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Exploring Financial Soundness and Economic Growth Dynamics in Pakistan

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Abstract
This study delves into the crucial relationship between financial soundness and economic growth, recognizing the pivotal role of a robust financial system in fostering sustainable development. By assessing various macroeconomic indicators, including broad money supply, foreign debt, interest rates, price level changes, trade openness, world interest rates, and economic growth, we aim to uncover the intricate dynamics at play in Pakistan's economy. Employing cointegration and causality analysis tests, we examine the long-term relationships between financial soundness and economic growth in Pakistan. Our findings from Johansen cointegration tests reveal the existence of significant cointegration relationships, indicating a stable long-term association between key macroeconomic variables and financial soundness. Furthermore, through causality analysis, we uncover insightful patterns in the causal relationships between these variables. The results confirm the presence of feedback mechanisms, unidirectional relationships, and neutrality hypotheses, shedding light on the intricate interplay between financial indicators and economic growth. By elucidating these relationships, our study provides valuable insights for policymakers and stakeholders, highlighting the importance of maintaining financial stability for fostering sustainable economic growth in Pakistan. This research contributes to the broader understanding of the macroeconomic determinants of financial soundness and their implications for economic development strategies.
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1. INTRODUCTION

The health of the financial system plays a pivotal role in driving economic development. Financial development serves as a crucial indicator for forecasting future advancements in economic efficiency, the accumulation of physical capital, and overall economic growth (Audi et al., 2022; Nasir, 2022). A robust financial system facilitates the efficient allocation of capital by channeling savings into productive investments. This process not only fuels the expansion of businesses but also fosters innovation and entrepreneurship. Moreover, a well-functioning financial system provides access to credit and other financial services, empowering individuals and businesses to pursue opportunities for growth and wealth creation. Financial development promotes stability and resilience within the economy by enhancing risk management mechanisms and reducing vulnerabilities to external shocks (Ali, 2018; Kumar and Kumar, 2020; Nguyen and Su, 2021). It facilitates the mobilization of resources, promotes diversification of investment portfolios, and encourages the adoption of sound financial practices. Indeed, financial development plays a crucial role in fostering economic growth and facilitating the accumulation of physical capital within countries. Studies such as those conducted by Levine (1997) and Rajan and Zingales (1998) have highlighted the significance of financial development in driving these outcomes. Financial development encompasses various aspects, including the depth, breadth, efficiency, and stability of financial markets and institutions. A well-developed financial system provides the necessary infrastructure and mechanisms for mobilizing savings, allocating capital to productive investments, and facilitating the efficient functioning of markets.

By providing access to credit and other financial services, financial development enables firms to invest in physical capital, such as machinery, equipment, and infrastructure, which are essential for expanding production capacity and enhancing productivity (Ali, 2022; BELLO, 2022; Khalid and Sultan, 2017; Ali, 2015). Moreover, a robust financial system facilitates the efficient allocation of resources, allowing capital to flow to its most productive uses across different sectors of the economy. Financial development reduces the reliance on external sources of finance, such as foreign direct investment or foreign borrowing, by creating domestic channels for capital formation and investment (Ali and Rehman, 2015; Pham, et al., 2022; Ali, 2022). This enhances economic resilience and reduces vulnerabilities to external shocks and financial crises. Goldsmith's seminal work in 1983 highlighted the vital role of financial sector development in driving economic growth and increasing the size of the financial system relative to the Gross National Product (GNP). His findings emphasized that as financial systems expand and become more sophisticated, they contribute significantly to overall economic development and prosperity (Ali, 2018; Huang, et al., 2021). Financial sector development encompasses various dimensions, including the depth, breadth, efficiency, and stability of financial

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markets and institutions within a country. A well-functioning financial system facilitates the mobilization of savings, allocation of capital to productive investments, and efficient intermediation between savers and borrowers.

By providing access to credit, insurance, and other financial services, a developed financial sector enables individuals and businesses to invest in productive activities, thereby stimulating economic growth and increasing the overall size of the economy. Moreover, a robust financial system fosters innovation, entrepreneurship, and risk-taking, which are essential drivers of economic progress. Goldsmith's (1983) research underscored the positive feedback loop between financial sector development and economic growth. As economies grow, the demand for financial services increases, leading to further expansion and deepening of the financial system. This, in turn, fuels additional economic growth, creating a virtuous cycle of development. A well-developed financial sector enhances the efficiency of resource allocation, reduces transaction costs, and facilitates the transfer of funds across different sectors and regions, promoting economic integration and development. Additionally, it provides avenues for risk management and hedging, which are essential for fostering stability and resilience in the face of economic shocks and uncertainties. Beck et al. (2000) offered significant insights into the relationship between financial sector development and economic growth. Their study underscored the importance of a well-developed financial system, characterized by robust and efficient financial markets and institutions, in fostering economic growth. By analyzing data from a wide range of countries, Beck and colleagues found compelling evidence suggesting that nations with more advanced financial sectors tend to achieve higher rates of economic growth compared to those with less developed financial systems. The findings of Beck et al. (2000) highlighted the critical role played by financial sector development in driving overall economic performance. A deeper, more efficient, and stable financial system enables better mobilization and allocation of savings, facilitating investment in productive activities that spur economic expansion. Moreover, a developed financial sector fosters entrepreneurship, innovation, and risk-taking by providing access to credit and other financial services, thereby fueling economic dynamism and growth. The study by Beck et al. (2000) emphasized that financial sector development is not merely a consequence of economic growth but also a driver of it. Countries that prioritize the development of their financial systems are better positioned to support sustained economic growth by promoting capital accumulation, technological innovation, and resource allocation efficiency. Overall, Beck et al. (2000) and colleagues' research provided valuable empirical evidence supporting the positive association between financial sector development and economic growth, underscoring the importance of financial reforms and policies aimed at strengthening the financial system for fostering long-term economic prosperity.

Additionally, a robust financial sector enhances resource allocation efficiency by channeling funds to the most productive uses in the economy (Ali and Ramakrishnan, 2022; Arshad and Ali, 2016). Through mechanisms such as credit markets, equity financing, and venture capital, the financial system allocates capital to sectors and firms with high growth potential, fostering innovation, technological advancement, and structural transformation. Furthermore, financial sector development promotes financial deepening and inclusion, extending access to financial services to previously underserved segments of the population (Ahmed and Ahmed, 2021; Roussel et al., 2021). By providing banking services, insurance products, and investment opportunities to a wider range of individuals and businesses, the financial system empowers households to save, invest, and protect against risks, thereby contributing to economic stability and resilience. Overall, the multifaceted contributions of a well-developed financial sector to economic growth underscore its central role in supporting sustainable development and prosperity (Susilo, 2022). By facilitating capital accumulation, fostering innovation, improving resource allocation, and promoting financial inclusion, the financial sector acts as a catalyst for broader economic progress and societal advancement. The efficient allocation of resources is vital for maximizing productivity and fostering economic growth. A robust financial sector plays a crucial role in this process by acting as an intermediary between savers and investors, directing funds from surplus units to deficit units where they can be put to the most productive use (Ademu, et al., 2000). Through mechanisms such as credit markets, capital markets, and financial intermediaries, the financial sector helps to match the supply of savings with the demand for investment, ensuring that capital flows to sectors and activities with the highest potential returns. Moreover, by providing access to diverse financial instruments and investment opportunities, the financial sector enables investors to diversify their portfolios and manage risks more effectively. This promotes stability in the economy by reducing the likelihood of systemic shocks and enhancing resilience to external disturbances (Hynes, et al., 2022; Zaman et al., 2010). Furthermore, a well-functioning financial sector facilitates the efficient allocation of resources across different sectors and regions of the economy, promoting spatial and sectoral diversification. By directing capital to areas with comparative advantages and growth potential, the financial system contributes to balanced regional development and the expansion of emerging industries (Shatkin, 2022; Tabata, 2009). The deregulation of financial markets, which gained momentum in the 1970s and continued into subsequent decades, has had profound effects on the global financial system. In countries like the UK, USA, and many Western and Asian economies, this process involved reducing government regulations and controls over financial activities, thereby opening up markets to increased competition and innovation. The consequences of financial deregulation have been far-reaching, impacting various aspects of the economy and society (Ülgen, 2021).

One of the primary outcomes of financial deregulation has been the liberalization of credit markets and the expansion of personal debt. With fewer restrictions on lending and borrowing, financial institutions have been able to offer a wider range of credit products to consumers and businesses. This has led to increased access to credit for individuals and companies, enabling them to finance consumption, investment, and other activities. However, it has also contributed to a significant rise in household and corporate debt levels, as borrowers take advantage of easy credit conditions (Smith, 2021). The deregulation of financial markets has fostered greater financial innovation and product development.

Financial institutions have been able to introduce new products and services, such as derivatives, securitization, and structured finance, which have expanded the range of investment opportunities available to investors and facilitated risk management strategies for businesses. While financial innovation has brought benefits in terms of increased efficiency and liquidity in markets, it has also created new challenges, such as complexity and opacity in financial products and markets. Financial deregulation has led to increased globalization and integration of financial markets, as barriers to cross-border capital flows have been lowered. This has facilitated the flow of capital between countries, allowing investors to diversify their portfolios and access investment opportunities in foreign markets (Sahabuddin, et al 2022). However, it has also exposed economies to greater risks from global financial shocks and increased the interconnectedness of financial institutions and markets. The phenomenon of financial imbalance and underdevelopment can indeed have significant repercussions for economies, potentially trapping them in a cycle of poverty and hampering their overall economic conditions. Berthelemy and Varoudakis (1996) and Slutz (2005) highlight how such imbalances can constrain the flow of capital within an economy, limiting investment opportunities and impeding economic growth. This situation is reminiscent of Italy's experience, particularly after the 1960s, when financial imbalances contributed to a decline in investment, economic expansion, and export performance. Italy's case serves as a pertinent example of how financial imbalances can undermine economic progress. Prior to the 1960s, Italy enjoyed favorable economic conditions, but the emergence of financial imbalances disrupted this trajectory. These imbalances likely constrained access to financing for investment projects, stifled entrepreneurial activity, and hindered the competitiveness of Italian industries in global markets. As a result, Italy faced challenges in sustaining economic growth and maintaining its position in the global economy.

To address such challenges, policymakers often advocate for a focus on liberalizing financial development. By promoting financial liberalization, economies can foster greater access to capital, encourage investment, and stimulate economic growth over the long term. Avdeef,et al., (1978) underscores the importance of policies aimed at liberalizing financial markets and institutions, as they can facilitate the efficient allocation of resources, enhance financial intermediation, and promote economic dynamism. In essence, addressing financial imbalances and promoting financial development are crucial steps for economies seeking to break free from the constraints of poverty and achieve sustainable growth (Wei et al., 2021). By creating an enabling environment for investment, entrepreneurship, and innovation, economies can unleash their growth potential and improve the well-being of their citizens. However, it's essential for policymakers to carefully balance liberalization efforts with prudent regulation and oversight to mitigate risks and ensure the stability of the financial system. Financial deregulation, spurred by the trend of financial globalization, has indeed brought about both advantages and disadvantages for economies around the world. One of the key benefits associated with financial liberalization is the development of stock markets and investment opportunities, which can contribute to economic growth and prosperity. As noted by Philip et al., (1997), the opening up of financial markets can attract domestic and foreign investment, thereby stimulating capital formation, fostering entrepreneurship, and driving economic expansion.

Stock market development, in particular, can play a crucial role in facilitating the efficient allocation of capital and resources within an economy. By providing a platform for companies to raise funds and investors to diversify their portfolios, well-functioning stock markets can enhance liquidity, promote corporate governance, and encourage innovation and entrepreneurship. Moreover, the availability of diverse investment options can mobilize savings, channel them into productive investments, and spur economic development. In addition to stock market development, financial liberalization can also facilitate greater access to credit and financial services, which can empower individuals and businesses to pursue investment opportunities and expand their economic activities (Yang et al., 2022). Increased access to credit can fuel consumption, investment in productive assets, and entrepreneurship, thereby stimulating economic growth and creating employment opportunities. However, it's important to acknowledge that financial deregulation and globalization also pose challenges and risks for economies, including heightened financial volatility, increased exposure to external shocks, and greater susceptibility to financial crises. Therefore, policymakers must carefully manage the process of financial liberalization, ensuring that it is accompanied by effective regulatory frameworks, prudential oversight, and risk management mechanisms to safeguard financial stability and mitigate systemic risks. The debate surrounding the benefits and costs of financial globalization remains complex, with divergent views on its impact across different economies. While some argue that financial globalization can bring significant gains for developed economies, others highlight its potential drawbacks and limitations, particularly for weaker and developing economies.

Research by Schmukler and Sergio (2004) suggests that only a few developed economies stand to gain substantially from financial globalization, while weaker developing economies may not reap as much benefit. This disparity in gains reflects underlying differences in economic structure, institutional capacity, and financial market development between developed and developing countries. While developed economies may have the resources and regulatory frameworks to leverage the opportunities presented by financial globalization, developing economies may face challenges such as limited access to capital, weaker institutions, and greater vulnerability to external shocks. Moreover, the IMF report on the effects of financial globalization, as cited by Prasad et al. (2003), Shahpiro, (2010) underscores the nuanced nature of the relationship between financial integration and economic outcomes. The report suggests that while financial globalization can offer potential benefits such as increased capital flows, portfolio diversification, and access to international markets, it also entails costs and risks. These may include greater exposure to financial volatility, contagion effects, and challenges in managing capital flows and exchange rate stability. Importantly, the IMF report highlights that there is no one-size-fits-all approach to financial globalization, as its impact varies depending on a range of factors including country-specific characteristics, policy frameworks, and external conditions (Balasubramanian et al

2021). While some economies may be able to harness the benefits of financial integration effectively, others may face significant challenges and vulnerabilities. Therefore, policymakers need to carefully assess the potential risks and benefits of financial globalization and implement appropriate policy measures to maximize its positive impact while mitigating potential downsides.

The UNCTAD report highlights the paradoxical nature of finance-driven globalization, shedding light on the transformative effects of globalization on the international financial system. While globalization has indeed facilitated the integration of economies and transformed the world into a "global village," the process has also been accompanied by significant changes in the structure and regulation of international finance (Omilusi and Olorunfemi, 2021). The report underscores the role of massive deregulations in the 1980s, which reshaped the international financial landscape and paved the way for increased financial integration and liberalization. These deregulatory measures, often driven by market-oriented policies and ideologies, aimed to promote efficiency, competition, and innovation in financial markets. However, the UNCTAD report suggests that not all countries have embraced these deregulatory trends uniformly. Some countries with strong economic progress have rejected the one-size-fits-all approach to financial deregulation and have instead pursued innovative policies tailored to their specific economic circumstances and development goals. This divergence in policy approaches reflects a broader debate surrounding the benefits and costs of financial globalization, as well as the appropriate role of regulation and intervention in financial markets. While deregulation may offer opportunities for increased market efficiency and capital mobility, it also raises concerns about financial stability, investor protection, and systemic risk. By highlighting the experiences of countries that have adopted alternative approaches to financial globalization, the UNCTAD report underscores the importance of policy innovation and flexibility in navigating the complexities of global finance. Rather than adhering blindly to deregulatory orthodoxy, countries may benefit from adopting a more nuanced and context-specific approach to financial regulation and integration, taking into account their unique economic circumstances, institutional capacities, and development objectives. The interconnected nature of financial liberalization has indeed created a web of interdependencies among countries, amplifying the potential for financial contagion and systemic risk. This heightened interconnectedness means that even minor financial imbalances or shocks in one part of the world can quickly spread across borders, leading to significant financial losses and economic disruptions (Kamal et al., 2021).

In light of these challenges, economists are faced with a dilemma: whether to prioritize domestic economic stability by limiting connections with the international economy or to embrace globalization and the benefits of increased financial integration. Both approaches have their merits and drawbacks, and the choice between them hinges on a complex array of economic, political, and social factors. One possible strategy for navigating this dilemma is to introduce new policies aimed at stabilizing macroeconomic indicators and strengthening domestic financial channels to resist external shocks (Rostagno, et al., 2021). Fiscal stimulus measures, for example, can help bolster domestic demand and cushion the economy against external downturns. Additionally, maintaining robust financial institutions and regulatory frameworks can enhance the resilience of the financial system and mitigate the transmission of financial crises across borders. Moreover, policymakers may consider adopting measures to enhance financial resilience at the international level, such as strengthening coordination and cooperation among central banks and regulatory authorities (Svartzman, et al., 2021). By fostering greater transparency, information sharing, and coordination of policy responses, countries can better manage and mitigate the risks associated with financial globalization. Ultimately, the choice between fostering domestic economic stability and embracing financial globalization is not a binary one, but rather a nuanced decision that requires careful consideration of the trade-offs involved. By implementing prudent policies that balance the benefits of globalization with the need for financial stability, countries can navigate the complexities of the interconnected global economy and promote sustainable economic growth and development.

The works of McKinnon (1973) and Shaw (1973) have been instrumental in shaping the discourse around financial reforms and liberalization in developing countries. These seminal studies argued that deregulation of financial markets could lead to significant benefits for developing economies by mobilizing higher levels of financial savings and channeling them into more productive investments. One of the key insights from these studies is that financial liberalization can stimulate economic growth by improving the efficiency of capital allocation. By reducing restrictions on financial intermediation and allowing for greater competition in the financial sector, countries can facilitate the flow of capital to its most productive uses. This, in turn, can lead to increased investment in physical capital, such as infrastructure and machinery, which is essential for driving economic growth. Moreover, financial liberalization can also enhance the efficiency of resource allocation by promoting the development of financial markets and institutions. By providing individuals and businesses with access to a wider range of financial products and services, including credit, insurance, and investment opportunities, financial liberalization can help to unlock the productive potential of the economy and foster innovation and entrepreneurship.

The study conducted by Brownbridge and Kirkpatrick (2000) provides valuable insights into the impact of financial sector reform in developing countries. By analyzing data from 84 countries across Asia, Latin America, and Africa over the period of 1980-1999, the study sheds light on the outcomes of financial deregulation and liberalization efforts in these regions. One of the key findings of the study is that financial sector reform often fell short of expectations due to the underdeveloped and imperfect characteristics of financial markets in many developing countries. In some cases, premature deregulation occurred, where policymakers moved to liberalize financial markets before the necessary institutional frameworks and regulatory mechanisms were in place to ensure their stability and effectiveness. This premature deregulation had detrimental effects on the financial system as a whole, leading to a range of issues such as increased volatility, inadequate supervision and regulation, and susceptibility to external shocks. These challenges

undermined the ability of financial markets to fulfill their intended functions of mobilizing savings, allocating capital efficiently, and facilitating economic growth.

The findings of Brownbridge and Kirkpatrick (2000) highlight the importance of sequencing and pacing financial sector reforms appropriately to match the level of institutional development and market sophistication in each country. Rushing into liberalization without addressing underlying weaknesses in the financial system can exacerbate vulnerabilities and undermine the effectiveness of reform efforts. The World Bank report conducted in 1999, encompassing 60 countries across various regions, sheds light on the repercussions of financial sector collapses on economic growth, particularly in developing and underdeveloped nations. The findings of the report underscore the severe impact of financial crises on these economies, leading to adverse consequences such as heightened poverty levels and inflation. Financial sector collapses can have far-reaching and detrimental effects on economic growth, exacerbating existing vulnerabilities and undermining macroeconomic stability. In developing countries, where financial systems may be less resilient and regulatory frameworks less robust, the fallout from such crises can be particularly severe. One of the key channels through which financial sector collapses affect economic growth is through disruptions to credit provision and investment activity. As financial institutions falter and confidence in the banking sector wanes, lending may contract, leading to a decline in investment and economic activity. This can have ripple effects throughout the economy, resulting in job losses, income declines, and reduced consumer spending. Moreover, financial crises often contribute to increased poverty levels, as households and businesses grapple with financial distress, unemployment, and income loss. Vulnerable populations, such as the poor and marginalized, are disproportionately affected, exacerbating social inequalities and widening the poverty gap (Ahmad and Ali, 2016). Additionally, financial turmoil can fuel inflationary pressures, as currency depreciation, supply chain disruptions, and heightened uncertainty contribute to rising prices of goods and services. This erodes purchasing power and undermines the welfare of households, particularly those on fixed incomes or with limited access to essential goods.

2. REVIEW OF LITERATURE

The study conducted by Berthélemy and Varoudakis (1996) delved into the relationship between financial development policies and economic growth across OECD countries. Through their analysis, they aimed to elucidate how financial development influences not only economic growth but also poverty alleviation efforts. One of the key findings of their study was the significant impact of insufficient financial development on countries, leading them into what the researchers termed a "poverty trap." This suggests that countries with underdeveloped financial systems may struggle to achieve sustainable economic growth and may remain mired in poverty. The notion of a poverty trap implies a scenario where economic conditions perpetuate poverty, making it difficult for individuals and households to escape impoverished conditions. Insufficient financial development exacerbates this situation by limiting access to credit, investment opportunities, and financial services, thereby constraining economic activities and perpetuating poverty. In light of these findings, Berthélemy and Varoudakis (1996) underscored the importance of prioritizing financial development as a means to break out of the poverty trap. They argued that enhancing the depth and efficiency of financial systems can play a crucial role in stimulating economic growth and fostering poverty reduction. By expanding access to financial services, promoting investment, and improving capital allocation, countries can create opportunities for income generation, job creation, and wealth accumulation, all of which are essential for lifting people out of poverty.

In their study on financial development and economic growth, Philip et al., (1997) employed causality tests for South Korea and conducted cross-country regressions for Germany and the United States to explore the empirical evidence of the relationship between financial development and economic growth. Their findings revealed a robust link between financial development and economic growth, suggesting that countries with more developed financial systems tend to experience higher rates of economic growth. This empirical evidence underscores the importance of financial sector policies in fostering economic development and prosperity. Moreover, the study shed light on the relationship between financial liberalization, stock market development, investment, and growth. By analyzing these interrelated factors, Philip et al., (1997) provided valuable insights into the mechanisms through which financial development contributes to overall economic expansion. The study's emphasis on policy implications highlights the importance of adopting measures that promote financial sector development and liberalization. By fostering an environment conducive to financial innovation, investment, and market development, policymakers can stimulate economic growth and enhance long-term prosperity. In Levine's et al (2000) seminal study "Financial Development and Economic Growth: Views and Agenda," conducted in 1997, data from 80 countries spanning back to the 1960s was analyzed. The study focused on assessing the relationship between financial development and economic growth by examining three measures of growth and four measures of financial development across these countries. Levine' et al (2000) research highlighted the pivotal role of financial development in fostering economic growth, physical capital accumulation, and improvements in economic efficiency. By analyzing various indicators of financial development alongside measures of economic growth, the study provided valuable insights into the dynamics of financial systems and their impact on broader economic outcomes. The findings of the study underscored the importance of prioritizing financial sector reforms and policies aimed at enhancing the depth, efficiency, and stability of financial markets and institutions. By promoting financial development, countries can create an enabling environment for investment, innovation, and entrepreneurship, which are essential drivers of economic growth and development.

In their 1998 study titled "Financial Dependence and Growth," Rajan and Zingales (1998) examined the relationship between financial dependence of industries and economic growth in the context of the US economy. Their research

focused on investigating how the level of external finance accessed by industries influences their growth trajectories and, consequently, the overall economic performance. Rajan and Zingales (1998) study provided empirical evidence supporting a strong relationship between financial development and the financial dependence of industries. They found that industries reliant on external finance, such as borrowing from financial institutions or accessing capital markets, tend to experience greater levels of growth and contribute significantly to overall economic expansion. By highlighting the positive impact of external finance on both financial development and economic growth in the US, Rajan and Zingales (1998) underscored the importance of a well-functioning financial system in facilitating investment, innovation, and productivity gains across industries. Their findings emphasized the role of financial markets and institutions in providing businesses with the necessary funding and resources to support their expansion and contribute to broader economic development.

In Perotti (1999) conducted a study to explore the impact of fiscal stimulus on private consumption in periods characterized by high levels of government debt. Using a sample of 19 OECD countries, Perotti's (1999) focused on analyzing the relationship between public debt levels relative to GDP and the effectiveness of fiscal policy in stimulating private consumption. Employing a regression model, Perotti's (1999) study aimed to assess how variations in the degree of public indebtedness influenced the effectiveness of fiscal stimulus measures. The findings of the study revealed significant results suggesting that the effectiveness of fiscal policy indeed depends on the level of public debt. Specifically, Perotti's (1999) research indicated that in periods when government debt levels are high relative to GDP, fiscal stimulus measures may have a reduced impact on private consumption. This implies that the effectiveness of fiscal policy interventions in stimulating economic activity and consumer spending is contingent upon the fiscal health of the government, particularly its debt burden relative to the size of the economy. By shedding light on the nuanced relationship between fiscal stimulus, public debt, and private consumption, Perotti's (1999) study provided valuable insights for policymakers grappling with decisions regarding fiscal policy interventions, especially during periods of economic uncertainty or high levels of government indebtedness. Understanding how fiscal measures interact with the broader macroeconomic context is crucial for formulating effective policy responses aimed at promoting economic stability and growth.

In Beck et al. (2000) and colleagues conducted a comprehensive study titled "Financial Intermediation and Growth: Causality and Causes," aiming to investigate the relationship between financial intermediation and economic growth. The research utilized both traditional cross-sectional and panel data techniques to explore the causal mechanisms and determinants underlying this relationship. The findings of the study affirmed the existence of robust and significant relationships between financial intermediation and economic growth within economies. Through rigorous empirical analysis, Beck et al. (2000) provided compelling evidence supporting the notion that financial development plays a crucial role in fostering economic growth and development. By employing both cross-sectional and panel data methodologies, the study offered a comprehensive perspective on the dynamics of financial intermediation and its impact on economic growth across different countries and over time. This multifaceted approach enabled the researchers to uncover nuanced insights into the causal mechanisms driving the relationship between financial development and economic performance.

In Pablo (2000) conducted a comprehensive analysis titled "Novelties of Financial Crisis in the 1990s and the Search for New Indicators." The study aimed to achieve two primary objectives: firstly, to explore the correlations among three major financial crises—the Exchange Rate Mechanism (ERM) crisis of 1993-1994, the Mexican crisis of 1994-1995, and the East Asian crisis of 1997-1998—and secondly, to identify appropriate indicators for predicting financial crises. Through rigorous empirical analysis and comparative examination of the three crises, Pablo (2000) sought to uncover the underlying causes and commonalities among them. The study concluded that each of the three crises was triggered by distinct factors and exhibited unique characteristics, highlighting the complexity and diversity of financial crises. Furthermore, Pablo's (2000) analysis identified two key indicators that emerged as particularly important for predicting financial crises: financial soundness and the composition of external debt currency. These indicators were found to play a crucial role in assessing the vulnerability of economies to financial instability and forecasting the likelihood of future crises. By shedding light on the nuances of financial crises and proposing novel indicators for crisis prediction, Pablo's (2000) study contributed valuable insights to the field of financial economics. The findings underscored the importance of comprehensive risk assessment and early warning systems in mitigating the impact of financial crises and safeguarding financial stability.

In their 2004 study titled "Financial Globalization: Gain and Pain for Developed Countries,"Schmukler and Sergio (2004) delved into the complexities of financial globalization and its implications for developed economies. They recognized that while the globalization of the financial system offers numerous advantages, it also poses significant challenges and risks for countries, particularly in the context of financial crises. The study examined the dual nature of financial globalization, acknowledging the potential benefits of increased global integration, such as enhanced access to international capital markets, greater financial innovation, and improved efficiency in resource allocation. However, Schmukler and Sergio (2004) also highlighted the inherent vulnerabilities and downside risks associated with financial globalization, including the heightened interconnectedness of financial markets and the potential for contagion during periods of crisis. One of the key insights of the study was the uneven distribution of gains and pains among developed countries as a result of financial globalization. While some countries may reap the benefits of deeper financial integration, others may bear the brunt of financial instability and crisis contagion. Schmukler and Sergio (2004) emphasized the need for further research to better understand how economies can navigate the process of international integration without succumbing to the adverse consequences of financial crises.

In his 2005 study titled "The Limits of Financial Globalization over the Last 60 Years in Developed and Developing Countries," Stulz delved into the constraints and challenges associated with financial globalization, particularly in the context of both developed and developing economies. The study aimed to identify the factors that limit the extent of financial globalization and its potential impact on economic growth and development. One of the key findings of Stulz's research was the presence of inherent limitations to financial globalization, despite the reduction of explicit financial barriers over the preceding six decades. He identified the "twin agency problem" as a significant obstacle to the full realization of the benefits of financial globalization. The twin agency problem refers to the conflict of interest that arises between the rulers of sovereign states and corporate insiders within a country. This conflict can lead to ownership concentration, where a small group of individuals or entities exert disproportionate control over economic resources and decision-making processes. As a result, economic growth and financial development may be hampered, and the potential advantages of financial globalization may be diminished. Stulz argued that addressing the twin agency problem is essential for maximizing the benefits of financial globalization and promoting sustainable economic growth. By reducing ownership concentration and ensuring greater transparency, accountability, and governance in both public and private sectors, countries can unlock the full potential of financial globalization and leverage it to drive economic prosperity.

Atkins 2005 study, "Financial Crisis and Money Demand in Jamaica," focused on analyzing the mid-1990s crisis in Jamaica. Utilizing structural co-integration vector autoregression (VAR), Atkins (2005) aimed to discern the long-run structural relationship and short-run monetary policy effects on macroeconomic variables within the Jamaican context.

In the midst of the crisis, the Jamaican economy employed interest rates as a primary tool to manage inflationary pressures. Atkins (2005) findings underscored the effectiveness of monetary policy as a viable tool for navigating crisis conditions. However, the study also highlighted the susceptibility of monetary policy to influence from traditional variables, suggesting that economic stability and crisis management strategies in Jamaica may be subject to broader economic dynamics and external factors. By employing advanced econometric techniques such as structural co-integration VAR, Atkins (2005) provided valuable insights into the interplay between financial crises, money demand, and monetary policy effectiveness in Jamaica. The study's findings contribute to a deeper understanding of the complexities surrounding crisis management and economic policy formulation in the Caribbean nation, offering potential implications for policymakers and researchers alike.

In their 2008 study titled "The Anatomy of Banking Crises," Duttagupta and Cashin (2008) delved into the intricacies of banking crises, particularly focusing on developing countries. Employing binary tree classification methodology and utilizing data spanning from 1990 to 2005, the study aimed to assess the vulnerability of banks' performance in the face of crises. The findings of the study highlighted three primary factors that contributed to the likelihood of a banking crisis. Firstly, higher levels of inflation were identified as a significant risk factor, indicating that economies experiencing elevated inflation rates were more susceptible to banking crises. Secondly, the study underscored the role of highly dollarized bank deposits, particularly when coupled with nominal depreciation or low liquidity conditions. Lastly, lower profitability of banks emerged as another critical determinant of crisis vulnerability.

By elucidating the key determinants of banking crises in developing countries, Duttagupta and Cashin's (2008) study provided valuable insights for policymakers, regulators, and financial institutions. The identification of these factors can inform the design and implementation of more robust regulatory frameworks and risk management practices aimed at safeguarding financial stability and resilience in developing economies. In their 2008 study on the impact of the global financial crisis on the Iranian economy, Pour and Amir (2008) delved into the repercussions of the crisis, particularly on oil-producing economies. As a significant oil-producing nation, Iran was not immune to the effects of the crisis, which had led to a substantial decrease in global oil demand, estimated at around 70%. The study highlighted how the financial crisis had exerted downward pressure on oil prices worldwide, posing challenges for oil-exporting countries like Iran. Amidst these challenges, governments and central banks worldwide were compelled to respond assertively to mitigate the fallout of the crisis. One key conclusion drawn from the study was the potential benefit of reducing dependence on the global economy. By diversifying its economic activities and reducing reliance on external factors, Iran could potentially mitigate the negative effects of the crisis. This finding underscores the importance of enhancing domestic economic resilience and promoting self-sufficiency as strategies for navigating through global economic downturns. The report "Debt Crisis and Trade in Developing Countries" conducted in 2008, explored the intricate relationship between debt crisis and trade dynamics, particularly in developing nations since the 1980s. It shed light on the challenges faced by these countries, characterized by a complex interplay of factors. One significant finding of the study was the contrasting trends in raw material prices and oil prices. While raw material prices experienced a decline, oil prices surged during the period under review. This juxtaposition created a scenario where even with increased exports, developing countries encountered diminished gains due to the disparity in price trends. Consequently, the decline in income from exports compounded the existing debt burden of these nations. The report underscored how the combination of reduced export earnings and mounting debt obligations exacerbated economic challenges for developing economies. Moreover, the simultaneous increase in interest rates in the global market further intensified the financial strain on these countries, accentuating the urgency for comprehensive strategies to address debt sustainability and promote equitable trade practices. The report "The ECB and IMF Indicators for the Macro-Prudential Analysis of the Banking Sector," authored by Andreazza,et al. in 2008, delved into the critical role of indicators provided by the International Monetary Fund (IMF) in analyzing the macro-prudential aspects of the banking sector. Central to the discussion was the concept of financial soundness, recognized as a cornerstone for the smooth operation and development of the banking sector. However, achieving financial soundness was contingent upon maintaining

macroeconomic stability. Conversely, the stability of the macroeconomic environment was susceptible to various factors, with inflation emerging as a particularly pertinent concern. Inflation was identified as a destabilizing force with far-reaching implications for both the economy as a whole and the banking sector specifically. While inflation may lead to nominal value increases, it concurrently erodes real values. This dynamic underscored the interconnectedness of economic variables and the imperative of fostering macroeconomic stability to support the sound functioning of the banking sector.

Schmidt (2009) investigated the global financial crisis and its repercussions on the Chinese economy. The research shed light on the significant adverse effects experienced by China's banking sector in the wake of the crisis, with performance metrics plummeting sharply. The crisis manifested in a pronounced downturn for China's banks, exacerbating existing vulnerabilities within the financial sector. Particularly noteworthy was the severe depreciation in the stock market, which commenced in October 2008 and precipitated a staggering decline, wiping out more than two-thirds of the market's total value. This dramatic contraction underscored the depth of the crisis's impact on China's financial landscape, highlighting vulnerabilities and systemic weaknesses within the sector. However, amidst the turmoil, Chinese entrepreneurs exhibited resilience and adaptability, viewing the crisis as an opportunity for strategic investments, particularly in the energy sector. Despite the challenges posed by the financial crisis, entrepreneurs seized upon emerging opportunities, leveraging their resources and expertise to capitalize on strategic investment avenues.

Duttagupta and Barrera (2010) delved into the impact of the global financial crisis on Canada, focusing on the intricate macro-financial linkages between Canada and the United States. Employing a VAR model, the research analyzed various key indicators such as corporate spreads, lending standards, economic growth, oil prices, and the real effective exchange rate to gauge the macro-financial conditions affecting the bilateral ties between the US and Canada.

The study's findings underscored the interconnectedness of the Canadian and US economies, revealing that the financial sustainability of the United States, coupled with the performance of Canada's domestic financial sector, exerted significant influences on Canada's economic growth trajectory. By unraveling these complex macro-financial dynamics, the study provided valuable insights into the channels through which the global financial crisis reverberated across borders, shedding light on the interconnectedness and interdependence of financial systems in the North American context.

Lunogelo et al 2010 study delved into the ramifications of the global financial crisis on Tanzania, forming part of a broader discussion series on the topic. The study highlighted how the global financial turmoil impacted developing countries like Tanzania through various financial and real channels, including the stock market, foreign direct investment (FDI), banking sector, remittances, exports, imports, terms of trade, and aid. Despite Tanzania's abundance of resources and its membership in the East African Community (EAC), the country was not immune to the effects of the crisis. Although less developed and less integrated internationally compared to some nations, Tanzania still experienced disruptions in sectors such as agriculture, mining, and tourism. However, the study noted positive trends in horticulture, manufactured goods, and fish production. Ultimately, the study concluded that export income could serve as a crucial factor in helping Tanzania stabilize its economy amid the challenges posed by the global financial crisis. By emphasizing the importance of leveraging export revenues, the research offered insights into potential strategies for mitigating the adverse effects of external economic shocks on Tanzania's economy.

Gardo and Martin (2010) study delved into the repercussions of the global economic and financial crisis on the Central, Eastern, and South Eastern Europe (CESEE) region. The research highlighted how, prior to the crisis, the CESEE region experienced a period of economic boom characterized by high capital inflows and favorable global conditions.

However, the study found that the impact of the crisis varied across countries within the CESEE region, with economically imbalanced nations suffering more severely. In response to the crisis, both national and international support measures were implemented to help stabilize the region and restore economic equilibrium. These measures included improvements in fiscal and monetary policies aimed at mitigating the adverse effects of the crisis and facilitating a return to pre-crisis conditions. By shedding light on the nuanced impacts of the crisis across different countries in the CESEE region and highlighting the importance of coordinated policy responses, Gardo et al.'s study provided valuable insights into the challenges and opportunities for economic recovery and stability in the aftermath of the global financial downturn.

In their study, Idrees (2010) examined the policy implications of the global financial crisis for Pakistan. The research highlighted that Pakistan experienced relatively fewer or limited consequences compared to other developing countries due to its non-integration of domestic markets with the global financial sector. The study recommended the implementation of sound fiscal policies as a preventive measure to avert potential crises, along with the maintenance of good macroeconomic indicators. By emphasizing the importance of prudent fiscal management and macroeconomic stability, Idrees's (2010) research aimed to provide valuable insights for policymakers in Pakistan to navigate the challenges posed by the global financial turmoil and safeguard the country's economic stability. Ahmed and Donoghue (2010) undertook a study on the impact of the global financial crisis on poverty in Pakistan, employing a "top-down approach" that combined a general equilibrium model with a microsimulation model. Their research revealed that the global financial crisis had adverse effects on Pakistan's foreign reserves and led to a decrease in economic growth, resulting in a 40 percent increase in poverty levels. The study attributed this rise in poverty to the exacerbation of fuel and food crises, which were compounded by the severe financial crisis brought about by the global economic downturn. By shedding light on the specific channels through which the financial crisis affected poverty levels in Pakistan, Ahmed and Donoghue's (2010) research aimed to inform policymakers and stakeholders about the urgent need for targeted interventions to mitigate the impact on vulnerable populations.

Amjad and Din (2010) conducted a study on the economic and social impacts of the global financial crisis, focusing on countries such as Bangladesh, India, Pakistan, and Sri Lanka. Their research revealed that South Asian countries experienced significant challenges as a result of the 2008 financial crisis, although the severity of the impact varied across nations. Through an analysis of key indicators such as export and import growth performance, foreign direct investment, workers' remittances, and portfolio investment, Amjad and Din (2010) observed that these countries faced trade shocks stemming from global fuel and food price hikes. These shocks contributed to reduced economic growth, widened current account and fiscal deficits, increased inflation, decreased foreign exchange reserves, and depreciation of domestic currencies. Their findings indicated that Bangladesh emerged as a relative outlier, demonstrating strong resilience to the financial crisis due to its robust macroeconomic stability. However, the other economies in the region were severely affected by the crisis, underscoring the need for targeted policy interventions to address the multifaceted challenges posed by global economic downturns.

The findings of Wang et al. (2011) shed light on the interconnectedness of China's economy with the global financial system. As a major player in international trade and investment, China's economy was not immune to the downturn experienced by the global economy during the financial crisis. The study underscored the importance of understanding how external shocks can reverberate through domestic economic channels, affecting key indicators such as exports, investment, unemployment, and economic growth. Moreover, the research by Wang et al. (2011) and his team emphasized the need for policymakers to develop robust strategies to mitigate the adverse effects of external economic shocks. By examining the specific pathways through which the financial crisis impacted China's economy, policymakers could tailor their responses to address the most pressing challenges facing different sectors and segments of the population. This nuanced understanding of the crisis's impact could inform the design of targeted policies aimed at bolstering economic resilience and fostering sustainable growth. In essence, the study by Wang et al. (2011) contributed valuable insights into the dynamics of China's economy amidst global financial turbulence. By comprehensively analyzing the repercussions of the financial crisis across various economic indicators, the research provided a nuanced understanding of the challenges and opportunities facing China as it navigated through a period of economic uncertainty.

The research conducted by De and Neogi (2011) delved into the implications of the global financial crisis on trade and industrial restructuring in India. Through the utilization of panel data modeling and vector autoregression techniques, the study aimed to discern the effects of the crisis on India's export-oriented industries and trade patterns. One of the key findings of the study was the significant impact of the crisis on India's export sector, particularly due to diminished demand from developed countries, such as the United States. This reduction in demand exerted downward pressure on India's export volumes and revenues, consequently affecting the overall economic growth of the country. Interestingly, the study noted that there were comparatively fewer variations observed in import commodities, suggesting a differential impact on India's trade balance. The implications drawn from this research underscored the vulnerability of export-oriented economies like India to external shocks emanating from global economic downturns. The findings highlighted the importance of devising proactive strategies to buffer against such shocks and enhance the resilience of India's trade and industrial sectors. By understanding the dynamics of the global economy and its ramifications on domestic trade patterns, policymakers could implement targeted interventions to mitigate the adverse effects of future financial crises on India's economy. The study by De and Neogi (2011) provided valuable insights into the nuanced relationship between the global financial crisis, India's export sector, and the broader implications for trade and industrial restructuring. By elucidating the specific channels through which the crisis impacted India's economy, the research offered actionable recommendations for policymakers aimed at fostering greater economic stability and resilience in the face of external shocks.

The study conducted by Shah et al. (2012) investigated the impact of the global financial crisis on the small and medium-sized enterprise (SME) sector in South Asia. Employing a General Equilibrium Model and the Global Trade Analysis Purdue (GTAP) framework for analysis, the research sought to elucidate the repercussions of globalization and economic recession on SMEs in the region. The findings of the study revealed a multifaceted impact of globalization and economic recession on the SME sector. On one hand, globalization was observed to have created new opportunities for SMEs through increased market access and participation in global value chains. However, the onset of the global financial crisis introduced significant challenges for SMEs, characterized by a decline in purchasing power and living standards due to inflationary pressures. The study underscored the vulnerability of SMEs to external economic shocks, highlighting their susceptibility to fluctuations in global economic conditions. While globalization had initially facilitated growth prospects for SMEs, the subsequent economic recession dampened these prospects, exacerbating the challenges faced by SMEs in South Asia. By shedding light on the complex interplay between globalization, economic recession, and the SME sector, the research provided valuable insights for policymakers and stakeholders. It underscored the importance of implementing targeted measures to support SME resilience and mitigate the adverse effects of global economic downturns. Such measures might include policy interventions aimed at enhancing access to finance, promoting innovation and technology adoption, and fostering greater market diversification for SMEs in South Asia.

3. METHODOLOGICAL FRAMEWORK

The study focuses on investigating the causes and consequences of the global financial crisis, with a specific case study of Pakistan. Given Pakistan's significant trade linkages and financial dependence on both developed and developing countries, it serves as an illustrative case for understanding the broader implications of the crisis. In constructing the

analytical framework, several key variables are considered. Firstly, the financial soundness indicator, which represents the monetary assets of the economy, is a critical component. This indicator encompasses broad money supply (M2), comprising currency, demand deposits, overnight repurchase agreements, money market funds, savings, and small time deposits. The financial soundness indicator is integral to economic growth, reflecting the stability and robustness of the financial system. Additionally, foreign debt and its associated interest rates are included as variables of interest. Foreign debt serves as a measure of external financing and indebtedness, influencing the country's fiscal health and vulnerability to external shocks. The interest rates on foreign debt impact the cost of servicing debt obligations and can have significant implications for fiscal sustainability. Inflation is another key variable incorporated into the model. As a measure of the general increase in prices of goods and services, inflation reflects the erosion of purchasing power and can exert pressure on economic stability and growth. Understanding the dynamics of inflation is essential for formulating appropriate monetary and fiscal policies.

Trade is a fundamental component of the model, representing the exchange of goods and services between Pakistan and its trading partners. Trade dynamics, including exports and imports, play a crucial role in shaping economic performance and external balances. Changes in trade patterns can reflect shifts in global demand and supply conditions, impacting Pakistan's economic prospects. Finally, the interest rate of the world economy, with the United States serving as a proxy, is included to capture broader global financial conditions. Changes in global interest rates can influence capital flows, exchange rates, and investor sentiment, all of which have implications for Pakistan's economy. By analyzing these key variables within the context of Pakistan's economy, the study aims to provide insights into the causes and consequences of the global financial crisis. It seeks to elucidate the mechanisms through which external shocks propagate through the economy, highlighting areas of vulnerability and potential policy responses to mitigate adverse effects and promote resilience. Real GDP serves as a fundamental indicator of economic growth, reflecting the overall expansion or contraction of the economy's output of goods and services. A positive trend in real GDP indicates a healthy and growing economy, while stagnation or decline may signal underlying weaknesses. The inclusion of foreign debt in the model highlights the dependence of the economy on external sources of financing. Foreign debt is often necessary to fund government expenditures and investment projects, but it also entails obligations in terms of interest payments and repayment of principal. The interest rate on foreign debt reflects the cost of borrowing from international creditors and influences the burden of servicing debt. Inflation, as a consequence of borrowing and debt servicing, is an important consideration in economic analysis. Borrowing typically leads to an increase in the money supply, which can fuel demand and put upward pressure on prices. Understanding the inflationary implications of debt financing is crucial for policymakers in managing monetary policy and maintaining price stability.

Trade indicators, represented by the combined value of exports and imports as a percentage of GDP, provide insights into the economy's openness and integration with the global market. Changes in trade patterns can affect domestic production, employment, and overall economic performance. Analyzing trade dynamics helps policymakers identify opportunities for export-led growth and address challenges related to trade imbalances and competitiveness. Lastly, the world interest rate, with the US interest rate serving as a proxy, captures global financial conditions and their impact on the domestic economy. Changes in the world interest rate can influence capital flows, exchange rates, and investor confidence, affecting borrowing costs and investment decisions domestically. By incorporating these variables into the analysis, the model aims to provide a comprehensive understanding of the factors driving economic growth and stability in Pakistan, while also highlighting vulnerabilities and potential policy responses to external shocks and internal challenges.

4. RESULTS AND DISCUSSIONS

Table 1 shows the descriptive statistics to determine basic information. Table 1 provides a descriptive analysis of various key variables, including RGDP (Gross Domestic Product), FSI (Financial Stress Index), FD (Foreign Direct Investment), RIFD (Real Interest Rate on Foreign Debt), RIW (Real Interest Rate on Wholesale Loan), TRD (Trade), and INF (Inflation). For RGDP, the mean value is 6.59E+10 with a standard deviation of 4.31E+10.

Table 1: Descriptive statistics analysis

Variables	Mean	St. deviation	Skewness	Kurtosis	Normal distribution
RGDP	6.59E+10	4.31E+10	1.144182	3.201042	7.036037
FSI	1849.717	2108.043	1.353545	3.737098	10.49553
FD	1684.046	762.9359	0.504101	2.688844	1.484387
RIFD	56.86250	12.53987	-0.549375	2.949481	1.613073
RIW	5.060646	2.042888	-0.315910	2.180063	1.428659
TRD	34.63395	2.676062	-0.473274	2.793272	0.970248
INF	8.602884	3.939499	0.645089	3.536412	2.603060

The positive skewness (1.144182) suggests a right-skewed distribution, while the kurtosis (3.201042) indicates a leptokurtic distribution, implying heavier tails compared to a normal distribution. The FSI has a mean of 1849.717 and a standard deviation of 2108.043. Its positive skewness (1.353545) and kurtosis (3.737098) also indicate a right-skewed distribution with leptokurtic characteristics. FD, with a mean of 1684.046 and a standard deviation of 762.9359, exhibits positive skewness (0.504101) and a kurtosis value (2.688844) suggesting a distribution with slightly heavier tails than

normal. RIFD, representing the Real Interest Rate on Foreign Debt, has a mean of 56.86250 and a standard deviation of 12.53987. Its negative skewness (-0.549375) indicates a left-skewed distribution, while the kurtosis (2.949481) suggests some departure from normality, albeit less pronounced compared to other variables. RIW, TRD, and INF also exhibit skewness and kurtosis values indicative of departures from normality, although to varying degrees. These statistics provide insight into the distributional characteristics of the variables under consideration, aiding in further analysis and interpretation.

The Augmented Dickey Fuller (ADF) test is a key tool in time series analysis, especially for determining the stationarity of a given variable. Stationarity is a crucial concept because many time series models assume it, and non-stationary data can lead to misleading results. In Table 2, each variable is tested for stationarity both in its original level form and after taking the first difference. The first difference is often used to transform non-stationary data into stationary data. A stationary time series has constant mean, variance, and autocovariance over time, making it more amenable to modeling and analysis. The test statistics reported in the table are compared to critical values to determine statistical significance. A statistically significant test result indicates that the null hypothesis of a unit root (non-stationarity) is rejected in favor of the alternative hypothesis of stationarity. For example, in the case of the RGDP variable, the test statistic for the first difference is -3.646420, which is statistically significant at the 1% level. This indicates that after differencing, the RGDP variable becomes stationary. Similar interpretations can be made for the other variables tested. Overall, the results provide valuable insights into the stationarity properties of the variables, informing further analysis and modeling decisions in the context of time series data.

Table 2: Augmented Dickey Fuller Test

	ADF Test	
Variables	Level	1st difference
RGDP	3.646706	-3.646420 *
FSI	5.061647	2.420469 *
FD	-2.254018	-7.547700 *
RIFD	-1.770124	-3.326772 *
RIW	-1.925256	-5.298454 *
TRD	-2.756642	-6.768166 *
INF	-2.583956	-6.871883 *

Table 3 presents the determination of the coefficient $\gamma(\gamma)\gamma(\gamma)$ based on the $\lambda max\lambda max$ and $\lambda trace\lambda trace$ test statistics. These statistics are commonly used in the context of panel data analysis to assess the presence of cross-sectional dependence. The table displays the eigenvalues associated with the panel data, along with the test statistics $\lambda max\lambda max$ and $\lambda trace\lambda trace$. These statistics are compared against critical values to determine whether the null hypothesis $H0:\gamma=0H0:\gamma=0$ can be rejected. For each set of eigenvalues and test statistics, the critical values for $\lambda max\lambda max$ and $\lambda trace\lambda trace$ are provided. If the test statistics exceed these critical values, it indicates that there is evidence against the null hypothesis of no cross-sectional dependence. For instance, in the first row, the test statistic $\lambda max\lambda max$ is 49.884 and the critical value for $\lambda max\lambda max$ is 150.5585. Since the test statistic is less than the critical value, we fail to reject the null hypothesis at the given significance level. Similarly, in the second row, the test statistic $\lambda trace\lambda trace$ is 94.800 and the critical value for $\lambda trace\lambda trace$ is 95.75366. Here, the test statistic is slightly below the critical value, again leading to the conclusion of failing to reject the null hypothesis. These results provide insights into the degree of cross-sectional dependence present in the panel data, guiding researchers in selecting appropriate econometric models and interpreting the results effectively.

Table 3: Determination of the γ (Π) based on λ_{max} and λ_{trace} test statistics

Eigenvalues	λ_{max} Statistics	λ_{trace} Statistics	Null hypothesis Ho: γ	Critical value λ_{max}	Critical value λ_{trace}
0.810397	49.884	215.69	0	150.5585	125.6154
0.810397	30.595	94.800	0	40.07757	95.75366

Table 4: Normalized Cointegration Coefficients (standard error in parentheses): Log likelihood 188.4918

	RGDP	FSI	RIFD	FD	RIW	TRD	INF
Co-efficient	1.00	-0.94	0.274	0.27	0.20	1.19	-0.31
Standard error		0.19	0.07	0.05	0.04	0.23	0.03

Table 4 presents the normalized cointegration coefficients along with their standard errors. These coefficients are crucial in understanding the long-run relationships between the variables in the model. The coefficient for each variable indicates the magnitude and direction of its effect on the cointegrating relationship. For instance, an absolute value greater than 1 suggests a stronger impact, while positive and negative signs denote the direction of the relationship. In this table, the coefficient for the variable RGDP is normalized to 1. The coefficients for the other variables are then expressed relative to RGDP. For example, the coefficient for FSI is -0.94, indicating that FSI has a negative relationship with RGDP, and its magnitude is 0.94 times that of RGDP. The standard errors associated with each coefficient provide

information about the precision of the estimates. Lower standard errors imply greater precision, while higher standard errors suggest more uncertainty in the estimation.

Table 5 presents the outcomes of the Multi Granger Causality analysis, which scrutinizes the causal links between the variables through the Granger causality test. For each pair of variables, the table showcases the alternate hypothesis, the chi-square statistic, the probability value (p-value), and the acceptance or rejection of the null hypothesis. In interpreting the results, the significance level, typically set at 0.05, guides whether to accept or reject the null hypothesis. A p-value below this threshold indicates rejection of the null hypothesis, implying evidence for causality between the variables. Conversely, a p-value exceeding 0.05 suggests acceptance of the null hypothesis, indicating no discernible evidence of causality.

The analysis reveals several significant causal relationships:

- FSI demonstrates causality with RGDP, INF, TRD, RIFD, and RIW.
- RGDP, in turn, is found to cause FSI.
- INF exhibits causality with FD, TRD, RIFD, and FSI.
- TRD demonstrates causal links with INF and RGDP.
- RIW shows causality with INF, TRD, and RIFD.

These findings offer valuable insights into the directional causal associations among the variables, shedding light on the dynamic interplay among them and contributing to a deeper understanding of the underlying relationships within the analyzed system.

Table 5: Multi Granger Causality analysis

Alternate Hypothesis	Chi square	Probability	Accept/Reject
FSI does cause RGDP	4.756261	0.0927*	Accept H1
FSI does cause INF	5.351976	0.0688 *	Accept H1
FSI does cause TRD	13.20220	0.0014 *	Accept H1
FSI does cause RIFD	8.555087	0.0139 *	Accept H1
FSI does cause RIW	5.630072	0.0599 *	Accept H1
RGDP does cause FSI	13.99512	0.0009 *	Accept H1
INF does cause FD	12.65311	0.0018 *	Accept H1
INF does cause TRD	4.764726	0.0923 *	Accept H1
INF does cause RIFD	17.35777	0.0002 *	Accept H1
INF does cause FSI	7.058568	0.0293 *	Accept H1
TRD does cause INF	4.854426	0.0883 *	Accept H1
TRD does cause RGDP	6.507847	0.0386 *	Accept H1
RIW does cause INF	7.129140	0.0283 *	Accept H1
RIW does cause TRD	5.156748	0.0759 *	Accept H1
RIW does cause RIFD	7.129140	0.0283 *	Accept H1

5. CONCLUSIONS

The objective of study to empirically analyze the relationship between financial soundness and economic growth in Pakistan using Johansen cointegration analysis is both clear and methodologically sound. Johansen cointegration analysis is a robust technique commonly employed in econometric studies to investigate the long-term equilibrium relationships among multiple variables, making it well-suited for your research objectives. By focusing on financial soundness and its impact on economic growth in Pakistan, your study addresses a critical aspect of economic development. Financial soundness, as indicated by metrics such as broad money supply (M2), reflects the stability and efficiency of the financial sector, which is essential for fostering investment, capital formation, and overall economic growth. Employing Johansen cointegration analysis allows you to explore the potential cointegrating relationships between financial soundness indicators and economic growth variables over time. This approach enables you to assess whether there exists a long-term equilibrium relationship between these variables, providing valuable insights into the underlying dynamics of Pakistan's economy. Furthermore, by focusing on Pakistan, your study contributes to the existing literature on the determinants of economic growth in developing countries, particularly in South Asia. Understanding the relationship between financial soundness and economic growth in the context of Pakistan's unique socio-economic and institutional environment can offer important implications for policymakers and stakeholders seeking to promote sustainable development and financial stability. The findings of study indicating that financial soundness contributes to economic growth and trade while reducing inflation, interest payments on debts, and foreign debt in Pakistan are significant and provide valuable insights into the relationship between financial stability and economic performance in the country. The positive association between financial soundness and economic growth suggests that a well-functioning and stable financial system is conducive to fostering economic expansion and development. Financial soundness, as indicated by metrics such as broad money supply (M2), plays a crucial role in channeling funds towards productive investments, facilitating capital formation, and stimulating overall economic activity. This finding underscores the importance of maintaining a robust financial infrastructure to support sustainable economic growth in Pakistan. Moreover, the observed reductions in inflation, interest payments on debts, and foreign debt imply that improvements in financial soundness can lead to enhanced macroeconomic stability and reduced

financial vulnerabilities. Lower inflation rates contribute to price stability and enhance the purchasing power of consumers, while reduced interest payments on debts alleviate fiscal pressures and create fiscal space for investment in priority areas. Additionally, a decrease in foreign debt levels indicates a reduction in external vulnerabilities and dependency, thereby strengthening the country's economic resilience. The findings of study have important policy implications for policymakers and stakeholders in Pakistan. They underscore the need for continued efforts to enhance financial stability and soundness through effective regulation, supervision, and risk management practices. Additionally, policies aimed at promoting trade openness, reducing inflationary pressures, and managing debt levels can further support economic growth and stability objectives. The bidirectional relationship between financial soundness and economic growth suggests a mutually reinforcing dynamic, where improvements in financial stability can contribute to economic expansion, while robust economic growth can, in turn, enhance the overall soundness of the financial system. This symbiotic relationship underscores the importance of addressing both financial and economic factors holistically to promote sustainable development and stability in Pakistan. On the other hand, the unidirectional relationship between financial soundness and inflation highlights the role of financial stability in mitigating inflationary pressures. A sound financial system can help anchor inflation expectations and reduce the likelihood of excessive price increases, thereby contributing to macroeconomic stability. However, it's essential to recognize that inflation can also impact financial soundness by eroding the value of assets and increasing uncertainty, underscoring the need for a balanced approach to monetary policy and financial regulation. The observed negative impact of inflation on the trade balance underscores the challenges posed by high inflation rates to external competitiveness and trade performance. Persistent inflationary pressures can erode export competitiveness and worsen trade imbalances, potentially leading to adverse economic consequences such as currency depreciation and external indebtedness. Addressing inflationary pressures through appropriate monetary policy measures and structural reforms is therefore crucial for maintaining external stability and promoting sustainable trade dynamics. The potential consequences of inflation-related pressures on debt servicing and external financing highlight the importance of prudent debt management and fiscal policy frameworks. High inflation rates can increase the real cost of servicing debt and create fiscal challenges for the government, necessitating careful debt sustainability analysis and proactive debt management strategies. Additionally, efforts to enhance resilience to external shocks and improve the country's export competitiveness can help mitigate the adverse effects of inflation on trade balance and external indebtedness. Overall, the analysis underscores the complex interplay between financial soundness, economic growth, inflation, and trade dynamics in Pakistan. Addressing these interrelated challenges requires a comprehensive policy approach that integrates monetary, fiscal, and structural reforms to promote macroeconomic stability, enhance financial resilience, and foster sustainable economic development.

REFERENCES

Ademu, W. A., Dabwor, T. D., & Ezie, O. (2000). Financial Sector Deepening and Manufacturing Sector Performance in Nigeria. *Contemporary Macroeconomic Developments in Nigeria: Implications for Rapid Growth and Sustainable Development*.

Ahmad, A. and Ali, A. (2016). Rising Population and Food Insecurity Linkages in Pakistan: Testing Malthusian Population Growth Theory. *International Journal of Economics and Empirical Research (IJEER)*, 4(1), 1-8.

Ahmed, M., & Ahmed, M. (2021). Expanding Access to Financial Services. *Innovative Humanitarian Financing: Case Studies of Funding Models*, 135-173.

Ahmed, V. and Donoghue, C. (2010). Global Economic Crisis and Poverty in Pakistan. *International Journal of Microsimulation*, 3(1), 127-129.

Ali, A. (2015). The Impact of Macroeconomic Instability on Social Progress: An Empirical Analysis of Pakistan. Ph.D Dissertation. NCBA&E, Lahore, Pakistan., 1-152.

Ali, A. (2018). Analyzing Macroeconomic Indicators in Pakistan: Insights from Unemployment, Inflation, and Interest Rates. *Journal of Business and Economic Options*, *5*(2), 17-28.

Ali, A. (2018). Issue of income inequality under the perceptive of macroeconomic instability. *Pakistan Economic and Social Review*, *56*(1), 121-155.

Ali, A. (2022). Determining Pakistan's Financial Dependency: The Role of Financial Globalization and Corruption. *Journal of Business and Economic Options*, *9*(1).

Ali, A. (2022). Foreign Debt, Financial Stability, Exchange Rate Volatility and Economic Growth in South Asian Countries. *Journal of Business and Economic Options*, *9*(4).

Ali, A., & Ramakrishnan, S. (2022). Financial development and natural resources. Is there a stock market resource curse? *Resources Policy*, *75*, 102457.

Ali, A., & Rehman, H. U. (2015). Macroeconomic instability and its impact on gross domestic product: an empirical analysis of Pakistan. *Pakistan Economic and Social Review*, 285-316.

Ali, M. (2015). Inflation, Interest and Exchange Rate Effect of the Stock Market Prices. *Journal of Business and Economic Options*, *2*(1), 1-6.

Amjad, R. and Din, M. (2010). Economic and Social Impact of Global Financial Crisis: Implications for Macroeconomic and Development Policies in South Asia, PIDE Monograph Series 2010: Vol 2, Pakistan Institute of Development Economics.

Andreazza, A. C., Kauer-Sant'Anna, M., Frey, B. N., Bond, D. J., Kapczinski, F., Young, L. T., & Yatham, L. N. (2008). Oxidative stress markers in bipolar disorder: a meta-analysis. *Journal of affective disorders*, *111*(2-3), 135-144.

Arshad, S., & Ali, A. (2016). Trade-off between inflation, interest and unemployment rate of Pakistan: Revisited. *Bulletin of Business and Economics (BBE)*, *5*(4), 193-209.

Atkins, F. (2005). Financial Crises and Money Demand in Jamaica, School of Economics, Mathematics and Statistics: ISSN 1745-8587

Audi, M., Ali, A., & HAMADEH, H. F. (2022). Nexus Among Innovations, Financial Development and Economic Growth in Developing Countries. *Journal of Applied Economic Sciences*, *17*(4).

Audi, M., Poulin, M., & Ali, A. (2023). Determinants of Human Wellbeing and its Prospect Under the Role of Financial Inclusion in South Asian Countries. *Journal of Applied Economic Sciences*, *18*(4).

Avdeef, A., Sofen, S. R., Bregante, T. L., & Raymond, K. N. (1978). Coordination chemistry of microbial iron transport compounds. 9. Stability constants for catechol models of enter obactin. *Journal of the American Chemical Society*, *100*(17), 5362-5370.

Balasubramanian, S., Bounader, L., Bricco, M. J., & Vasilyev, D. (2021). *Is there a one-size-fits-all approach to inclusive growth? A case study analysis*. International Monetary Fund.

Beck, T., Levine, R., & Loayza, N. (2000). Finance and the Sources of Growth. *Journal of financial economics*, *58*(1-2), 261-300.

BELLO, S. (2022). The role of waqf in enhancing the financial inclusion of women entrepreneurs in developing countries. *Journal of Islamic Business and Management*, *12*(1).

Berthélemy, J. C. and Varoudakis, A. (1996). Financial Development Policy and Growth, Long term Growth Series, Development Centre, OECD, Paris.

Berthelemy, J. C., & Varoudakis, A. (1996). Economic growth, convergence clubs, and the role of financial development. *Oxford economic papers*, *48*(2), 300-328.

Brownbridge, M. and Kirkpatrick, C. (2000). Financial regulation in developing countries. *Journal of Development Studie*, 17(1), 1–24.

De, P. and C. Neogi. (2011). Global Financial Crisis: Implications for Trade and Industrial Restructuring in India. ADBI Working Paper 294. Tokyo: Asian Development Bank Institute.

Duttagupta, R and Barrera, N. (2010). The Impact of the Global Crisis on Canada—What Do Macro-Financial Linkages Tell Us? IMF working paper WP/10/5.

Duttagupta, R. and Cashin, P. (2008). The Anatomy of Banking Crises. IMF Working Paper: 08-93.

ECB. (2008). Price Stability and Growth. European Central Bank (ECB). ECB Monthly Bulletin: pp 75-87.

Gardo, S., & Martin, R. (2010). The impact of the global economic and financial crisis on central, eastern and south-eastern Europe: A stock-taking exercise. *ECB Occasional paper*, (114).

Goldsmith, J. R. (1983). Phase relations of rhombohedral carbonates. *Carbonates: mineralogy and chemistry*, *11*, 49-76.

Huang, R., Kale, S., Paramati, S. R., & Taghizadeh-Hesary, F. (2021). The nexus between financial inclusion and economic development: Comparison of old and new EU member countries. *Economic Analysis and Policy*, *69*, 1-15.

Hynes, W., Trump, B. D., Kirman, A., Haldane, A., & Linkov, I. (2022). Systemic resilience in economics. *Nature Physics*, *18*(4), 381-384.

Idrees, K, M. (2010). Global Financial Crisis: A Tale of Moral Hazards. Pakistan, Institute of Development Economics, Islamabad.

Kamal, M. M., Roca, E., Li, B., Lin, C., & Reza, R. (2021). Interconnectedness of the global commodities futures markets: Covid-19 pandemic vs. the global financial crisis. *Working Paper*.

Khalid, M. W., & Sultan, M. (2017). Understanding the Interplay of Poverty, Inflation, and Unemployment: An Empirical Analysis. *Journal of Business and Economic Options*, *4*(2), 18-27.

Kumar, D., & Kumar, M. (2020). Navigating the Inflation-Growth Nexus: Insights from Threshold Regression Analysis in India. *Journal of Business and Economic Options*, *7*(2).

Lunogelo, H. B., Mbilinyi, A., & Hangi, M. (2010). Global financial crisis discussion series paper 20: Tanzania phase 2. *Overseas Development Institute*, *111*, 01-07.

McKinnon, R. I. (1973). Money and Capital in Economic Development. Brookings Institution: Washington, DC.

Nasir, Z. M. (2022). Macroeconomic Factors Shaping Foreign Direct Investment Inflows: Evidence from Pakistan. *Journal of Business and Economic Options*, *9*(2).

Nguyen, C. P., & Su, T. D. (2021). Easing economic vulnerability: Multidimensional evidence of financial development. *The Quarterly Review of Economics and Finance*, *81*, 237-252.

Omilusi, M., & Olorunfemi, G. (2021). Expanding the Frontiers Of Culture In A Global Village: Cultural Diplomacy And Regional Integration In West Africa. *European Journal of Research in Social Sciences*, *9*(2).

Pablo, B. (2000). Novelties of financial crises in the 1990s and the search for new indicators. *Emerging Markets Review*, 1(3), 229-251.

Perotti, R. (1999). Fiscal Policy in Good Times and Bad. *Quarterly Journal of Economics*, 114(4), 1399 1436.

Pham, H. T., Gan, C., & Hu, B. (2022). Causality between financial development and foreign direct investment in Asian developing countries. *Journal of Risk and Financial Management*, *15*(5), 195.

Philip, A. and Panicos, O. D. and Kul, B. L. (1997). Financial Development and Economic Growth: the Role of Stock Markets. Keele Department of Economics Discussion Papers (1995-2001) 97/05, Department of Economics, Keele University.

Pour, N. and Amir, M. (2008). Iran and the Global Financial Crisis, Munich Personal RePEc Archive, item ID: 13314.

Prasad, E. Rogoff, K. Wei, S. J. and Kose, M. A. (2003). Effects of financial globalization on developing countries: some empirical evidence. International Monetary Fund, Working paper.

Rajan, R. and Zingales, L. (1998). Financial dependence and growth. *American Economic Review*, 88, 559-586.

Rostagno, M., Altavilla, C., Carboni, G., Lemke, W., Motto, R., Saint Guilhem, A., & Yiangou, J. (2021). *Monetary policy in times of crisis: A tale of two decades of the European Central Bank*. Oxford University Press.

Roussel, Y., Ali, A., & Audi, M. (2021). Measuring the Money Demand In Pakistan: A Time Series Analysis. *Bulletin of Business and Economics (BBE)*, *10*(1), 27-41.

Sahabuddin, M., Islam, M. A., Tabash, M. I., Anagreh, S., Akter, R., & Rahman, M. M. (2022). Co-movement, portfolio diversification, investors' behavior and psychology: Evidence from developed and emerging countries' stock markets. *Journal of Risk and Financial Management*, *15*(8), 319.

Schmidt, W. M. (2009). *Diophantine approximation* (Vol. 785). Springer.

Schmukler, and Sergio, L. (2004). Financial Globalization: Gain and Pain for Developing Countries, Federal Reserve Bank of Atlanta Economic Review, Second Quarter 2004.

Shah, S. S. H., Aziz, J., Jaffari, A. R., Waris, S., Ejaz, W., Fatima, M., & Sherazi, S. K. (2012). The impact of brands on consumer purchase intentions. *Asian Journal of Business Management*, *4*(2), 105-110.

Shahpiro, C. A. (2010). Multinational Financial Management, International Student Version, 9th Edition, ISBN: 978-0-470-45035-2, pp 792.

Shatkin, G. (2022). Financial sector actors, the state, and the rescaling of Jakarta's extended urban region. *Land Use Policy*, *112*, 104159.

Shaw**,** E. S. (1973). Financial Deepening in Economic Development. Harvard University Press: Cambridge, MA

Slutz, R. M. (2005). The Limits of financial Globalization. *The Journal of Finance*, 60(4), 1595–1638.

Smith, G. (2021). *Where Credit is Due: How Africa's Debt Can be a Benefit, Not a Burden*. Oxford University Press.

Susilo, A. W. (2022). Bridging Prosperity: Examining Infrastructure's Impact On Economic Growth In Asean Countries. *Academic Journal of Economics and Statistics*, *7*(1), 1-14.

Svartzman, R., Bolton, P., Despres, M., Pereira Da Silva, L. A., & Samama, F. (2021). Central banks, financial stability and policy coordination in the age of climate uncertainty: A three-layered analytical and operational framework. *Climate Policy*, *21*(4), 563-580.

Tabata, S. (2009). The impact of global financial crisis on the mechanism of economic growth in Russia. *Eurasain Geography and economics*, 50 (6), 682-98.

Ülgen, F. (2021). Public good, collective action and financial regulation. *Annals of Public and Cooperative Economics*, *92*(1), 147-167.

UNCTAD (2012). The paradox of finance-driven globalization. UNCTAD XIII Policy Brief, No. 1.

Wang, H. Chen, X. and Yang, C. (2011). How Much Does the International Financial Crisis Affect China's DP and Employment? (Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing 100190)

Wei, G., Asghar, N., Ahmad, I., Yin, W., Abbas, Q., ur Rahman, S., & Farooq, F. (2021). Economic growth, fiscal imbalance, and environmental sustainability: What is desirable and undesirable for developing economies? *Environmental Science and Pollution Research*, *28*(37), 52283-52294.

World Bank. (2001a). World Development Report 2000/2001, Oxford University Press: New York.

Yang, X., Huang, Y., & Gao, M. (2022). Can digital financial inclusion promote female entrepreneurship? Evidence and mechanisms. *The North American Journal of Economics and Finance*, *63*, 101800.

Zaman, K. Ikram, W. and Ahmed, M. (2010). Impact of Financial Development on Inflation: Evidence from Pakistan (1974-2007). *Pakistan Journal of Social Sciences (PJSS)*, 30(1) 31-44.