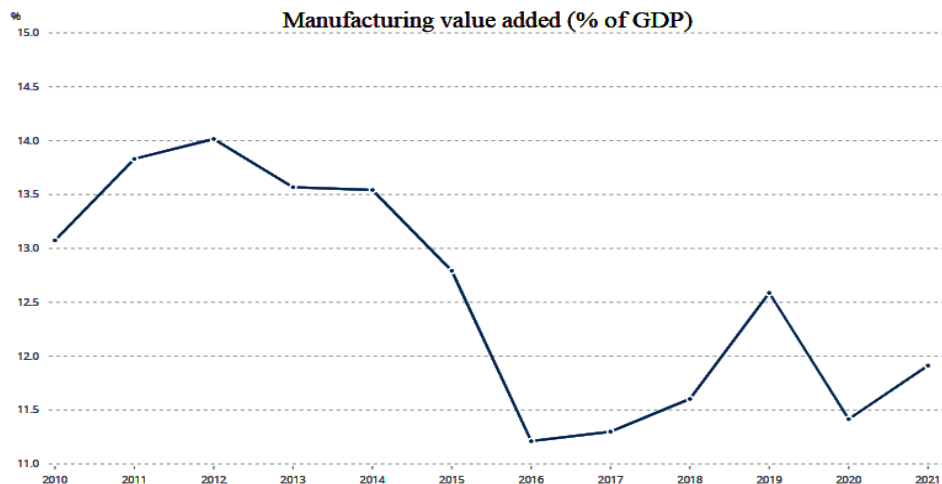


Figure 2: Share of manufacturing sector of Pakistan in the GDP (Source: World bank)

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 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. In October 1958, with the proclamation of martial law, the military took control of the country, and a new phase of the Pakistani economy began. During 1966-1970, the economy faced difficulties on many fronts, such as reducing aid spending and increasing defence spending due to the war with India. The country's depressed economic results, coupled with political turmoil and war, have been reflected in its investment patterns. The Indo-Pak war of 1965 resulted in a reduction in both public and private investment, as well as significant non-development expenditures, which left limited resources available for investment and development purposes. This decline in investment persisted until 1970, mainly due to the war's impact.

In 1977, military rule reignited again led to economic stagnation, and finally, the nationalization policy was revised. In 1988, Pakistan held elections and a new democratic government came to power, implementing a mixed-economic policy framework. The government adopted the Seventh Five-Year Plan, but it faced several challenges and was not successful due to events both domestically and internationally. This period was marked by economic instability, political turmoil, and conflicting policies, which had an inverse impact on the country's investment levels and economic growth. Pakistan's deteriorating political situation has traditionally shaken this time.

The establishment of SMEDA in 1998 in Pakistan aimed at promoting small and medium businesses had a critical influence on the country's economy. Although the Asian financial crisis of 1997 had a negative impact on investment and growth in Pakistan, as in many other Asian countries, the efforts of SMEDA helped to stimulate the small and medium business sector, which contributes significantly to the overall economy of Pakistan (Ahmed and Qayyum, 2008). The government was also overthrown in 1999, and the military regained power again, leading to economic and political instability in the country. Finally, in 2008, democracy was restored in the country. The new government inherited the 2007-08 global economic crises, severe energy shortages, and

circular debt. The rise in hike of rising international oil prices, rising inflation, and poor law and order have increased the cost of doing business and affected economic activity and investment levels in the country. The Pakistan Investment Board (PIB) was founded by the Government of Pakistan in October 1990 and later renamed it as The Board of Investment (BOI) in 1994, chaired by the Prime Minister, to formulate objectively policy recommendations for industrialization and to review investment plans quickly. By delegating the authority or deputy members of the SECP to the Special Economic Zone Authority (SEZA), in short, recent policies are significantly liberalized and domestic investments are funded. The rules and regulations support the country's process of deregulation and privatization.

A country's political and economic climate has an impact on investors' confidence. As a result, it has an impact on the economy's sectoral investment activity, both domestically and internationally. However, the financial structure, investment, and financing decisions are the critical determinants to heighten the firms' financial performance. The reaction of monetary and fiscal policies to economic policy uncertainty (EPU) can vary across countries due to factors such as political instability and economic circumstances. In the case of Pakistan, the country's political instability and economic challenges may lead to an asymmetric response to the EPU. For example, the government may have limited ability to implement countercyclical fiscal policies during periods of high EPU due to budget constraints and political considerations. The central bank may also have a limited pool to manoeuvre with monetary policy, as high inflation and a weak currency may limit its ability to lower interest rates. As a result, the EPU can have an impact on the economy of Pakistan than in other countries with more stable political and economic environments. Therefore, it is important to look precisely at investment trends in light with economic policy uncertainty on the firm performance of the nonfinancial sector of Pakistan. 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.

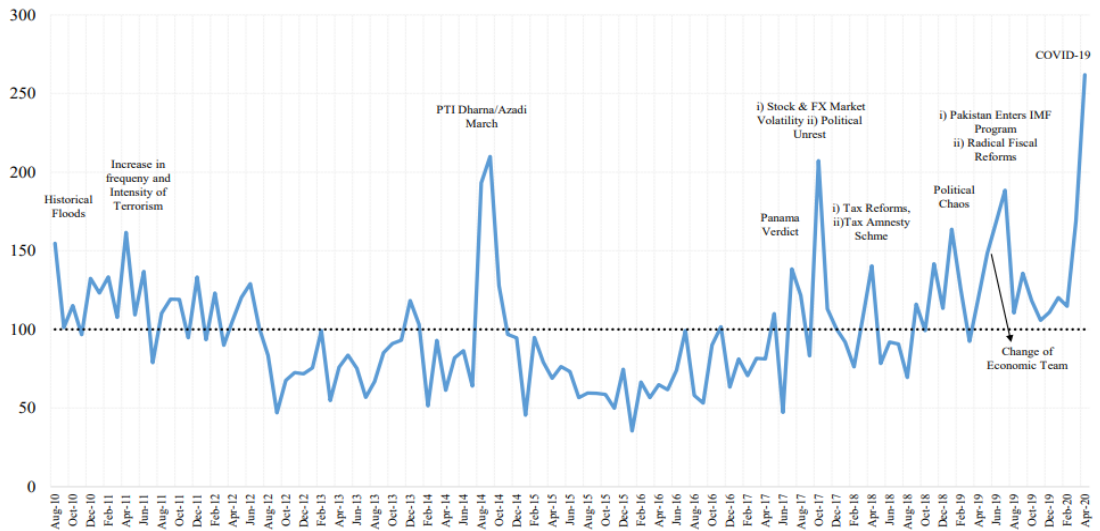


Figure 3: Trend of EPU in Pakistan (Source: EPU index)

2.3. Research Objectives

The primary aim of the dissertation is to investigate the impact of investment decision on the firm financial performance in the nonfinancial sector of Pakistan moderated by economic policy uncertainty. Therefore, the study intends to achieve this objective by pursuing the following particular 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. Different policies derived from macroeconomic studies are more effective and can also influence investment decisions in enterprises (Anyanwu, 2006). On the other hand, financial performance is an accomplishment measure to evaluate an entity's performance in a specific period. Firm performance can be measured using various methods. The profitability ratios are primary indicators of the firm's overall performance and efficiency (Kenton, 2020).

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) investigated the link between investment and company profitability and presents the argument that there is a positive correlation between investment and firm performance. Corporate investment variables described by the agency theory of Jensen & Meckling (1976) and the asymmetrical information theory of Myers & Majluf (1984). According to these theories, the main determinants of investment in the business are cash flow, leverage, and profitability (Dogan, 2019). Farooq et al. (2015) investigates 360 nonfinancial enterprises in Singapore Stock Market and indicates that underinvestment and overinvestment have a negative effect on the performance of a company ROA, ROE, and Tobin Q. However, proper investment has a positive influence on a company performance. Proper investment

refers to the allocation of funds into assets with the goal of generating a financial return while managing risk. Sudiyatno, et al. (2012) studied the company's policy, financial performance, and value of Indonesian-listed companies. They used regression analysis to evaluate the impact of company policies that contain investment in capital expenditure and capital structure on firms' financial performance measures ROA and Tobin's Q. They indicated that capital investment influenced positively and significantly of the financial performance of firms. Grozdić, et al. (2020) examines the impact of investments on firm performance using panel data methodology. The study uses financial data from 60 listed Serbian manufacturing firms, covering the period 2004 to 2016. In light of the study's findings, it indicated that capital investments have a statistically significant and negative impact on the short-term financial performance of firms, as measured by ROA. However, in the long term, capital investments have a positive effect on the financial performance of firms. The study controls for time-fixed effects and certain internal factors such as leverage, liquidity, and size. Bai & Zhang (2014) shows that investment has a significant inverse influence on profitability. Literature has suggested that there is a connection between business investment and profitability.

3.2 Investment in tangible and intangible assets, EPU, 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. Fluctuations in economic policy and market instability can make it difficult for a country to attract spending and investment from both domestic and corporate entities. 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. Akron et al. (2020) examines the investment policies of 305 hospitality firms in the United States from 2001-2018 and assess the impact of EPU on these policies. The study indicates that EPU negatively influences investment policies. Nestoroska (2020) studied the effect of EPU on the firm performance of nonfinancial firms in the Czech Republic. The study collected financial data from public nonfinancial companies over 29 years. The findings reveal that EPU has an adverse influence on a firm performance measured by the ROA and net profit margin. Policy uncertainty also

enhances the asymmetry information between managers and market players, increases capital costs, and reduces company performance (Heenetigala et al., 2011). Iqbal et al. (2020) investigate the link between EPU, and the profitability of manufacturing firms traded in the United States. The study's outcomes show that EPU has a statistically negative significant impact on all indicators of financial performance. Julio and Yook (2012) conducted a study to investigate the effect of economic and political uncertainty on business investment. The study suggests that companies lead to decrease their business investment in response to uncertainty, which is resolved only when the economic and political environment becomes more stable. These findings demonstrate that economic and political uncertainty plays a significant role in determining economic outcomes.

Rodrik (1992) indicated that transformation in developing countries will lead to the delay of investment until the uncertainty about the reform's progress has extinguished. Byrne and Davis (2004) demonstrate that monetary policy channel and inflation components of uncertainty have an intensive negative impact on investment than the permanent component of U.S. non-residential fixed investment. Pastor and Veronesi (2012) show that financial costs are pushed up by economic uncertainty, lowered investment and a worsening economic downturn. Driver et al. (2004) compares the impact of uncertainty on capital investment in the United Kingdom. The study shows that uncertainty has a inverse effects on investment, which is statistically significant. The findings were obtained using panel data estimation and demonstrate the significance of considering the impact of uncertainty in investment decision.

According to Kim and Kung (2017), the ability to reallocate assets should be treated in the economic study of how uncertainty affects firm investment. The rise in policy uncertainty would often have a long-lasting effect on capital investment and, consequently, a long-term economic development impact (Barrero et al., 2017). Uncertainty disruptions raise the conciliatory behaviour of businesses' incentives due to the irreversible value or sunken cost of investment projects and, as a result, it leads to reductions in investment (Nguyen and Phan, 2017). Zhang (2019) finds that the risk factor of investor sentiment has increased as the EPU increases. Many studies indicate that EPU has a negative association to corporate investment (Baker et al., 2016; Gulen and Ion, 2016). Sahinoz and Cosar (2018) conclude that the EPU has an adverse impact on investment growth and behavior. Demir and Ersan (2017) reports that the EPU

positively impacts corporate cash holdings as corporations decrease their investment, thus increasing the level of cash. Lazăr (2016) carried out a study on Romanian listed companies from 2000 to 2011 to uncover the factors affecting the profitability of these firms from a resource-based perspective. The findings revealed that factors such as tangibles, leverage, size, and labor intensity negatively affect the performance of the companies, while factors such as sales growth and value added had a positive effect. The results held significant even after considering the industry characteristics and time effects through a two-way fixed effects model and an industry-year effects model. Iqbal and Mati (2012) investigated the relationship between capital expenditures and earnings of nonfinancial companies. Using data from nonfinancial firms over the last ten years in manufacturing firms, the research utilized multiple regression to assess the impact of non-current assets on profitability of firm. The outcomes provide a positive association between non-current assets and firm profitability, supporting the hypothesis. Lubyana et al. (2016) investigate the effect of non-current fixed assets on the profitability and efficiency of asset management. The study focuses on the impact of various types of non-current fixed assets, including fixed, intangible, and financial assets. The study aims to understand the impact of accounting estimates and valuations on the measurement of non-current fixed assets under IFRS. The study combines a deductive approach with a quantitative analysis approach. The results suggest that differences in measurement between IFRS and EAS can affect the calculation of ratios, either in the numerator or the denominator, and the impact of the changes is straightforward and easy to identify and interpret. Olatunji and Adegbite (2014) assess the impact of fixed asset investments on the profitability of several commercial banks in Nigeria. They collect data of financial sector and analyze it employing Pearson product moment correlation and multiple regressions. The study reveals a significant and positive correlation between net profit and fixed asset investments, including leasehold premises, fixtures, fittings, buildings, land and investments in computers. This suggests that fixed assets have a positive impact on the profitability of the banking sector in Nigeria. Moon and Sharma (2014) revealed a significant association between restaurants fixed asset investment and profitability and liquidity parameters. The analysis also highlighted the fact that restaurants, although being more successful than hotels, predominantly rely on internal cash flows for investments.

Gamayuni (2015) finds that intangibility have a significant positive effect on company value and performance (ROA). The study by Borghesi & Chang (2020) suggests that

when economic volatility is high, businesses in high-intangible-intensity sectors suffer the most from restrictive regulations. Haji & Ghazali (2018) suggests that intangible assets have a significant positive effect on business performance. Salamudin et al. (2010) show that Malaysia's industries intangible asset's development is consistent with developed markets such as Europe, the United States, and Australia. Specifically, the study implies that the ability to invest in intangible assets rises with human capital, firm's size, and historical intangible asset base (Arrighetti et al., 2014). The influence of intangible assets on Bangladeshi firms was examined by Ferdaous and Rahman in 2019. According to the study, intangible assets are beneficial to the growth of a business, but firms' deprived performance in the stock market limits their ability to maximize shareholder value. This suggests that while intangible assets are important drivers of a firm's performance, there are other factors, such as market conditions, that also play a role in evaluating firm profitability. Andonova & Ruz-Pava (2016) investigated the role of intangibility in profitability, claiming that intangible assets are the most important among firm-specific performance factors. According to Mrazkova (2019), the market positively evaluates the active approach of creating new intangible assets through investments. Lu and Beamish (2004) found a positive impact of IIA on firm profitability. However, other studies on the relationship between IIA and firm performance indicate a negative effect on firm performance. The studies of (Fang and Lin, 2010; Barron et al., 2002; Widiatoro, 2012) indicate a negative influence of intangible assets on firm performance. Jinsu and Gee (2011) investigated the relationship between investment of R&D and equity value, as well as the response of investors in the Korea from 2001 to 2008. The study aimed to determine whether R&D investment had an impact on the market value of equity and if information about R&D investment was accurately reflected in the Korean stock market. The findings showed that there was a significant relationship between R&D investment and the market value of equity, and that Korean investors were quick to recognize the impact of R&D investment information. Lin and Lo (2015) conducted a study using panel data from Taiwanese manufacturing firms to analyze the impact of their expenditures on intangible assets on productivity. Intangible assets measured in this study include technology acquisition, software and database purchases, marketing expenses, employee training, and research and development. The results showed a positive relationship between intangible investment and productivity. Chu and Nadiri (2016) investigated the effect of investments in intangible assets on the sources of growth in the Korean economy. The study used industry-level data on

intangible investments from 1981 to 2008, and estimated the contribution of industries that are highly invested in intangible assets and other industries to overall productivity growth. The results indicated that the contribution of industries that invested heavily in intangibles to the growth of total labor productivity increased significantly, while the contribution from other industries decreased significantly. Quo et al. (2004) investigated the impact of R&D on firm performance and economies of scale in China's software industry. Using empirical analysis, they found that R&D spending led to an increase in development costs for both medium and large software firms. Furthermore, the results showed that the intensity of R&D intensity had a significant adverse effect on profitability and only a limited adverse effect on productivity. Riahi-Belkaoui (2003) studied the connection between return on total assets calculated using net value added and intellectual capital as an intangible asset, with the aim of examining the resource-based view of a firm. The analysis conducted using US firms that showed statistically significant results that support the stakeholder views. Chauvin and Hirschey (1994) found that several firm-specific factors consistently affect goodwill, and it has a positive impact on profitability and the market value of non-manufacturing firms. The study suggests that accounting for goodwill is a useful representation of intangible capital of a firm. Brookings (1997) defined intellectual property assets as including trade secrets, copyrights, patents, and various design rights which serve as legal means of protecting a firm's assets. It highlights that the main driver of a firm's capabilities and growth is its intellectual capital in the form. Boeckstein (2006) states that many companies identify intangible assets as part of their portfolio and that these often overlap with intellectual capital. Such assets can make a significant contribution to the overall value of a company, but the connection between intangible assets and a company's performance is not clearly established. Satt and Chetioui (2017) investigated the impact of intangible component on firm performance among 2005-2015. The results suggest that a high level of goodwill positively affects performance in large firms but not in small firms. This may be because only successful firms invest in intangible i.e., goodwill, while smaller firms struggle to produce tangible assets. Eberl and Schwaiger (2005) found that both the cognitive and affective aspects of a company's reputation have a significant impact on its future financial performance. Svoboda et al. (2017) examine the share of intangible assets such as software, patents, licenses, copyrights, and goodwill in the total assets of chemical companies. The study compares entities preparing financial statements. The goal is to

assess the significance of intangible assets, their structure, and changes over time, and to determine the possible factors behind these changes.

3.3 Investment in working capital, EPU, 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 sufficient liquidity to bear their operating demands during periods of high EPU. However, Smith (1980) implies that working capital is critical element that 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. Given the consequences that WC investment has influence on a firm's overall performance. Therefore, it is critical to understand how economic uncertainty influences investment in WC. Fernández-López et al. (2020) examine the investment in WC and SME's profitability. The study reveals a negative influence of WC on firm profitability. Similarly, the study of Aytac et al. (2020) also indicates that WC has a significant negative effect on firm profitability. The study by Dbouk et al. (2020) found that when economic uncertainty increases, firms tend to use more trade credit, payables, and working capital to finance their operations. These effects were found to be statistically significant, but the impact on individual firms was relatively small. Tandoh (2020) observed an inverse correlation among WC and EPU. Baos-Caballero et al. (2014) investigates the connection between WC and profitability using data from nonfinancial UK companies, the finding suggests a U-shaped association between WC investment and firm profitability. Knauer & Wöhrmann (2013) argues that a firm's management of working capital is crucial to its performance. This study reviews the existing studies on the linkage among WC and firm profitability. It shows that efficient management of inventory and accounts receivable has a positive effect on firm performance, but the effect of accounts payable management on profitability is influenced by reverse causality. Sharma and Kumar (2011) investigate a study on Indian companies, aiming to evaluate the link between WC and profitability. Their investigation utilized multiple regression analysis on data from 263 nonfinancial companies from 2000-2008. The study demonstrated that there is a positive association between efficient working capital and profitability. Nazir and Afza (2009) determine the link between a firm's profitability and its WCM practices. The research employed panel data analysis,

using ROA and Tobin's q as measures to evaluate the impact of WC investment and financing policies. The study findings showed that a prudent strategy in WC investment and financing could improve a company's worth. Karaduman et al. (2010) examined the association among WCM, and the profitability of firms listed on the Istanbul Stock Exchange during the period of 2005 to 2008. Through the application of panel data methods, the study aimed to assess the influence of WCM on a company's market value and its long-term sustainability. The findings indicated that effective WC is crucial in determining a profitability of firm and must be balanced to minimize risk and ensure both profitability and sustainability. Reyad et al. (2022) studied the influence of macroeconomic risk factors on WCM and its impact on corporate performance. The data was collected from firms located in the US, Germany, China, and UK covering the years 2006-2020. The authors used the two-step SGMM estimation method for the analysis. The findings indicated that during periods of EPU, firms in the United States, Germany, and China tend to be more cautious in their working capital management compared to those in the UK. Cheng (2019) examines the effectiveness of WCM in non-financial firms listed in the Shanghai and Shenzhen stock markets and its relationship with EPU. The research analyzed data spanning from 2000-2010 and indicated that uncertainty had an adverse effect on the efficiency of working capital management. Dbouk et al. (2020) studied the effect of macroeconomic risk on working capital and inventory in the manufacturing industry. Using data from 6503 US manufacturing firms between 1990 and 2018, the study found that EPU has a negative impact on the efficiency of WCM and results in higher levels of inventory, WC and payables. The results were statistically significant, but the effects were small at the individual firm level and were robust even when the monetary policy uncertainty index was used instead of the EPU index. Jory et al. (2020) explored the connection between EPU and trade credit and its effect on the worth of public companies in the United States. The findings showed that when there was high EPU, firms reduced the time it took them to pay their suppliers and received payments from their customers. The study showed that alterations in trade credit policies can have a complex impact on firm value. It was indicated that while limiting trade credit during times of high EPU can enhance shareholder value, excessively reducing it can cause a loss of customers and have a negative influence on firm value. Trinh et al. (2022) discovered that the EPU has a positive and significant impact on cash holdings after accounting for factors specific to each firm. The study also found that growth opportunities, capital expenditures, and net working capital have a significant effect.

Wang (2002) found that firms with higher values in Japan and Taiwan spend significantly less in WC than firms with lower values. The study by Dbouk et al. (2020) shows that the WC level increases as EPU raises due to unfavourable conditions linked with EPU. Higher EPU levels in manufacturing enterprises result in higher inventory levels, as demonstrated by businesses facing unpredictable demand. Furthermore, it means that the impact of the EPU on working capital levels is positively influenced.

3.4 Financial leverage, EPU, 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 association among financial leverage and firm profitability using data of 2403 firms during the period 1995-2014 in India. The study shows that the association among market firm performance (Tobin's Q) and financial leverage is negatively and statistically significant. The authors found that the relationship between leverage and performance is stronger for larger firms and that during the crisis period, the negative relationship between leverage and performance is more pronounced. The studies by Pan et al. (2019) and Zhang et al. (2015) indicate that companies tend to reduce their leverage ratios in the face of increased policy uncertainty. Schwarz & Dalmácio (2020) utilized a data from 163 Brazilian firms between 2010 and 2019. The research aimed to investigate the relationship between EPU and financial leverage. The study results indicate that when there is an increase in EPU, Brazilian companies' leverage ratios also increase. This effect was observed at least two and three quarters into the future for book and market leverage, respectively. Istiak and Serletis (2020) conducted a study on the relationship between macroeconomic risk and financial leverage using quarterly US data. They found that financial leverage increases when there is an increase in geopolitical risk, macroeconomic uncertainty, and policy uncertainty. The study argued that the previous literature does not provide a thorough explanation of this dynamic relationship and mainly focuses on the theoretical framework. The study aims to fill the gap in understanding this relationship. Im et al. (2020) analyzed the influence of uncertainty on the desired capital structure of US public manufacturing companies, using a panel data set covering the years 2003 to 2018. The study found that

firms facing high levels of uncertainty have lower targets for book and market leverage compared to firms facing low uncertainty. The findings showed that uncertainty has a greater impact on leverage targets than other factors such as firm's size, market to book ratio, fixed assets, R&D intensity, and industry median leverage, building uncertainty the utmost important factor affecting leverage targets. The study concluded that increased uncertainty reduces tax benefits from debt, increases financial distress costs, and creates conflicts between debt holders and shareholders, leading to a lower optimal leverage ratio. Morikawa (2016) examines the effect of uncertainty regarding economic policies on business operations in Japan. The survey of Japanese companies revealed that they have concerns about the future of specific economic policies, such as social security and international trade, which can have a significant impact on managerial decisions, particularly on investments. The results showed that this policy uncertainty significantly lowers the expected growth rate of sales. Khoo (2021) investigated the effect of geopolitical uncertainty on the market leverage ratio, the maturity of the debt and the source of the debt. The findings revealed that companies tend to decrease their debt levels and increase their market leverage during times of geopolitical uncertainty. The rise in leverage was due to disproportionate reductions in both debt and equity, which makes up the leverage ratio. The study also indicates that firms tend to shorten the maturity structure of their debt, particularly those with lower credit quality, and switch from bank debt to public debt during periods of geopolitical uncertainty. Li and Qiu (2018) examined the effect of EPU on capital structure decisions of US companies. The study utilized five indexes of EPU and applied static and dynamic panel regression analysis. The authors controlled for firm characteristics and conducted various tests for coefficient restrictions. The results indicated a significant correlation between rising EPU and a more cautious approach to debt financing by firms. The relationship between EPU and firms' capital structure was stronger when considering the ideal debt ratio rather than the actual level and when accommodating partial adjustment towards the ideal debt ratio. Ghardallou (2023) demonstrated that company's financial performance, as measured by return on assets, Tobin's Q, and return on equity, is adversely affected by leverage. The results, obtained by quintile regression, showed that the impact of leverage varied, with higher-profit firms being more negatively affected than low-profit firms. Furthermore, the study revealed that larger firms were impacted more negatively affected by leverage, while the impact on smaller firms was weaker. Aulia & Gandakusuma (2020) studied on the performance of manufacturing companies in Asian countries and evaluated the

influence of their capital structure. The study data collected from the company's financial statements from 2014 to 2018. The panel data with a linear regression model employed in the study by controlling for asset tangibility, size, and growth. Three variables to assess capital structure, namely total debt, total debt to total equity, and long-term debt to total equity. The findings demonstrated that total debt had a significantly adverse impact on ROA, while both total debt and total debt to total equity had a significantly negative effect on return on equity. However, total debt to total equity did not have a significant negative effect on Tobin's Q. Ibhagui and Olokoyo (2018) examine the association among firm performance and leverage in Nigeria, focusing on the influence of firm size as a threshold variable. The impact of leverage on firm performance and its variation based on firm size was analyzed by employing the regression model of Hansen (1999) and utilizing a data of 101 firms of time series and cross-sectional during 2003 and 2007. The result shows that there is a negative association among smaller firm leverage and profitability; however, this impact reduces as the firm grows and eventually disappears when the firm size surpasses a certain threshold. Additionally, the study shows that leverage has a positive effect on Tobin's Q for listed firms in Nigeria. Kaluarachchi et al. (2021) examined the influence of leverage on the profitability of Sri Lankan firms. The study analyzed the relationship between financial leverage and key financial performance metrics such as ROA and ROE using ratio analysis. The results revealed a mixed relationship, with a positive correlation found in the overall business analysis, but a negative association through the main business analysis. Ahmed and Bhuyan (2020) explored the correlation between capital structure and profitability of service sector firms in Australia. The study utilized cross-sectional panel data from 1001 firm-year observations from 2009 to 2019. The results showed that Australian service sector firms favor long-term debt as their debt choice. The study used directional causalities to determine the cause of firm performance. Çolak et al. (2018) indicates a negative influence of uncertainty on leverage. Tripathy & Shaik (2020) demonstrate that leverage has a significantly positive correlation to the firm's profitability. Zhu et al. (2020) revealed that the rise of leverage ratio can mitigate the restraining effect of EPU on enterprise value and performance. Many studies show a negative relationship between investment and leverage, although the connection is significant for low-growth companies (Aivazian et al., 2005; Ahn et al., 2006; Lang et al., 1996). Developing countries are often more vulnerable to economic policy changes and uncertainty due to weaker institutions and less developed financial markets. Evaluating the impact of the

EPU on investment decisions and firm profitability in developing countries like Pakistan can provide insight into the effectiveness of government policies and the overall business environment. It can also help identify ways to improve the predictability and transparency of economic policies, which can promote a more stable business environment and encourage investments that ultimately optimize business performance.

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. Neoclassical theory is a rational point for analysing investment decisions in a simplified and coherent framework, the Trade-off theory is useful for understanding how firms manage risk and return trade-offs, and the Pecking Order theory is useful for understanding how firms choose between different financing sources. These can help to explain a comprehensive understanding of the different factors that influence investment decisions on firm performance. In which Neoclassical theory of investment (Jorgenson, 1963), Q theory of investment (James Tobin, 1969), and the Trade-off and Pecking order theories (Myers and Majluf, 1984) are discussed. So, in this section these theories will be explained to depict a constructive understanding and establish the theoretical framework.

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. The Jorgensonian approach differed in that it provided a systemic formulation of the investment decision based on firm profit maximization behaviour. Many empirical studies have applied the neoclassical theory of investment to examine investment behavior (Coad, 2010; Asker et al., 2014; Virlics, 2013). Studies of Driver & Temple (1999) and Chirinko (1993) argued that investment decisions are shaped not only by costs, return on investment ratios, or other standard variables in investment theories, but also by the presence of risk and uncertainty. Thus, we will compare the neoclassical theory of investment with alternative explanations of corporate investment behaviour

based on considerations of investment decisions, policy uncertainty, and expected profitability and market value of a firm.

3.5.2 The Q theory of investment

James Tobin (1969) introduced The Q theory of investment which explain the behaviour of 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). Grunfeld and Griliches (1960) proposed that a company's market value can be used to analyze its investment decisions. The empirical studies have used the Q theory of investment to analyze investment behavior. In a relatively recent study, (Richardson & Romilly, 2008; DeMarzo et al., 2012; Eklund, 2010) examined various theoretic frameworks, including the Q-theory of investment for investment and profitability behaviour. Hayashi (1982) also presents the Q theory of investment decisions under uncertainty and a one-to-one relationship has been derived in optimal investment and Q.

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. Modigliani and Miller argue that the optimal debt level is associated with the lowest interest payment on corporate income, as debt provides a tax shield. Fazzari et al. (1987) argued that the cost of financial distress is closely tied to the leverage ratio, where leverage refers to borrowing capital to increase returns.

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. If retained earnings are insufficient, the firm will turn to external financing sources. According to Myers (1984), external financing begins with debt, and equity is used as a last resort when debt capacity is exhausted. Baker and Martin (2011) reported mixed results on pecking order theory. Shyam-Sunder

and Myers (1999) provide compelling evidence for the financing behaviour described by the pecking order theory. Fama and French (2002) supported the pecking order theory based on their findings regarding high- and low-growth firms. Trade-off and pecking order theories play a crucial role in reducing the cost of working capital expenditure and maximizing shareholder wealth by optimizing the benefits of working capital.

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 tangible assets. A multitude of studies have examined the relationship between company profitability and investments, including the works of Jiang et al. (2006), Echevarria (1997), Gordon and Iyengar (1996), and Hao et al. (2011). These studies generally suggest a positive correlation between the two factors. However, Jaisinghani et al. (2018) investigated the association between capital investment and business performance in the Indian automobile manufacturing sector. The study utilized a dynamic panel approach and included a sample of 95 firms from the years 2005 to 2014. The authors' findings revealed a negative association among investment and firm performance. Additionally, Li (2004) also found a negative correlation between investment and firm performance. Furthermore, Lazăr (2016) explored the determinants of profitability for Romanian listed companies between 2000 and 2011, utilizing the resource-based view. The investigation determined that a substantial level of tangible resources is associated with decreased performance (ROA), denoting a negative impact on the company's profitability. Nwauzor and Chukwu (2017) conducted a study on the Nigerian manufacturing industry to scrutinize the association among tangible resources and firm performance. The research assessed the performance of ten publicly listed manufacturing companies utilizing the ROA and ROE standards. The outcomes imply that there is a positive correlation between tangible resources and return on assets, indicating that the presence of tangible assets may contribute to superior company performance. Olatunji and Adegbite (2014) examined the connection between ITA and a company's performance, using net profit margins. The research results show that there is a positive influence of investments in tangibility on profitability. The neoclassical

theory of investment and the Q theory of investment presume profit maximization and the market value of companies regarding investment decisions. Several researchers such as Richardson & Romilly (2008), DeMarzo et al. (2012), and Coad (2010) employ these theories to examine a company's investment behavior. Tangible assets can also serve as collateral for loans, which can help a company acquire additional capital to invest in growth opportunities. Investing in tangible assets can assist a company in increasing its production capacity, accessing additional capital, improving its reputation and credibility, generating passive income, which can lead to better financial performance. Therefore, the study predicts the positive relationship between investment in tangible assets and firm performance.

H1: Investment in tangible assets has positive influence on firm's financial performance.

The business environment is constantly changing due to political, governmental, and bureaucratic decisions, which can create uncertainty and affect firm financial decisions. Numerous studies have shown that EPU has an adverse impact on corporate investments which decrease business performance. In Turkey, EPU has been found to have a negative impact on investment and economic growth. In the US, higher levels of EPU have been associated with reduced company performance. However, a study on Australian firms found a positive correlation between EPU and investment in tangible assets. Neoclassical investment theory prioritizes profit maximization while also recognizing the impact of uncertainties on investment decision. EPU can alter the relationship between investment in physical assets and a company's financial performance by influencing the level of investment in tangible assets and the associated risk level. Consequently, Long et al. (2021) utilize the nonlinear autoregressive distributed lag model to investigate how EPU impacts China's investment in tangible assets. The study's findings suggest that investment in fixed (tangible) assets is disproportionately influenced by EPU. Similarly, Bhagat et al. (2016) explores the impact of EPU on investment in physical assets and India's GDP growth. The study reveals that EPU has an adverse effect on investment in physical assets and GDP growth in the Bombay stock index. The study by Driver & Temple (1999) suggested that investment decisions are impacted not only by costs, relative rates of return, and other conventional variables, but also by risk/uncertainty. EPU can moderate the relationship between investment in tangible assets and a firm's financial performance by influencing the level of investment in tangible assets and the level of risk associated with it. Therefore, 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. Bhatia and Aggarwal (2018) explore how IIA influences firm performance of Indian companies over a 12-year. The findings from using a panel data regression model show that IIA have a positive effect on firm performance controlling specific firm-specific factors. In 1998, Bosworth and Rogers investigated the relationship between intangible assets, particularly research and development (R&D), and the profitability of large Australian companies using data from the IBIS database. The results of the study revealed that intangible assets have a positive association with the market value (Tobin's Q) of the firms. More recently, in 2022, Sayed et al. studied the impact of intangible assets on the profitability of non-financial Egyptian firms over the period from 2012 to 2020. The study employed the GMM for analysis and found that investment in intangible assets has a positive impact on the profitability of non-financial firms in Egypt. Pechlivanidis et al. (2021) assessed the impact of intangible assets including goodwill in predicting corporate profitability. Studies have established that goodwill and intangible assets are valued determinants that provide a competitive edge, enhancing profitability and returns for shareholders. The results of this study affirm that goodwill and intangible assets significantly enhance corporate profitability of Greek-listed firms. Nijun, Z. (2017) explores the relationship between intangible assets and a company's financial performance in the telecommunications industry in China. This study analyzed the financial statements of 17 publicly traded firms between 2014 and 2016 and found that a higher proportion of intangible assets is associated with better financial performance (ROA). Various studies, based on knowledge or resource-based perspectives, also support the notion that investing in intangible assets has a direct and positive impact on a firm's performance (Gamayuni, 2015; Satt, 2016). Intangible assets can provide a company with a competitive advantage in the market, which can translate into increased revenue, reduced costs, and improved financial performance. For instance, Copyrights, Patents provides legal monopoly, goodwill provides reputation and customer

relationships, and Exploration accounts give valuable information about its industry, R & D provides technology and expertise to the firms. So, the study expects a positive sign between investment in intangible assets and firm performance.

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 preserve positive-R&D firms. The study by Atanassov et al. (2015) suggests R & D investment influenced negatively by political uncertainty, which is a key 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 severe disruptions to economic drive a firm to delay IIA. Studies by Bhattacharya et al. (2015) and Gulen and Ion (2015) indicate a significantly negative association among IIA and EPU. The level of EPU can impact both firm IIA and profitability. In other words, the effect of investment in intangible assets on profitability may vary depending on the level of EPU. 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 suggests that company executives have more information about the company's principles than potential investors, leading to information asymmetry. Therefore, internal funding is preferred over other financing types (Myers and Majluf, 1984). This theory recommends that companies prioritize keeping significant reserves of cash and highly liquid assets to fulfill their commitments without relying on external funding sources (Chen, 2004). Anton and Nucu (2021) analyzed 719 publicly listed Polish companies from 2007 to 2016 and found an inverted U-shaped relationship between WC and profitability. According to Simon et al. (2017), there is an optimal level at which working capital investments can provide the highest return. However, Altaf and Shah (2017) suggest that working capital has a negative association with the profitability of a firm. On the other hand, Sharma & Kumar (2011) reveal that working capital has a positive impact on profitability in Indian companies. Prempeh and Peprah-Amankona (2019) conducted a study in Ghana to investigate the association among WC and firm performance. The study utilized a sample of 11 manufacturing Ghanaian companies from

2011 and 2017 and employed the dynamic panel regression technique for analysis. The result of the study indicates a positive and significant association between WC and the profitability of the firms. Lazaridis and Tryfonids (2006) sought to investigate working capital and profitability. They examined information from 131 Athens firm from 2001-2004. WC and profitability as determined by indicators gross profit and cash conversion cycle (CCC) were found to be statistically significantly correlated. Pestonji and Wichitsathian (2019) investigated the connection between WC and financial performance of Thai companies listed in the production sector. The study used path analysis to investigate how a company's working capital policy affects its performance. It analyzed data from 68 firms between 2012 and 2016 and found a positive and statistically significant relationship between investment in working capital and profitability. Furthermore, the study revealed that a firm's WC investment policy influences market value via profitability, serving as a mediator variable. Al-Mawsheki et al., (2019) explore the association among WC and the profitability of Malaysian manufacturing companies of seven years (2010 to 2016). The study analyzed data from 143 firms listed on the Bursa Malaysia Main Market, using balanced panel data. The results showed that a well-managed CCC, which indicates efficient WCM, had a negative impact on economic value added, a proxy for measuring company performance. However, the study also shows a significant and positive connection among firm performance and the ratio of current assets to total assets, which signifies a firm's WC investment strategy. Effective management of working capital can enhance a company's cash flow by ensuring that it has sufficient liquidity to meet its short-term obligations, such as paying suppliers and employees, and avoiding costly delays, which can ultimately lead to improved financial performance. Therefore, the study expects a positive relationship between investment in working capital and firm performance.

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

Studies have shown that high EPU leads to a diminish investments by companies (Handley and Limão, 2015; Bonaime et al., 2018). Additionally, Dbouk et al. (2020) found that optimize EPU results in higher payables, trade credits, and WC, allowing companies to tie up higher capital in business operations. Dbouk et al. (2018) examine the impact of EPU 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 study investigates the importance of working capital for business operations in the context of EPU. It uses data from a sample of nonfinancial companies publicly listed between 2000-2010. The outcomes suggest that WCM is a critical factor in mitigating the negative impact of EPU on firm performance. The study results showed that EPU has a negative impact on WC. However, the researchers argued that there is a positive association between working capital and economic policy uncertainty. Handley and Limão (2015) suggest that elevated levels of EPU has an inverse effect on investment. The existing literature has endeavoured to examine the influence of macroeconomic risk on working capital. Chen et al. (2005) conducted a study on various inventory categories in nonfinancial firms and shows that macroeconomic factors affect the components of WC. As WC competes with fixed investments for a limited pool of funding, reducing (increasing) WC would result in an increase (decrease) in fixed investments. The first goal is to ensure a company's survival during economic downturns by selling assets to increase available WC (Braun and Larrain, 2005). Therefore, the study proposes the following hypothesis.

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

Modigliani and Miller (1958) suggested that the performance of a company is not affected by 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). Similarly, Myers and Majluf (1984) proposed that firms follow a specific sequence for financing sources, beginning with internal financing, followed by debt, and finally equity. Companies first use internal funds, and when they are depleted, they turn to debt financing. If it is not feasible to issue more debt, they issue equity. Danso et al. (2020) demonstrated that corporate leverage has a negative and significant relationship with Indian company performance. According to Tripathy and Shaik (2020), leverage was positively and significantly related to firm profitability listed at BSE India. Ilyukhin (2015) finds that financial leverage has a negative influence on the performance of Russian companies. When interest rates are low, the cost of debt financing is low, making it more attractive

for companies to borrow money and increase their leverage. This can result in higher returns on equity/assets, as the company can invest in higher-return projects with the additional capital. The study by Hongli et al. (2019) indicates that financial leverage has a significant positive influence on Ghanaian business performance. However, as interest rates increase, the cost of debt financing also increases, making it more expensive for companies to borrow and increasing their debt service costs. This can lead to lower returns on equity/assets and increased financial risk for companies with high leverage. Moreover, a rise in interest rates can also decrease the value of existing debt, making it harder for highly leveraged companies to refinance their debt and increase their financial risk. Additionally, an increase in interest rates can also affect the company's creditworthiness and its ability to access debt financing, which can limit its ability to respond to unexpected changes in the market and can negatively impact its performance. Interest rates differ in the context of economies, which provides negative or positive influence on firm profitability. So, the study by Idialu (2013) concluded that leverage had a negative influence on Nigerian business profitability. Seo (2018) found an inverted U-shaped relationship between leverage and performance of US companies in their study. However, in the African context, Fosu (2013) used GMM regression and revealed a significant positive impact of financial leverage on business performance. Additionally, Salim and Yadav (2012) observed that leverage has a positive impact on Tobin's Q. Therefore, this study expects a positive relationship between financial leverage and firm performance.

H7: Financial leverage has a positive influence on a 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. Leverage is considered a crucial investment tool, as noted by Danso et al. (2019). Lee et al. (2017) also argued that EPU may have an impact on firms' decisions regarding leverage by changing their lending practices and their ability to assume risks. In addition, Kotcharin and Maneenop (2018) discovered that EPU in China has a significant effect on the 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. Additionally, the study has revealed that the interest spread in Thailand, which directly impacts the cost of borrowing, has a positive correlation with leverage decisions.

Therefore, it can be observed that firms tend to rely more on financial leverage during times of uncertainty. Additionally, during periods of EPU, companies tend to exercise more caution while making investment decisions, as suggested by Bloom et al. (2007). The study of Çolak et al. (2018) indicates that financial leverage negatively related to policy uncertainty. Tripathy and Shaik (2020) show a positive correlation among firm profitability and financial leverage, while Deden et al. (2020) indicates that leverage has no effect on firm value. Bajaj et al. (2021) analyzed the relationship between EPU and capital structure among Indian firms between 2009 and 2018. The study revealed that EPU has a positive relation with leverage, meaning that firms tend to increase their debt levels in response to higher EPU. However, negative association with the speed of adjustment. The study also found that the growth prospects of firms, particularly those in industries sensitive to government subsidies, play a significant role in the positive impact of long-term policy shocks on leverage. Based on the findings of Schwarz & Dalmácio (2021) shows that as the level of EPU rises, firms are likely to falls their leverage ratios. Therefore, the study proposes the following hypothesis.

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

4.1 Conceptual framework

The fourth figure shows investment in tangible assets, investment in intangible assets, investment in working capital, and financial leverage, as independent variables, and Return on Assets and Tobin's Q, as dependent variables. Furthermore, it also includes an economic policy uncertainty as a moderating variable, which means it will be used to examine how it affects the relationship between independent and dependent variables. The study aims to examine how these independent variables and the moderating variable affect the performance of firms, as measured by the return on assets and Tobin's Q. To control for potential deviation in the results, the study uses firm-specific control variables, such as firm age, firm size, and cash flow for the nonfinancial sector of Pakistan.

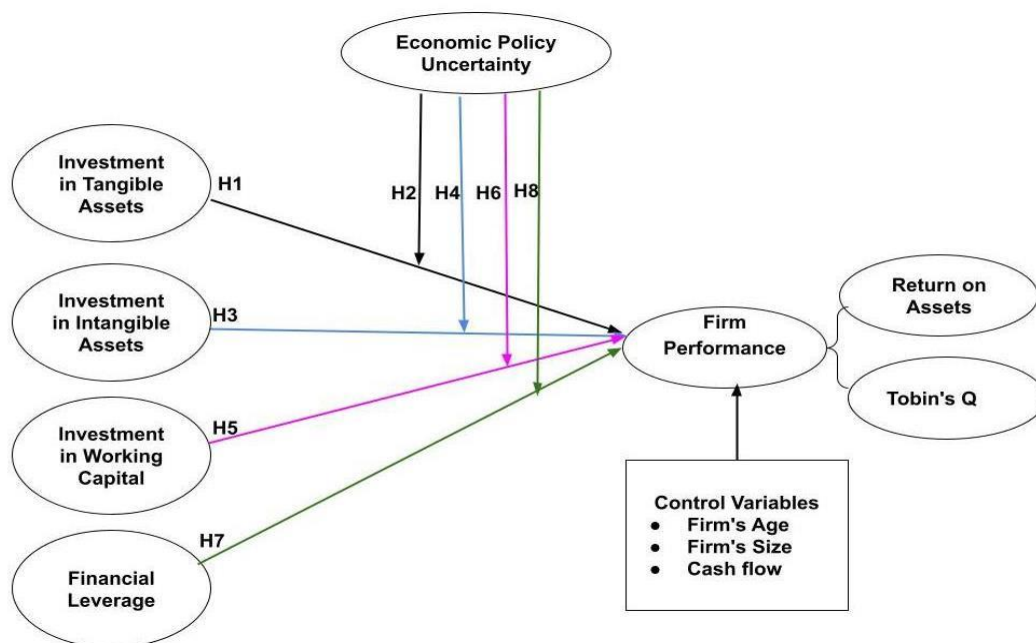


Figure 4: Conceptual framework (Source: Author's Own)

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. The object of the analysis is the non-financial sector of Pakistan, and the population/sample size is 363/223 listed non-financial firms. The time horizon for the study is 10 years, from 2010 to 2019. The data analysis is conducted using STATA and includes descriptive statistics such as mean, standard deviations, maximum, and minimum, as well as inferential statistics such as correlation and regression analysis using linear and nonlinear panel data, static (pooled OLS, random effects, fixed effects) dynamic panel system GMM analysis. The sampling technique used is convenience sampling, a form of nonprobability sampling.

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 <u>Descriptive Statistics</u> Mean, Standard Deviations, Maximum, and Minimum <u>Inferential Statistics</u> 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

A sustainable and diversified stock market is critical for any country's economic development and the same holds true for Pakistan. A well-functioning stock market is critical for bridging the difference between surplus and deficit in economic units. Because of this function, a stock exchange is responsible for raising funds to invest in economically viable projects. Previously, Pakistan had three separate stock exchanges: the Karachi Stock Exchange, the Lahore Stock Exchange, and the Islamabad Stock Exchange. However, on January 11, 2016, these three exchanges were merged under the SE Act, 2012 to create the Pakistan Stock Exchange Limited (PSX), which is now the only stock exchange in the country. As of July 26, 2020, the 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). The population of the study is non-financial sector of Pakistan. The distribution of nonfinancial sector includes 14 economic groups listed at Pakistan Stock Exchange (PSX).

5.2 Research population

The population of the study refers to the secondary data of nonfinancial sector 363 firms trading on the Pakistan Stock Exchange (PSX) and the data are collected from the company's financial Statements on the State Bank of Pakistan (SBP) department of statistics. The nonfinancial segment is one of Pakistan's most significant and backbone industries. This sector has contributed significantly to Pakistan's economic growth, and it also generates the most industrial employment opportunities through technology transfer (Economic survey of Pakistan-Finance division). Table 2 shows the total population of nonfinancial sector by economic group.

Table 2: Classification of manufacturing firms on the 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

Source: State bank of Pakistan Statistics

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. The descriptive statistics for all variables and a summary of the data allow the identification of data errors across all observations. The correlation analysis examines the connection between dependent and independent variables. 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.

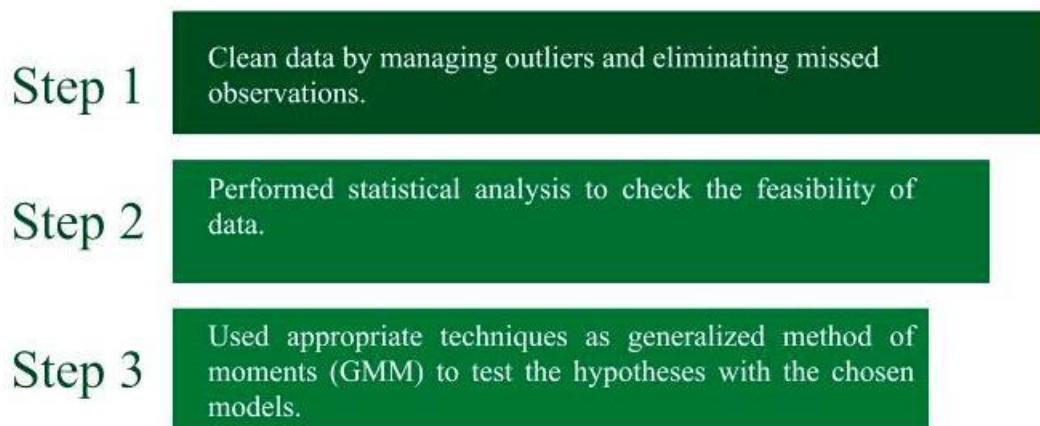


Figure 5: The steps in data processing (Source: Author's Own)

The empirical equations measured through linear and non-linear (multiple regressions). Linear regression analyses the relationship between one response variable and one or multiple predictor variables. It is a useful tool for modelling and forecasting analysis. Linear regression can also be referred to as ordinary least squares (OLS) regression or multiple regression and multivariate regression. Moreover, multiple regressions assess and determine the effect of two or more independent variables on a dependent variable (Jones-Medel, 1991). This was carried out to determine which predictor has a greater impact on explaining the response variable in the regression analysis. Mostly, a simple regression model as follows:

$$Y_{it} = \alpha_{it} + \beta_1 X_{it} + \varepsilon_{it} \quad (1)$$

- (a) Y_{it} = dependent variable
- (b) α_{it} = regression equation intercept
- (c) β_1 = coefficient of regression
- (d) X_{it} = independent variable
- (e) ε_{it} = standard error

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.

$$Y_{it} = \alpha_{it} + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots \dots + \beta_n X_{nit} + \varepsilon_{it} \quad (2)$$

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. One benefit of using a random effects model is that time-constant independent variables can be included and tested in a regression model. On the other hand, a fixed effects model accounts for unobserved unique characteristics within an entity that could affect the dependent variables, as each object has its own persistent attributes that may or may not influence the dependent variables. By controlling for these

time-invariant factors, fixed effects models help to address potential bias that could otherwise impact the relationship between the explanatory and dependent variables. 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. The present study uses this method, which has been found to be flexible and effective. The validity of the instruments used is critical to the reliability of the results obtained from the system GMM estimator. 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; -

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

Model 1

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

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

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

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

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

Model 2

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

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

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

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

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

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)

Investment in tangible assets refers to the acquisition of physical property, such as real estate, machinery, equipment, vehicles, or other assets that have a measurable value and can be owned or controlled to produce income. 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)

Investing in intangible assets can provide a competitive advantage and a stable source of income. For example, owning a patent on a new technology can prevent competitors from using that technology and can generate income through licensing fees. Similarly, owning a strong brand name can increase consumer trust and loyalty, which can lead to increased sales and revenue. Intangible assets are described as distinct assets that cannot be seen, physically examined, or touched, but are generated to time and are recognizable as separate assets. The study chooses to use a balance sheet-type of measure and to examine a subset of assets normally listed under the item "intangible assets", i.e., Copyrights, Patents, Trademarks, Goodwill, Exploration accounts, Knowledge accounts. Based on this measure of 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 leads to the funds that a firm allocates to maintain and increase its liquidity and efficiency. It includes current assets minus current liabilities. The primary aim of investing in working capital is to confirm that a company has enough funds to fulfil its short-term commitments and maintain normal business operations (Amponsah and Asiamah, 2021). Many researchers measure IWC 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 influence of financial leverage on profitability can be either positive or negative. When interest rates are high, financial leverage can have a negative impact on firm performance. It becomes more expensive for a company to borrow money and maintain its leverage. On the other hand, low interest rates leads to positive influence of leverage on profitability. Low-interest rates make it cheaper for a company to borrow money and increase its leverage, which can amplify the returns from its operations. This all depends on the context of the study. Different studies such as (Pan et al., 2019; Baum et al., 2009) uses measure of FL 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). It is calculated using a combination of three different components: newspaper coverage of policy-related economic uncertainty, the number of federal tax code provisions set to expire, and the number of new regulatory proposals. The newspaper coverage component of the EPU index is based on the frequency of words and phrases related to economic policy uncertainty in a sample of leading newspapers. This component captures the level of public and media attention given to economic policy uncertainty. The second component, the number of federal tax code provisions set to expire, reflects the uncertainty surrounding the expiration of tax laws and regulations. This component captures the uncertainty surrounding the future of tax policy and how it may affect businesses and individuals. The third component, the number of new regulatory proposals and political events, reflects the uncertainty surrounding new regulations and how they may affect

businesses and individuals. This component captures the uncertainty surrounding the future of regulatory policy and how it may affect businesses and individuals. The EPU index is widely used by researchers, policymakers and investors to measure the level of policy uncertainty in a country and its potential impact on economic growth and investment decisions. Overall, the EPU index provides a comprehensive measure of the degree of uncertainty in a country's economic policy environment, which can be used to understand the possible effects of policy uncertainty on the economy. 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. Tobin's Q is widely used in finance and economics research to measure market performance, as it captures the market's assessment of a firm's performance and the expectations for future profits. These ratios have limitations, as they are based on financial statement calculations which affected by the firm's accounting policies.

Measure Return on Assets (ROA)

Return on assets (ROA) assesses a profitability of firms by comparing its net income to its total assets. Several researchers adopted the same measure of variable, such as (Abdullah & Tursoy, 2021; Fosu, 2013; Dawar, 2014; Jouda, 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

Control variables are employed in this study to isolate the effect of a specific independent variable on a dependent variable. It is important to control for other factors that may also be influencing the outcome. By controlling for these other variables, researchers can be more confident that any observed relationship between variables. Based on previous related studies and theories, the study adds control variables (firm size, firm age, and cash flow) to control the deviation problem. 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.

Age of the Firm (FA)

The firm age is also a crucial antecedent of the firm's profitability in corporate finance. Since investors' uncertainty decreases as the firm gets older, experienced firms positively predict results (Pastor & Veronesi, 2003). They are becoming more specialized, figuring out how to better coordinate, control and speed up their manufacturing processes while also improving efficiency, lowering costs and increasing profitability (Loderer et al., 2011). Furthermore, older businesses have more up-to-date experience, expertise, and abilities to make a company more successful (Agarwal & Gort, 2002).

Firm size (FS)

One of the essential factors determining a company's value is its size (Surajit & Saxena, 2009). Aron (1988) carries out research and concludes that firm size positively affects financial efficiency. He claims that companies achieve economies of scale faster and handle return on investment more effectively by using assets in a manageable way. Furthermore, large companies are more diverse and have a higher propensity (Berger & Patti, 2006). Previous studies (e.g., Frank & Goyal, 2003; Ramaswamy, 2001) have indicated positive relations between the size of the firm and firm performance.

Cash flow (CF)

Cash flow from operations (CFO) is often used as a control variable in financial studies because it can help to control the influence of different financing and investment activities on a company's overall performance. CFO measures the cash that a company generates from its normal business operations and excludes the effects of transactions such as the sale of long-term assets or investments in other companies. Additionally, CFO is used as a control variable in some studies to control for the potential endogeneity of other variables. In some cases, independent variables may be affected by the same factors that affect the dependent variable, which can lead to biased estimates. In such situations, the inclusion of the CFO as a control variable can help address this problem. CFO is calculated by dividing the cash flow from operations by the net sales. The prior works demonstrate the various results. Cash flow accessibility can help SMEs perform better by lowering the transaction way of managing funds (Al-Najjar and Belghitar, 2011). Since SMEs' transaction costs are comparatively higher than those of larger companies, which benefit from economies of scale, the rewards of cash flow to success are especially high (Faulkender, 2002). Gill and Shah (2012) suggest that having access to cash flow can be beneficial for companies to fulfill their obligations on time, especially in challenging circumstances. Additionally, cash flow can aid companies in avoiding financial troubles, especially those with fluctuating cash flows (Ferreira and Vilela 2004).

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. The first is descriptive analysis, which summarizes the key features of the data, such as its central tendency and dispersion. Then, a correlation matrix is utilized to evaluate the associations among the variables in the data. Finally, the data are analyzed using multivariate regression, both in static and dynamic panel methods.

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 first two variables in column one are ROA, used to measure the accounting performance, and Tobin's Q, used to measure a firm's market performance. Based on all performance indicators, the manufacturing companies in the examined sample are comparatively profitable. 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. On the other hand, Tobin's Q is a dependent variable in another model, 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. It showed that current metrics could provide constructive information about how EPU affects investment and firm performance. 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 standard deviation of 0.433 and 0.840. The descriptive table also shows three control variables of the study: firm size, firm age, and CFO. The sample firms' average size is around 15.373 billion, with a higher-than-normal standard deviation of about 1.914. The largest firm in the sample has assets totalling about 20.457 billion, while the smallest firm has assets of only 8.176 billion. Additionally, the age of the firm's average age is 3.517 years of the sample.

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 of the study's selected 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 literature on corporate finance studies was used VIF to identify the collinearity problem (Garson, 2012; Jermias, 2008; Belsley et al., 1980). The correlation analysis shows the relationships between the study variables and helps determine whether the explanatory variables have a multicollinearity problem. The findings show that there is no multicollinearity between the variables because the reported correlation coefficients are below the 10 thresholds. In the current study, the moderating variable EPU is also regressed as independent variables, allowing the multicollinearity of these variables to be examined alongside other independent variables. The findings clearly show that multicollinearity is not a problem when combined with other variables. The findings demonstrate a linear relationship between the response variable and the independent and control variables. In particular, the response variable and the firm leverage are negatively correlated. In the model, there is not much correlation between the independent, control, and the dependent variables. 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.

In the case of control variables, the correlation table shows that there is a moderate positive association among FS and ROA with a correlation coefficient of 0.278. This means that as the FS increases, ROA also tends to increase. On the other hand, there is a moderate negative relationship between FS and Tobin's Q, with a correlation coefficient of -0.223. This means that as the FS increases, Tobin's Q tends to decrease. The correlation between FA and ROA is 0.069, which indicates a weak positive relationship. This means that as the FA increases, there is a small positive increase in ROA. The correlation between FA and Tobin Q is -0.197, which indicates a weak negative relationship. This means that as the firm age increases, there is a small decrease in Tobin's Q. A positive correlation between cash flow and ROA (0.097) indicates that firms with higher cash flow tend to have high returns on their assets, suggesting that they are more efficient in generating income from their assets. Further, a negative correlation among

CFO and Tobin Q (-0.084) suggests that firms with higher cash flow tend to have lower Tobin Q ratios, indicating that they may be undervalued compared to their peers.

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. It is determined which one of these three models is appropriate to estimate the regression coefficients. After using Hausman test, the decision is taken that Fixed Effects Model is consistent. Referring to Table 1, Models 1 and 2, ROA and Tobin's Q regressed on the ITA, IIA, IWC, FL, EPU, FS, FA and CF panel data estimated using fixed effects models result for 223 firms (2230 observations) are presented in three dimensions in three separate empirical models. 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; Abdulnafa, 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. This shows a negative relationship with firm performance, indicating that a higher EPU causes investors and corporate managers' perceptions of risk to increase, which lowers business performance. This argument is supported by the following studies (Umer Iqbal et al., 2020; Baker et al., 2016; Gulen and Ion, 2016; Ko and Lee, 2015; Sahinoz and Cosar, 2018). 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)

Variables	Model (1) ROA			Model (2) TOBINQ		
	Pooled OLS	RE	FE	Pooled OLS	RE	FE
ITA	-0.082*** (0.011)	-0.064*** (0.015)	-0.041** (0.017)	-1.752*** (0.094)	-1.150*** (0.101)	-1.005*** (0.105)
IIA	-0.003 (0.005)	-0.003 (0.004)	-0.013*** (0.005)	0.002 (0.043)	0.021 (0.030)	0.025 (0.030)
IWC	0.076*** (0.007)	0.061*** (0.008)	0.065*** (0.009)	-0.581*** (0.063)*	-0.317*** (0.054)	-0.251*** (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)

Variables	Model (1) ROA			Model (2) TOBINQ		
	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)

Variables	Model (1) ROA			Model (2) TOBINQ		
	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. The coefficient value of the EPU is -0.093, with Tobin's Q indicating a negative relationship with firm performance. Furthermore, FL and FA have positive coefficient values of 0.186 and 1.047, significant at 0.01. Shows that larger firms have more opportunities to grow and accumulate higher debt, enhancing firm performance.

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

Variables	Model (1) ROA			Model (2) TOBINQ		
	Pooled OLS	RE	FE	Pooled OLS	RE	FE
ITA	-0.082*** (0.011)	-0.065*** (0.015)	-0.043** (0.017)	-1.753*** (0.094)	-1.144*** (0.101)	-0.999*** (0.105)
IIA	-0.003 (0.005)	-0.003 (0.004)	-0.013* (0.005)	0.002 (0.043)	0.021 (0.030)	0.025 (0.030)
IWC	0.081 (0.103)	-0.051 (0.087)	-0.107 (0.087)	-0.723 (0.821)	0.309 (0.533)	0.387 (0.520)
FL	-0.031*** (0.003)	-0.040*** (0.004)	-0.050*** (0.005)	0.058** (0.031)	0.180*** (0.029)	0.186*** (0.030)
EPU	0.009 (0.010)	-2.9E-05 (0.008)	0.009 (0.008)	-0.142* (0.084)	-0.113** (0.05)	-0.093* (0.051)
FS	0.010*** (0.001)	0.001 (0.002)	-0.034*** (0.005)	-0.106*** (0.011)	-0.027 (0.021)	-0.008 (0.033)
FA	0.009** (0.004)	-0.003 (0.008)	-0.014 (0.019)	-0.422*** (0.039)	0.244*** (0.077)	1.047*** (0.115)
CF	0.016** (0.006)	0.003 (0.005)	-0.004 (0.005)	-0.102** (0.051)	-0.074** (0.036)	-0.067* (0.035)
IWC*EPU	-0.001 (0.023)	0.025 (0.019)	0.038** (0.019)	0.031 (0.184)	-0.139 (0.118)	-0.142 (0.115)
Constant	-0.091 (0.055)	0.085 (0.061)	0.683*** (0.093)	5.202*** (0.438)	1.166** (0.454)	-2.109*** (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 investment in working capital coefficient shows a positive and statistically significant value of 0.061 with ROA indicating that a higher investment in working capital leads to enhanced firm performance. The beta value of FL is also positive and significant at 0.1, with ROA suggesting that a higher level of debt increases firm profitability. 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. This significant relationship shows that economic policy uncertainty moderates financial leverage.

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*** (0.011)	-0.066*** (0.015)	-0.044** (0.017)	-1.747*** (0.094)	-1.137*** (0.101)	-0.992*** (0.105)
IIA	0.003 (0.005)	0.003 (0.004)	-0.013*** (0.005)	0.003 (0.043)	0.021 (0.030)	0.024 (0.030)
IWC	0.074*** (0.007)	0.058*** (0.008)	0.061*** (0.009)	-0.573*** (0.063)	-0.302*** (0.054)	-0.235*** (0.055)
FL	0.160** (0.052)	0.133*** (0.043)	0.112* (0.042)	-0.633 (0.412)	-0.540** (0.262)	-0.531** (0.256)
EPU	0.029** (0.013)	0.026** (0.010)	0.025** (0.010)	-0.247** (0.105)	-0.220*** (0.065)	-0.199** (0.063)
FS	0.010*** (0.001)	0.001 (0.002)	-0.033*** (0.005)	-0.106*** (0.011)	-0.030 (0.021)	-0.014 (0.032)
FA	0.009** (0.004)	-0.003 (0.008)	-0.017 (0.019)	-0.422*** (0.039)	0.249*** (0.077)	1.055*** (0.114)
CF	0.017* (0.006)	0.003 (0.005)	-0.004 (0.005)	-0.104** (0.051)	-0.074** (0.036)	-0.068* (0.035)
FL*EPU	-0.043*** (0.011)	-0.039*** (0.009)	-0.036*** (0.009)	0.156* (0.093)	0.161*** (0.058)	0.160*** (0.056)
Constant	-0.219*** (0.065)	-0.032 (0.068)	0.562*** (0.097)	5.666*** (0.518)	1.662*** (0.488)	-1.581*** (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. The model used for this study incorporated the lag of the dependent variable, represented by (L.ROA), which is the first difference of the return on assets. The explanatory variables used in the model include (L.ROA), which is the difference lagged dependent variable of return on assets, and (L.Tobin's Q), which is another commonly used measure of firms' performance.

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 also indicates that a higher tangibility ratio lowers a firm's performance. This negative relationship could be due to several factors specific to the context of Pakistan. For example, investing in tangible assets such as property, plants, and equipment may be more expensive in Pakistan and companies may not be able to leverage these assets effectively to improve their return on assets. In addition, there is regulatory, market, or operational constraints in the country that limit firms' ability to fully utilize these assets to enhance their performance. Another factor is competition; as more firms invest in tangible assets, the competition for market share becomes harder, reducing the potential for high returns.

This study implies that nonfinancial companies could reduce their fixed asset investment or utilize their fixed assets more effectively. 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 lack of technological development may limit the ability of firms to fully leverage their intangible assets, leading to lower returns on investment. However, in the context of Pakistani manufacturing firms, a high investment in intangible assets could indicate that the firm is overinvesting in such assets relative to its level of performance, which results in a decrease in ROA. 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. The positive coefficient value of IWC and ROA in the context of Pakistan suggests that increasing investment in working capital has a positive impact on the firm's return on assets. This could be due to a number of factors, i.e., improved efficiency in the management of inventory, accounts receivable and payable, which can lead to better cash flow management and ultimately better financial performance. Furthermore, a higher investment in working capital in manufacturing firms also indicates that the firm is capable of investing in its short-term operations, which can lead to better performance in the short term. It shows that the business has enough cash flow to cover its on-going costs and short-term obligations. 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. These factors contribute to the negative relationship between financial leverage and ROA. Firms can only be profitable when the return exceeds the

cost of capital. Kundu et al. (2010) found that leverage was negatively related to firm performance. Shin and Kim (2010) asserted that there is a negative link between financial leverage and firm performance and suggested that financial leverage leads to a rise in the cost of debt. The theory of pecking order theory also confirms the negative impact of leverage on firm financial 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. It suggests that corporate investments by enterprises decline when EPU rises in the economy. It is due to high levels of economic policy uncertainty creating an environment of unpredictability and risk for businesses. This can cause businesses to be more cautious about making investments, resulting in lower investment levels, and hence lower ROA. The lack of clarity about future economic policies can also discourage investment in the country, which can further contribute to lower ROA. Additionally, EPU can increase the cost of borrowing for companies, making it more difficult for them to secure the funding they need to grow and expand. All of these factors combined can lead to a negative relationship between EPU and ROA in the context of Pakistan. 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. This significant interaction shows that EPU moderates the relationship between investment in tangible assets and firm performance. When (ITA*EPU) is used as the first interaction variable indicates that the beta value of ITA is (-0.196) and is highly significant at 0.05, and the beta value of EPU is (-0.034) and significant. The positive relationship between the interaction of ITA*EPU with ROA is due to several factors in the context of Pakistan. First, companies that 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. Like, if a firm has invested in machinery, buildings, or other physical assets, it may be better positioned to weather economic downturns and

maintain its operations even in times of uncertainty. Secondly, it could be contributing to the positive relationship between $ITA * EPU$ and ROA is that firms that invest in tangible assets may have a better understanding of the market and the economy and are therefore better equipped to adjust their operations in response to changes in economic conditions. For instance, if a firm invests in machinery or equipment that is in line with market demand, it may be able to quickly pivot and adapt to changes in the economy. Overall, the positive interaction between $ITA * EPU$ and ROA suggests that firms that invest in tangible assets and are also able to effectively manage EPU are likely to have better long-term financial performance. The studies following also indicate a positive impact of EPU on the investment of tangible assets (Wu et al., 2020; Ren et al., 2020). 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 positive interaction of these variables suggests that firms that invest in intangible assets and operate in an unstable economic policy environment may experience particularly strong financial performance. Column 4 shows the interaction results of the $IWC * EPU$ variable and regressed which coefficient value is negative -0.072, statistically significant at 0.01., indicating that economic policy uncertainty negatively moderates investment in working capital and firm performance. The coefficient values of other variables are also changed, which confirms this moderating effect. The following studies also indicate a negative relation of economic policy uncertainty and investment in working capital (Dbouk and Jaber, 2018; Cheng, 2019). 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. In an environment of increasing EPU, these firms may face difficulty in efficiently managing their working capital, leading to reduced profitability as measured by ROA. Furthermore, uncertainty around economic policy can discourage firms from investing in working capital, leading to reduced production and sales, and further contributing to lower ROA. The negative interaction of these variables suggests that Pakistani companies that invest heavily in working capital

and operate in an uncertain economic policy environment may face particular challenges to their financial performance. 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). The coefficient values of FL and EPU also shake -0.147 and -0.033, which are significant at 0.01. This relationship shows a statistically significant moderation effect of EPU and FL. 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	1 st interaction 2 Step sys GMM	2 nd interaction 2 Step sys GMM	3 rd interaction 2 Step sys GMM	4 th interaction 2 Step sys GMM
ROA = L	0.253*** (0.012)	0.252*** (0.012)	0.253*** (0.012)	0.256*** (0.011)	0.260*** (0.012)
ITA	-0.028* (0.014)	-0.196** (0.096)	-0.027* (0.014)	-0.026* (0.013)	-0.025* (0.014)
IIA	-0.008*** (0.001)	-0.008*** (0.001)	-0.214*** (0.052)	-0.008*** (0.001)	-0.009 (0.002)
IWC	0.070*** (0.010)	0.068*** (0.010)	0.073*** (0.011)	0.395*** (0.057)	0.080*** (0.012)
FL	-0.026*** (0.005)	-0.028*** (0.006)	-0.026*** (0.007)	-0.0289*** (0.005)	-0.147*** (0.015)
EPU	-0.018*** (0.004)	-0.034*** (0.010)***	-0.018*** (0.005)	-0.012** (0.004)	-0.033*** (0.006)
FS	-0.015*** (0.006)	-0.015 (0.005)	-0.016*** (0.006)	-0.016*** (0.005)	-0.015*** (0.005)
FA	-0.051*** (0.019)	-0.050* (0.020)	-0.048* (0.0196)	-0.050** (0.020)	-0.049* (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					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).

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 study implies that nonfinancial companies could reduce their fixed asset investment or utilize their fixed assets more effectively. This argument is supported by the following studies (Thanh & Ha, 2013; Zeitun & Saleh, 2015; Nazir, Azam & Khalid, 2021). A negative relationship between ITA and Tobin's Q suggests that Pakistani firms that invest heavily in tangible assets, such as property, plant, and equipment, may experience lower market valuations relative to their replacement cost. This could be due to a number of factors, such as overinvestment in tangible assets leading to excess capacity, difficulties in efficiently allocating these assets, or lower returns on investment in tangible assets compared to other forms of investment. This relationship highlights the importance of considering the role of investment in tangible assets in evaluating firm performance and market value.

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 & Koh (2001). According to the study, IIA, such as brands and technical advances, have growth prospects and the potential to generate more returns. Heiens et al. (2007) empirical work further supports our findings by arguing that intangible assets significantly impact shareholder value. Sahay and Pillai (2009) asserted that spending money on advertising businesses creates a corporate identity that enhances firm performance. Shah et al. (2011) suggested that advertising improves performance by increasing brand image. Ehie and Olibe (2010) also indicate a significant correlation between intangible assets and a firm's financial performance. A positive relationship between IIA and Tobin's Q suggests that manufacturing firms in Pakistan that invest heavily in intangible assets may experience higher market valuations relative to their replacement cost. This could be due to the higher returns on investment in intangible assets compared to tangible assets or the ability of intangible assets to provide a competitive advantage in the market. Additionally, intangible assets can provide greater flexibility to navigate uncertain economic conditions, further contributing to their value in the eyes of investors. 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. A negative relationship between IWC and Tobin's Q suggests that manufacturing firms that invest in working capital, such as inventory or accounts receivable, may experience lower market valuations relative to their replacement cost. 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. A positive relationship between financial leverage and Tobin's Q suggests that firms lever their balance sheets through the use of debt financing may experience higher market valuations relative to their replacement cost. This could be due to the increased financial flexibility provided by debt financing, which allows firms to invest in growth opportunities and improve their market position. The positive relationship between financial leverage and Tobin's Q in the context of Pakistan highlights the importance of considering the role of debt financing in driving firm performance and market value in this market. The results of empirical evidence indicate that the effect of leverage varies among various performance measures for

nonfinancial firms in Pakistan. The findings of this empirical analysis support the trade-off theory by demonstrating a significant connection between a firm's leverage and Tobin's Q. Many studies also support the same result (Ilyukhin, 2015; Ibhagui & Olokoyo, 2018; Chandrakumarmangalam & Govindasamy, 2010). 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. It indicates that economic policy uncertainty influences firm performance significantly. 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. Older firms have greater experience and have built a stronger market presence over time (Nagaoka, 2006). They have developed a good reputation and position in the industry (Lee & Choi, 2015). They are not inclined to newness liabilities and can enjoy superior performance (Stinchcombe, 1965). The size of the company has a positive and significant influence on the financial performance of the firm. The beta value of the firm size is positive 0.032, which is statistically significant at 0.05, as larger firms have more robust competitive capability than smaller ones due to their superior access to resources. The following study also reports the same result (Prasetyantoko & Parmono, 2012). 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. Even the ITA variable experiences a reverse in the direction of the relationship with the firm performance. The moderation of tangible investment assets and the above economic policy uncertainty results strengthens the effect of all controlled and independent variables on firm profitability. 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. However, firms that are able to invest in tangible assets despite the uncertain economic policy environment may be viewed as more resilient and may be rewarded with higher Tobin's Q values. The positive moderating effect of the economic policy uncertainty in the context of Pakistan suggests that investors are paying attention to the ability of firms to navigate challenging economic conditions and are willing to pay a premium for firms that are able to do so. 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). It indicates that non-financial firms' intangible intensity suffers the most when economic instability is high. Investment in intangible assets, such as goodwill, R & D, patents, or brand building, may be viewed as less attractive in uncertain economic environments, as the returns on these investments may be more uncertain and difficult to predict. The negative moderating effect of economic policy uncertainty on the relationship between IIA and Tobin Q in the context of Pakistan highlights the importance of considering the role of economic policy uncertainty in shaping firm market value. 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). Tangible assets investments and working capital compete for the same finite amount of funding. Thus, when firms decide to decrease (increase) working capital, tangible investments would rise (fall). Increasing the level of working capital comes at the expense of investing in tangible assets. The first reason for liquidating assets is to secure a company's short-term survival during economic downturns. The second reason is that companies prioritize investments in both tangible assets and working capital, using them as a source of funding during high levels of economic policy uncertainty (Fazzari and Petersen, 1993). In short, during periods of high economic policy uncertainty, companies typically have substantial working capital. Firms that are able to maintain or increase their investment in working capital despite the uncertain economic policy environment viewed as more resilient and rewarded with higher Tobin Q values. 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). EPU can widen the information asymmetry between creditors and borrowers and alter the risk of default, increasing the cost of debt financing (Zhang et al., 2015). Overall, the results of GMM dynamic panel estimations confirm that economic policy uncertainty moderates the relationship between investment decisions and firm financial performance in the nonfinancial sector of Pakistan. 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	1 st interaction 2 Step sys GMM	2 nd interaction 2 Step sys GMM	3 rd interaction 2 Step sys GMM	4 th interaction 2 Step sys GMM
TOBINQ =	0.550***	0.567***	0.551***	0.562***	0.556***
L	(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 (0.245)	0.673** (0.315)	-0.285 (0.248)	-0.382 (0.239)	-1.09*** (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

This study explores the impact of investment decision on firm financial performance moderated by EPU for a cross-sectional of 223 in the nonfinancial sector of Pakistan, using OLS, fixed, random effects, and system dynamic generalized method of moments (SGMM) panel estimations. The result of the present study is consistent with dynamic system generalized method of moments (SGMM) panel estimations for a data set ranging from 2010 to 2019. The economic and political events affected the firm's investment behavior and Pakistan's economy. Furthermore, the country has gone through several crises, most of which were caused by the period's unstable and unexpected economic conditions, combined with geopolitical and economic circumstances, natural catastrophes, the country's political history, and inconsistent and constantly changing policies (Ahmed and Qayyum, 2008).

Pakistan is considered a suitable context because the firm's investment decisions are influenced by vulnerable fluctuations in economic policy uncertainty. This study provides a rich implication for the companies of developing countries that intend to make investment decisions under economic policy fluctuations. The study examines the direct role of investment decisions and moderating role of economic policy uncertainty on firm financial performance. 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. In addition, there are regulatory, markets, or operational constraints in the country that limit firms' ability to fully utilize these assets to enhance their performance. 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 result of the investment in intangible assets shows a negative impact on firm financial performance measured by ROA. The lack of technological development may limit the ability of firms to fully leverage their intangible assets, leading to lower returns on investment. However, in the context of Pakistani manufacturing firms, a high investment in intangible assets could indicate that the firm is overinvesting in such assets relative to its level of performance, which results in a decrease in ROA. The studies of the following are also consistent with the same results (Nguyen-Anh et al., 2022; Ferdaous et al., 2019; Fang & Lin, 2010). However, investment in intangible assets shows a positive impact on firm market performance (Tobin's Q). The findings of this study are consistent with (Godfrey and Koh, 2001; Heiens et al., 2007; Sahay and Pillai, 2009; Shah et al., 2011; Ehie and Olibe, 2010). A positive relationship between IIA and Tobin's Q suggests that manufacturing firms in Pakistan that invest heavily in intangible assets may experience higher market valuations relative to their replacement cost. This could be due to the ability of intangible assets to provide a competitive advantage in the market. Furthermore, the result of investment in working capital indicates a positive and statistically significant influence on firm performance measured by ROA. It shows that manufacturing firms have enough cash flow to cover their on-going costs and short-term obligations, which is consistent with the existing literature (Aktas, Croci & Petmezas 2015; Sudiyatno, Puspitasari & Sudarsi 2017; Abdulnafea, Almasria & Alawaqleh 2022) but negative and insignificant with the Tobin's Q. In the context of this study, financial leverage has a negative and statistically significant influence on ROA. This is because debt financing often comes with higher interest costs and other related expenses, which can lower a firm's profitability. Additionally, in the context of Pakistan, there are other factors such as the overall financial and economic environment, the availability of credit, the legal and regulatory framework and the high interest rate that influence the relationship between financial leverage and firm performance. The firms can only be profitable when the return on capital employed exceeds the cost of capital (Kundu et al., 2010; Shin and Kim, 2010). The pecking order theory of capital structure also confirms the negative impact of leverage on firm financial performance. The studies of (Ibhagui & Olokoyo, 2018; Raza, 2013; Kale, 2014; Singh & Faircloth, 2005) also documented the same results. In contrast, it has a positive influence on Tobin's Q as a measure of market performance, indicating that higher levels of debt are associated with greater

market performance. A positive relationship between financial leverage and Tobin's Q suggests that firms lever their balance sheets using debt financing may experience higher market valuations relative to their replacement cost. This could be due to the increased financial flexibility provided by debt financing, which allows firms to invest in growth opportunities and improve their market position. This empirical result, leverage's impact on performance measures for non-financial enterprises in Pakistan differs. Both the trade-off hypothesis and the Q theory are supported by the observed significant correlation between a firm's leverage and Tobin's Q as a measure of market performance. The result of the study is also consistent with the existing literature (Ilyukhin, 2015; Ibhagui & Olokoyo, 2018; Chandrakumarmangalam & Govindasamy, 2010). In the context of this study, EPU has a negative and statistically significant impact on firm financial performance (ROA). It means that economic policy uncertainty decreases firm performance in the non-financial sector of Pakistan as a developing country. High EPU cause firms investments to decline, which ultimately influences firm performance. This result is consistent with the existing literature (Umer Iqbal et al., 2020; Baker et al., 2016; Gulen & Ion, 2016; Ko & Lee, 2015; Sahinoz & Cosar, 2018).

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. Like, if a firm has invested in machinery, buildings, or other physical assets, its better positioned to weather economic downturns and maintains its operations even in times of uncertainty. Secondly, investors are paying attention to the ability of firms to navigate challenging economic conditions and are willing to pay a premium for firms that can do so. 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. Additionally, uncertainty around economic policy discourages firms from investing in working capital, leading to reduced production and sales, and further contributing to lower ROA. The following studies also indicate a negative relationship between EPU and investment in working capital (Dbouk & Jaber, 2018; Cheng, 2019).

Furthermore, in the context of this study, the interaction of IIA*EPU and FL*EPU has a negative association, which means that the uncertainty of economic policy negatively moderates the investment in intangible assets and financial leverage in Tobin's Q as a measure of market performance of the non-financial sector. The studies by the following authors are also consistent with our result (Pan et al., 2019; Zhang et al., 2015). EPU can widen the information asymmetry between creditors and borrowers and alter the risk of default, raising the cost of debt financing (Zhang et al., 2015). Bhattacharya et al. (2017) indicates that non-financial firms' intangible intensity suffer the most when economic instability is high. The result of IWC*EPU has positive influence, which means that economic policy uncertainty positively and statistically significant influences on investment in working capital and firm performance (Tobin's Q) in the context of a developing country such as Pakistan. The following study is also consistent with the same argument (Dbouk, Moussawi-Haidar, & Jaber, 2020). Firms adopt the strategy of liquidating some of their assets during economic downturns for two primary reasons: firstly, to secure short-term survival by increasing working capital, and secondly, by regarding fixed assets and working capital as a source of funds, to concentrate their investments on these areas, as proposed by Fazzari and Petersen (1993). In short, during high EPU, firms experience high levels of working capital. The study results reveal that the control variables, such as firm size, age, and cash flow from operations, have a negative effect on the firm's financial performance as measured by ROA (Pervan & urak, 2017), but firm size and age have a positive influence on Tobin's Q (Nagaoka, 2006; Lee & Choi, 2015; Prasetyantoko & Parmono, 2012).

8. LIMITATION OF THE STUDY

The study presented robust evidence that EPU plays a moderating role in the relationship between investment decision 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. The study does not differentiate between industries, but each sector may have unique characteristics in terms of investment decisions, which could be the focus of future research. Additionally, there may be limitations to this study, such as the fact that the results of a limited number of listed companies are not integrated. These are important considerations for further analysis.

The research examines firm-specific factors and the information disclosed in financial statements, but does not consider macroeconomic factors like exchange rates etc. This information could affect investment decisions as well.

9. CONTRIBUTION

9.1. Contribution to theory

The major contribution is to fulfil the contextual gap. Current thesis contributes to a growing stream of corporate finance literature in exploring the impact of investment decision and financial performance of firms under EPU in the Pakistani context, which can represent one of the cases of a developing economy. 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 EPU and investment in the Chinese context, but there are no studies on this issue in Pakistan. The dissertation is complementary to studying the in-depth impact of EPU on investment decisions and firm financial performance in the nonfinancial sector of Pakistan as a developing country.

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. According to the theory, companies tend to increase their borrowing of debt if it marginally boosts their profitability. However, a higher level of debt also increases the financial distress risk and the possibility of defaulting on current obligations. 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. Firms use liquid assets to finance their investments and can save the transaction costs and determine the opus and the amount of the investments in the current assets and liabilities. 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 manufacturing segment broadly contributes to the economy. The trade-off theory proposes that firms achieve the optimal level of liquidity to strike a balance between the benefits and the costs of keeping cash. The neoclassical investment model also suggests that investment decisions are primarily influenced by policy uncertainty. This theory defines the potential for investment postponement in anticipation of new information and the project-specific uncertainty. 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.

The study expands the literature on the moderating role of EPU on investment decisions and financial performance of nonfinancial firms. The result confirms the moderating impact of the EPU on investment decisions in listed Pakistani firms. This dissertation emphasizes that higher economic policy uncertainty influences firm investment decisions in developing countries.

9.2. Contribution to Practice

In practice, the study can help to provide arguable enlightenment of economic policy uncertainty's impact on firm performance for policymakers to realize the importance and influence on economy output. The findings of this study may be considered as meaningful evidence for organizations, especially the nonfinancial sector, as it can help to understand the firms to improve their financial practices to face fluctuating impact of EPU. Furthermore, 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

Investment decisions are concerned with the effective use of capital funds. The profitability or internal finances are taken into consideration when businesses undertake investments. As a result, there is a causal link between profitability and investment. The choice of investments is a crucial financial decision for firms (Aghion & Howitt, 1992). Investment decisions may have a positive impact on shareholder value. Economic policy-driven investment decisions can help developing economies access knowledge and information from developed economies. Therefore, each determinant of investment is crucial and plays a different specific role. The main objective of the dissertation is to examine the impact of investment decisions and firm performance under economic policy uncertainty with a sample of 223 nonfinancial firms trading on the Pakistan Stock Exchange (PSX) over the period of 10 years (2010-2019) using the panel data analysis which are categorized into 14 sectors. The two-step system dynamic panel data estimation technique uses to overcome econometric problems like endogenous problems or unobserved heterogeneity.

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. It indicates that intangible assets enhance firm value. Investment in intangible assets boosts the firm's image, which provides higher returns. Furthermore, investment in working capital shows a positive and statistically significant influence on (ROA), a measure of firm financial performance, but a negative and insignificant influence on Tobin's Q, a measure of a firm's market performance. It suggests that non-financial firms have enough cash flow to manage their on-going cost and short-term obligation, but it is a lower market value of a firm. 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. Different theories also support the results of this study as cited in the dissertation. 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. However, this study has few limitations which mentioned.

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. Researchers can modify their research topic and compare it to future period based on various macroeconomic indicators that measure the fluctuations in expansion opportunities, including GDP, oil prices, electricity shortages, and terrorism levels.

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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).

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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.

The effect of R&D spending on the financial performance of knowledge-intensive industries in Visegrád economies. Journal of Competitiveness.

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)

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Research work overview

I am currently a PhD Candidate at the Faculty of Management and Economics at Tomas Bata University in Zlin, Czech Republic. My research scope covers corporate finance, Investment decisions, interest rate and firm's financial performance, micro and macroeconomics effects on business dealings. Most recent research is economic policy uncertainty, investment decisions and firm's financial performance. I have published several research works in reputable journals and international scientific conference proceedings.

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)

Skills & Abilities

- Commitment to excellence
- Work in a team independently
- Capabilities to learn new thing
- Ability to learn quickly and cope well under pressure
- Strong written and verbal communications in English

Research activities at Tomas Bata University in Zlín

1. Team leader of the research project, Internal Grant Agency of FaME TBU No. IGA/FaME/2022/001. The relationship between economic policy uncertainty, investment behavior, and corporate innovation: A study on Visegrád economies.

2. Participant of the research project, Internal Grant Agency of FaME TBU No. IGA/FaME/2021/011. Macro and Micro analysis of the relationship between investment, Stock market and growth.

Guarantor: Prof. Dr. Ing. Drahomíra Pavelková

Career Details (Academic/professional experience)

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

2017-2018: Manager Finance

SQR Global Services, Pakistan

Key responsibilities

- Producing accurate financial reports and information.
- Developing cash flow statements.
- Projecting profit.
- Managing credit.

Professional Training and Courses:

- Expert reviewer in a symposium at University of Sahiwal held on 1st January 2020
- Certificate of attendance in writing and publishing articles in ISI indexed Journal
- Certificate of Participation in Commonwealth Postgraduate Students in Pakistani forum “Transitioning from Postgraduate Studies to World of Work in the Academia”.
- Certificate of Participation in “Three Minute Thesis Competition 2019” English
- Certificate of Attendance “Training in Transferable skills, module 1: Academic Writing (30 Contact hours)

Awards and Recognition

2020-2022: Awarded extra ordinary scholarships from the rector of Tomas Bata University, on the basis of published research work throughout the PhD.

Research contributions

I have published 23 research articles including conference papers in peer reviewed Journals in Scopus indexed and ESCI and also made 5 submissions for journal and conference publication

APPEDICIES

Annexure 1: Name of selected samples of non-financial firm

Sr. No.	Firms name
1	Abbott Laboratories (Pakistan) Ltd.
2	Ahmed Hassan Textile Mills Ltd.
3	Al-Abbas Sugar Mills Ltd.
4	Al-Noor Sugar Mills Ltd.
5	Altern Energy Ltd.
6	Amtex Ltd.
7	Artistic Denim Mills Ltd.
8	Atlas Battery Ltd.
9	Atlas Honda Ltd.
10	Azgard Nine Ltd.
11	Baluchistan Wheels Ltd.
12	Bannu Woollen Mills Ltd.
13	Bata Pakistan Ltd.
14	Berger Paints Pakistan Ltd.
15	Bestway Cement Ltd.
16	Biafo Industries Ltd.
17	Bolan Castings Ltd.
18	Burshane LPG (Pakistan) Ltd.
19	Byco Petroleum (Formerly Bosicor Pakistan Ltd.)
20	Century Paper & Board Mills Ltd.
21	Chashma Sugar Mills Ltd.
22	Cherat Cement Co. Ltd.
23	Cherat Packaging Ltd.
24	Clover Pakistan Ltd.
25	Colgate-Palmolive (Pakistan) Ltd.
26	Crescent Fibers Ltd.
27	Crescent Steel & Allied Products Ltd.
28	D.G. Khan Cement Co. Ltd.
29	Dar Es Salaam Textile Mills Ltd.

30	Data Agro Ltd.
31	Data Textiles Ltd.
32	Descon Oxychem Ltd.
33	Dynea Pakistan Ltd.
34	Eco Pack Ltd.
35	Ellicot Spinning Mills Ltd.
36	Emco Industries Ltd.
37	Engro Polymer & Chemicals Ltd.
38	Exide Pakistan Ltd.
39	Fatima Fertilizer Co. Ltd.
40	Fauji Cement Co. Ltd.
41	Fauji Fertilizer Bin Qasim Ltd.
42	Fazal Cloth Mills Ltd.
43	Fecto Cement Ltd.
44	Feroze1888 Mills Ltd.
45	Ferozsons Laboratories Ltd.
46	Gatron (Industries) Ltd.
47	General Tyre & Rubber Co.
48	Ghandhara Nissan Ltd.
49	Ghani Automobiles Industries Ltd.
50	Ghani Glass Ltd.
51	Gharibwal Cement Ltd.
52	Ghazi Fabrics International Ltd.
53	Gillette Pakistan Ltd.
54	GlaxoSmithKline Pakistan Limited
55	Globe Textile Mills Ltd.
56	Goodluck Industries Ltd.
57	Gul Ahmed Textile Mills Ltd.
58	Gulistan Spinning Mills Ltd.
59	Gulistan Textile Mills Ltd.
60	Gulshan Spinning Mills Ltd.
61	Habib Sugar Mills Ltd.
62	Hafiz Ltd. (Formerly Hafiz Textile Mills Ltd.)

63	Haji Mohammad Ismail Mills Ltd.
64	Hala Enterprises Ltd.
65	Hamid Textile Mills Ltd.
66	Haseeb Waqas Sugar Mills Ltd.
67	Highnoon Laboratories Ltd.
68	Hinopak Motors Ltd.
69	Hira Textile Mills Ltd.
70	Honda Atlas Cars (Pakistan) Ltd.
71	Huffaz Seamless Pipe Industries Ltd.
72	Hum Network Ltd.
73	Husein Sugar Mills Ltd.
74	IBL HealthCare Ltd.
75	Ibrahim Fibres Ltd.
76	ICI Pakistan Ltd.
77	Ideal Spinning Mills Ltd.
78	Idrees Textile Mills Ltd.
79	Indus Dyeing & Manufacturing Co. Ltd.
80	Indus Motor Co. Ltd.
81	International Industries Ltd.
82	International Knitwear Ltd.
83	Island Textile Mills Ltd.
84	Ismail Industries Ltd.
85	Ittehad Chemicals Ltd.
86	J.A. Textile Mills Ltd.
87	J.K. Spinning Mills Ltd.
88	Janana De Malucho Textile Mills Ltd.
89	Javedan Corporation Ltd.
90	JDW Sugar Mills Ltd.
91	Johnson & Philips (Pakistan) Ltd.
92	Jubilee Spinning & Weaving Mills Ltd.
93	Karam Ceramics Ltd.
94	K-Electric (formerly KESC)
95	Khairpur Sugar Mills Ltd.

96	Khalid Siraj Textile Mills Ltd.
97	Khurshid Spinning Mills Ltd.
98	Khyber Textile Mills Ltd.
99	Kohat Cement Co. Ltd.
100	Kohat Textile Mills Ltd.
101	Kohinoor Energy Ltd.
102	Kohinoor Industries Ltd.
103	Kohinoor Mills Ltd.
104	Kohinoor Power Co. Ltd.
105	Kohinoor Spinning Mills Ltd.
106	Kohinoor Textile Mills Ltd.
107	Kot Addu Power Co. Ltd.
108	KSB Pumps Co. Ltd.
109	Landmark Spinning Industries Ltd.
110	Leather Up Ltd.
111	Leiner Pak Gelatine Ltd.
112	Lotte Chemical Pakistan Ltd.
113	Lucky Cement Ltd.
114	MACPAC Films Ltd.
115	Mahmood Textile Mills Ltd.
116	Mandviwala Mauser Plastic Industries Ltd.
117	Maple Leaf Cement Factory Ltd.
118	Maqbool Textile Mills Ltd.
119	Mari Petroleum Co. Ltd. (Formerly Mari Gas Co. Ltd.)
120	Masood Textile Mills Ltd.
121	Media Times Ltd.
122	Mehran Sugar Mills Ltd.
123	Merit Packaging Ltd.
124	Mian Textile Industries Ltd.
125	Millat Tractors Ltd.
126	Mirpurkhas Sugar Mills Ltd.
127	Mitchell's Fruit Farms Ltd.
128	Mubarak Textile Mills Ltd.

129	Murree Brewery Co. Ltd.
130	Nadeem Textile Mills Ltd.
131	Nagina Cotton Mills Ltd.
132	National Foods Ltd.
133	National Refinery Ltd.
134	Nazir Cotton Mills Ltd.
135	Nestle Pakistan Ltd.
136	Netsol Technologies Ltd.
137	Nimir Industrial Chemicals Ltd.
138	Nishat (Chunian) Ltd.
139	Nishat Chunian Power Ltd.
140	Nishat Mills Ltd.
141	Nishat Power Ltd.
142	Noon Sugar Mills Ltd.
143	Oil & Gas Development Co. Ltd.
144	Otsuka Pakistan Ltd.
145	Pace (Pakistan) Ltd.
146	Packages Ltd.
147	Pak Datacom Ltd.
148	Pak Elektron Ltd.
149	Pak Leather Crafts Ltd.
150	Pak Suzuki Motor Co. Ltd.
151	Pakistan Cables Ltd.
152	Pakistan Engineering Co. Ltd.
153	Pakistan Hotels Developers Ltd.
154	Pakistan Int. Container Terminal Ltd.
155	Pakistan International Airlines Corporation Ltd.
156	Pakistan National Shipping Corporation.
157	Pakistan Oilfields Ltd.
158	Pakistan Paper Products Ltd.
159	Pakistan Petroleum Ltd.
160	Pakistan PVC Ltd.
161	Pakistan Refinery Ltd.

162	Pakistan Services Ltd.
163	Pakistan State Oil Co. Ltd.
164	Pakistan Synthetics Ltd.
165	Pakistan Telecommunication Co. Ltd.
166	Pakistan Tobacco Co. Ltd.
167	Paramount Spinning Mills Ltd.
168	Philip Morris (Pakistan) Ltd.
169	Pioneer Cement Ltd.
170	Power Cement
171	Premium Textile Mills Ltd.
172	Prosperity Weaving Mills Ltd.
173	Punjab Oil Mills Ltd.
174	Quetta Textile Mills Ltd.
175	Quice Food Industries Ltd.
176	Rafhan Maize Products Co. Ltd.
177	Ravi Textile Mills Ltd.
178	Redco Textiles Ltd.
179	Reliance Cotton Spinning Mills Ltd.
180	Reliance Weaving Mills Ltd.
181	Ruby Textile Mills Ltd.
182	Rupali Polyester Ltd.
183	S.G. Power Ltd.
184	S.S. Oil Mills Ltd.
185	Safe Mix Concrete Ltd.
186	Saif Textile Mills Ltd.
187	Sajjad Textile Mills Ltd.
188	Sakrand Sugar Mills Ltd.
189	Salfi Textile Mills Ltd.
190	Samin Textiles Ltd.
191	Sanghar Sugar Mills Ltd.
192	Sanofi-aventis Pakistan Ltd.
193	Sapphire Fibres Ltd.
194	Sapphire Textile Mills Ltd.

195	Sazgar Engineering Works Ltd.
196	Security Papers Ltd.
197	Service Industries Ltd.
198	Shahmurad Sugar Mills Ltd.
199	Shell Pakistan Ltd.
200	Shield Corporation Ltd.
201	Shifa International Hospitals Ltd.
202	Siemens (Pakistan) Engineering Co. Ltd.
203	Sitara Chemical Industries Ltd.
204	Sui Northern Gas Pipelines Ltd.
205	Sui Southern Gas Co. Ltd.
206	Tariq Glass Industries Ltd.
207	Tata Textile Mills Ltd.
208	Telecard Ltd.
209	Thal Ltd.
210	Thatta Cement Ltd.
211	The Crescent Textile Mills Ltd.
212	The Hub Power Co. Ltd.
213	The Thal Industries Corporation Ltd.
214	Treet Corporation Ltd.
215	TRG Pakistan Ltd.
216	Tri-Pack Films Ltd.
217	Unilever Pakistan Foods Ltd.
218	United Brands Ltd.
219	United Distributors Pakistan Ltd.
220	Worldcall Telecom Ltd.
221	Yousaf Weaving Mills Ltd.
222	Zahidjee Textile Mills Ltd.
223	ZIL Ltd.

Abdul Quddus

**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

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