

EXAMINING THE IMPACT OF INTERNATIONAL TRADE ON PAKISTAN'S ECONOMIC GROWTH: A VECTOR ERROR CORRECTION MODEL (VECM) ANALYSIS

A Thesis

**Submitted to the Master's Study Program of Economics at the Faculty
of Economics and Business in partial fulfillment of the requirements
for the degree of**

Master of Arts (M.A.)



by:

Wasif Mehdi

03212320020

UNIVERSITAS ISLAM INTERNASIONAL INDONESIA

DEPOK

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ABSTRACT

Wasif Mehdi

03212320020

wasif.mehdi@uiii.ac.id

Master of Art (MA) in Economics

Universitas Islam Internasional Indonesia

The study examines the dynamic and long-term impact of international trade on Pakistan's economic growth from 1985 to 2023, using a time-series econometric approach. Based on macroeconomic theory, the study uses specific methods to see how trade openness, foreign direct investment (FDI), and inflation affect GDP over time. Annual data for GDP growth, trade (as a percentage of GDP), FDI inflows, and inflation were collected from the World Bank Indicators. The Augmented Dickey-Fuller (ADF) test confirmed that the data is stable, and the Johansen cointegration method revealed four important long-term relationships between the variables. While the long-run results indicate that trade has a negligible effect on GDP, foreign direct investment (FDI) shows a slightly positive impact, and inflation appears to have a weak positive correlation; however, none of these effects are statistically significant at the 5% level. However, short-run dynamics reveal a meaningful adjustment mechanism, with GDP professing a strong tendency to turn back to its long-term path following short-term fluctuations. Descriptive statistics affirm high volatility in FDI, moderate trade activity, and relatively stable inflation trends. Diagnostic tests, including stability, serial correlation, and heteroscedasticity, confirm the robustness of the findings. The findings offer empirical insights into the trade-growth nexus in Pakistan, which points to the importance of policy reforms focused on export diversification, quality investment attraction, ensuring inflation control, and implementing institutional reforms. These insights are particularly relevant for researchers, economists, and policymakers working on macroeconomic planning within emerging economies.

Keywords: International trade, economic growth, foreign direct investment, inflation, macroeconomic stability

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ABBREVIATION DIRECTORY

ADB	: <i>Asian Development Bank</i>
ADF	: <i>Augmented Dickey-Fuller (Test)</i>
ASEAN	: <i>Association of Southeast Asian Nations</i>
BRI	: <i>Belt and Road Initiative</i>
CPEC	: <i>China-Pakistan Economic Corridor</i>
CPI	: <i>Consumer Price Index</i>
ECO	: <i>Economic Cooperation Organization</i>
ECT	: <i>Error Correction Term</i>
EU	: <i>European Union</i>
FDI	: <i>Foreign Direct Investment</i>
FTA	: <i>Free Trade Agreement</i>
FY	: <i>Fiscal Year</i>
GATT	: <i>General Agreement on Trade and Tariffs</i>
GDP	: <i>Gross Domestic Product</i>
IDB	: <i>Islamic Development Bank</i>
IMF	: <i>International Monetary Fund</i>
MNCs	: <i>Multinational Corporations</i>
NAFTA	: <i>North American Free Trade Agreement</i>
NTT	: <i>New Trade Theory</i>
OECD	: <i>Organisation for Economic Co-operation and Development</i>
PTA	: <i>Preferential Trade Agreement</i>
R&D	: <i>Research and Development</i>
SAARC	: <i>South Asian Association for Regional Cooperation</i>
SAFTA	: <i>South Asian Free Trade Agreement</i>
SDGs	: <i>Sustainable Development Goals</i>
SMEs	: <i>Small and Medium-sized Enterprises</i>
UNCTAD	: <i>United Nations Conference on Trade and Development</i>
VAR	: <i>Vector Autoregressive Model</i>
VECM	: <i>Vector Error Correction Model</i>
WDI	: <i>World Development Indicators</i>
WTO	: <i>World Trade Organization</i>
ECM	: <i>Error Correction Model</i>

Eviews	: <i>Econometric Views (Software)</i>
ARDL	: <i>Autoregressive Distributed lag models</i>
VAR	: <i>Vector Autoregressive models</i>
Df	: <i>degree of freedom</i>
PBS	: <i>Pakistan Bureau of Statistics</i>

CHAPTER I

INTRODUCTION

1.1 Background

International trade is essential for global economic growth, especially for developing countries, because it connects with markets quickly, increases productive opportunities, and enhances technological development. International trade transfers services or products from one individual or nation to another, often in exchange for money. This process includes imports and exports of goods and services, exchange rates across nations, etc. International trade has become essential for every country worldwide, including developing and developed nations. The impact of trade improvements in developing countries over the last few decades focuses on challenges such as high tariffs and incomplete infrastructure (Kavoussi, 1985). Global trade plays a vital role in helping developing countries to boost their economies. It ties nations together through globalization and adopts new technologies. In developing countries like Pakistan, trade has the potential to reduce poverty, create jobs, and attract more foreign investments. In the last few years, Pakistan has opened up its trade policies, focusing on exporting textiles and agricultural goods, which are known as the backbone of its economy. However, despite these efforts, Pakistan continues to face significant challenges, including limited policies, excessive reliance on low-valued exports, inadequate infrastructure, and regional disparities that prevent Pakistan from fully benefiting from global trade.

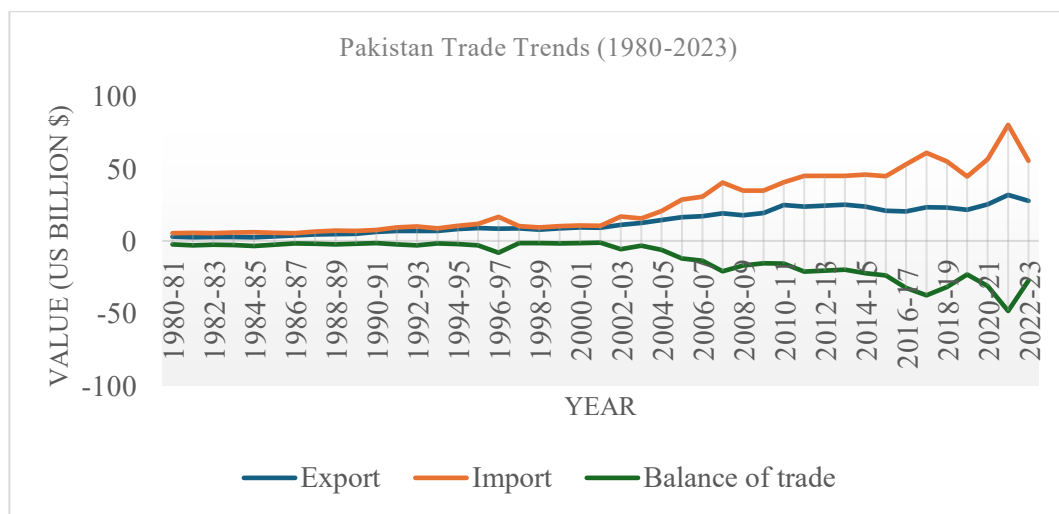


Figure 1.1 Pakistan Trade Trends (1980-2023)

Source: Pakistan Bureau of Statistics (2023)

Figure 1.1 shows Pakistan's trade from 1980 to 2022 onwards. The imports have increased more than the exports, creating a big trade gap. The downward line shows the trade. Despite the potential benefits of international trade, Pakistan attempts to fully take advantage of its trade opportunities due to an over-reliance on low-value exports, such as agricultural and textile products. This is an insufficiency of export heterogeneity, which does not allow the nation to climb up the value chain, thereby leaving it vulnerable to the changes of the global prices and decreasing the economic stability of a country (Afzal et al., 2019). Furthermore, Pakistan's faith in machinery, industrial inputs, and fuel imports worsens its trade imbalance, making it challenging to foster high-value, innovative industries (Cipollina & Demaria, 2020). To increase sustainable economic growth, Pakistan must shift its focus from low-value exports to developing industries capable of producing higher-value goods, fixing infrastructure, and creating a favorable environment for foreign direct investment (FDI) in the leading sectors.

In Pakistan, trade openness has been associated with higher exports and economic development, particularly in the export sector. However, not everyone in Pakistan uniformly experiences the anticipated benefits of trade openness (Din et al., 2003). Trade has been a critical factor in rapid industrialization and economic growth in Asia, particularly in countries like China and India. These two nations use trade liberalization to boost their capabilities, increase technological innovation, and integrate with global supply chains. For instance, China's export policies have enabled it to promote and export its electronics and machinery. In contrast, India's primary focus on services and software exports has resulted in the creation of millions of jobs, positioning India as a global technology hub. (Hsieh, 2016) The European Union (EU) has trade relations across Africa and Asia that indicate the power of regional and international trade agreements. Lower tariffs and open-market policies have enhanced trade relations and opportunities with the EU while boosting economic growth in partner countries. The European Union's strong relations with Africa and Asia's rising influence in African trade all indicate the changing dynamics of global commerce (Nowak, 2017).

The trade imbalance poses significant challenges for Pakistan, which is struggling hard with large trade deficits because it depends on imports and is unable to produce any high-value goods. Without developing domestic industries, these issues will persist. To address this, countries like Pakistan have to focus on expanding the industries that promote more and more competition and high-value products. Geopolitical events such as the US-China trade war and ineffective domestic policies further give rise to trade challenges. Insufficient procedures, like those in India, increase costs and decrease competitiveness

(Chandra, 2016). For countries like Pakistan, trade acts like a bridge to global markets.

The overall export performance of Pakistan has shown variations recently, with a rapid increase in sectors like cash crops, textiles, and agriculture, while also facing institutional challenges. Many of the previous studies recommend that exports have a vital role in driving economic growth, with a long-term interaction between export expansion and GDP growth (D. F. Bashir et al., 2015). A study proved that between 2015 and 2018, Pakistan's exports decreased too much because of the changes in real exchange rates, while consecutive devaluations had a limited impact in reversing this trend (Pirzada, 2019). Similarly, another study shows that currency appreciation negatively affects trade levels, further tying export potential (S. Ahmad et al., 2021). Pakistan's export distribution is another challenge, as agricultural exports, which form a significant share, have not significantly contributed to GDP growth due to tight international competition and reliance on raw exports (Mahmood & Munir, 2018). The impact of COVID-19 played an essential role in Pakistan's export trends, resulting in a significant decline in trade due to supply chain interruptions. However, government mediations, such as tax waivers and reduced utility costs, helped encourage exports, particularly in the leather and textile sectors. Despite these efforts, Pakistan is still facing trade imbalance and limited diversification in export markets, showing a need for reforms, better trade policies, and investment in high-value exports to achieve long-term growth (A. H. Siddiqui, 2018, p. 1).

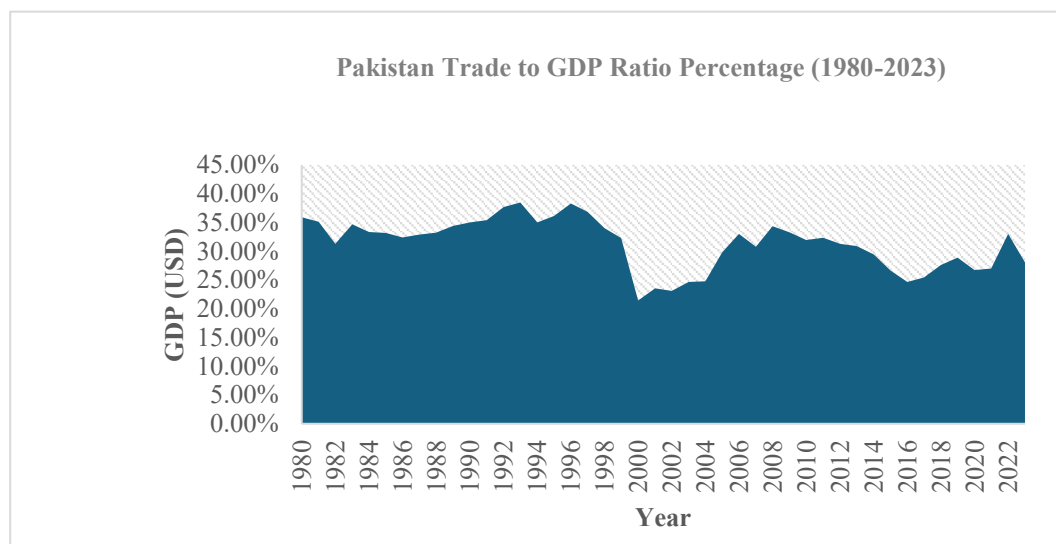


Figure 1.2 Pakistan's GDP and Trade Trends (1985-2023)

Source: Macrotrends Global Metrics (2023)

The trade-to-GDP ratio in Pakistan showed a balance fluctuation from 1980 to the mid-1990s, followed by a sharp dip around 1998 and recovery in the 2000s, but overall declined steadily after 2011, with a bit of recoil around 2022. This shows growing trade instability and reduced trade integration in recent years, as shown in Figure 1.2. Expanding trade helps increase total earnings and attract more foreign investment, both of which are necessary for economic growth. However, the benefits come with challenges like increased prices and more inequality. Previous studies have demonstrated that exports and foreign direct investments positively influence Pakistan's growth, which suggests that an export-led approach can be fruitful for the country (Bhatti, 2015). Therefore, many of Pakistan's exports, consisting of primary products with low value, face limitations. These barriers stop the country's progress toward advancement and the latest technological industries, which have the potential for long-term growth and innovation (Afzal et al., 2019). Pakistan's economic development depends on trade agreements, which help lower trade barriers and provide access to international markets. The Free Trade Agreement (FTA) with China has been very prominent. Regional agreements under SAARC (South Asian Association for Regional Cooperation) and ECO (Economic Cooperation Organization) provide many opportunities but remain underutilized due to political imbalances and a lack of proper practice. By developing infrastructure and knowing the trade partner's needs, Pakistan can better take advantage of these agreements for constant economic growth (Rahamdil et al., 2021). Trade connections with neighbors, especially China, are vital for the maintenance and growth of the economy. Development initiatives like the China-Pakistan Economic Corridor (CPEC) improve Pakistan's infrastructure and strengthen its regional connections. However, we notice that trade activities with India and Afghanistan remain minimal due to political instability and policy mismatches. Improving these relationships could potentially lead to more economic progress and opportunities for Pakistan (Asif et al., 2019). Pakistan heavily relies too much on imports such as industrial inputs, machinery, fuel, and other necessary food items. The country's ability to generate foreign exchange earnings is minimal, and the supply of workers has also diminished over time. International trade shows that only friendly, supportive, and inclusive policies can help Pakistan achieve its full economic potential. Creating solid regional partnerships, enhancing product diversification, and ensuring equitable distribution of resources and benefits are vital for adopting a balanced economic model (Ghaffar et al., 2019).

The China-Pakistan Economic Corridor (CPEC) is a collection of infrastructure projects that have been under construction throughout Pakistan since 2013. This project modernizes Pakistani infrastructure and strengthens its economy with modern

transportation networks, energy projects, and special economic zones (Dadwal & Purushothaman, 2017). Early trade paths, like the Silk Road and sea routes across the Indian Ocean, made it easier for different cultures to share goods, ideas, and ways of life. These networks were essential for economic exchange because they let people get resources and goods that were not available in their areas. For example, the Silk Road linked China to the Mediterranean, which made it possible to sell goods like silk, spices, and other things (Mark Cartwright, 2019). After World War II, many organizations were established to encourage countries to work together on their economies. The General Agreement on Trade and Tariffs (GATT) was formed in 1947, and it tried to lower taxes and other things that made it hard for people to trade. In 1995, the World Trade Organization (WTO) was established. (Maurice Allais et al., 2024) The WTO tried to provide more services and opportunities, and regional trade deals, such as the North American Free Trade Agreement (NAFTA), were also made to make it easier for countries to trade with each other (Matthew Johnston, 2021).

As a developing country, Pakistan has recently made significant efforts to enhance foreign trade by improving the lives of its citizens and fostering economic growth. However, challenges persist. International organizations rank Pakistan low in terms of trade facilitation. To address these issues, Pakistan must ensure border management, introduce policies for monitoring and checking, and improve diplomatic relations with neighboring countries. With these, illicit trade may be prevented, and the economy will eventually gain (Zhongxiu & Shahzad, 2020). High institutions are important attractive features to foreign direct investment (FDI). Investors are faced with safer environments in countries that have political stability, low levels of corruption, and a proper legal system. Good governance has increased confidence among investors and decreased risks and business costs. In contrast, corruption and weak institutions discourage investment and often lead to short-term or low-quality projects. Studies have also shown that stable institutions not only increase the amount of FDI but also improve its long-term impact. Overall, improving governance can help countries attract more reliable and productive foreign investment (Lopez-Calix & Touqeer, 2013). Reports suggest that while GDP growth has shown an upward trend, trade imbalances and fiscal deficits have worsened. Education quality, infrastructure, and foreign direct investment (FDI) directly affect economic growth (Sohail et al., 2023). Macroeconomic stability remains a concern. Major trade partners include the United Arab Emirates and China. Foreign direct investment (FDI) increased, particularly in the manufacturing and services sectors, contributing to job creation in technology and infrastructure.

1.2 Problem Statement

Trade is an essential factor in Pakistan's economic growth, yet it still attempts to benefit fully from it. Despite efforts to increase exports and integrate Pakistan into global markets, structural weaknesses hold it back. Pakistan depends too much on low-value goods like textiles and agricultural products, limiting its ability to compete globally and innovate. Poor trade policies, weak industrial development, and economic uncertainties create barriers to progress. Studies suggest that trade openness positively impacts economic growth, but only under the condition of being supported by substantial investment and well-managed policies (Purnama & Yao, 2019). Without a shift toward high-value exports and better trade strategies, Pakistan is at risk of slow economic growth and endless trade imbalances.

Foreign Direct Investment (FDI) plays a central role in shaping how trade influences economic growth. High inflation lessens purchasing power, increases the cost of production, and decreases investment, resulting in more hurdles for businesses to grow, particularly in developing countries, as it disrupts financial stability (Yang & Shafiq, 2020). On the other hand, foreign direct investment can be beneficial by bringing new technology, creating jobs, and upgrading industries. Still, the country faces many challenges in attracting smooth foreign direct investment due to weak policies, political concerns, and regulatory barriers. Focusing on these issues is essential to ensuring that trade, inflation, and foreign direct investment work together to strengthen the economy.

To achieve long-term goals and growth, Pakistan needs to enhance its trade policies, focus on high-value exports, and establish a better environment for investors. Keeping inflation below the level and strengthening foreign direct investment can help Pakistan's economy grow faster. Studies reveal that trade and foreign direct investment work better when governments provide supportive policies and better infrastructure to attract more and more investments (Umer & Alam, 2013). The government should enhance trade agreements with countries, regions, and global markets, develop industrial policies, and invest increasingly in infrastructure to make it easier for businesses to succeed. By addressing these challenges, Pakistan can build a reliable and competitive economy that benefits all sectors, ranging from small businesses to major industries.

1.3 Research Questions

Based on the problems stated above, the following research questions arise;

1. How does international trade impact Pakistan's GDP growth in the long run?

2. What roles do inflation and foreign direct investment (FDI) play in balancing the link between trade and economic growth in Pakistan?
3. What trade policies can Pakistan follow to expand the positive impact of trade on GDP while reducing inflationary pressures?
4. How can Pakistan attract higher foreign direct investment (FDI) to raise the benefits of trade for sustainable economic growth?

1.4 Research Objectives

1. Analyze the impact of international trade on Pakistan's GDP growth.
2. Examine the role of inflation and foreign direct investment (FDI) in shaping trade's effect on economic growth.
3. To propose policies to increase GDP growth while regulating inflation.
4. To identify more strategies to attract more foreign direct investment (FDI) for continuous economic growth.

The primary goal of this study is to determine how international trade influences Pakistan's economic growth. It also examines how inflation and foreign direct investment (FDI) influence this connection. The research also intends to propose clear strategies to assist the economy expand while keeping inflation under control, as well as to identify methods to attract more FDI for consistent and long-term growth.

1.5 Research Hypothesis

1. H1: International trade has a positive impact on Pakistan's GDP growth.
2. H2: Inflation has an adverse effect on economic growth, potentially offsetting some benefits of trade.
3. H3: Foreign Direct Investment (FDI) contributes positively to GDP growth, potentially strengthening the beneficial impact of trade.
4. H4: Efficient trade policies coupled with export diversification and investment-friendly reforms strengthen the positive impact of trade on economic growth.

1.6 Significance of the Research

Every research is expected to be helpful for all parties who read it or are directly involved. The significances of this research are;

1. This study benefits policymakers by improving trade strategies and policies to increase exports, minimize dependency on low-value goods, and make Pakistan more competitive in the global markets.
2. It features how inflation affects trade and how inviting more foreign direct investment (FDI) can help Pakistan's economic growth.

3. This research shows why Pakistan should pay attention to high-value industries instead of only textiles and agriculture.
4. The research focuses on how trade, inflation, and foreign direct investment (FDI) work together in Pakistan. It offers fresh data using time series analysis to help researchers and policymakers make improved and better economic decisions.

This study is beneficial since it helps policymakers develop trade policies better, rely less on low-value exports, and make Pakistan more competitive throughout the world. It talks about how inflation and foreign direct investment (FDI) affect economic growth and why Pakistan should put more money into sectors that are worth a lot. The study uses time series data to come to useful findings that help both researchers and decision-makers develop better economic plans.

1.7 Research Outline

In order to effectively achieve the set goals and develop solutions to the research problem, the thesis is organized as follows:

Chapter 1: Introduction: This chapter introduces the study, explaining how international trade helps countries grow, especially in Pakistan. It briefly discusses the challenges Pakistan faces, like weak trade policies, inflation, and low-value exports, and how Foreign Direct Investment (FDI) can help. This chapter further outlines the research goals, key questions, and why this study is essential for providing trade policies and economic growth.

Chapter 2: Literature Review- This chapter will compile existing research on the relationship between international trade and economic growth, with a focus on developing countries and Pakistan.

Chapter 3: Methodology- This chapter will describe the research design, data sources, and analytical methods employed to answer the research questions.

Chapter 4: Findings and Discussion- The results of the analysis are discussed, and their implications are discussed in the context of existing literature.

Chapter 5: Conclusion and Recommendations- This chapter will summarize the key findings, highlight policy implications, and suggest areas for future research.

CHAPTER II

LITERATURE REVIEW

2.1 Theoretical framework

2.1.1 Trade liberalization theory

Trade liberalization Theory is actually about reducing trade barriers, like tariffs and quotas; increasing economic growth by encouraging markets to be more capable; welcoming more investments; and promoting competition (Dee et al., 2011). Countries anticipate progress, faster economic development, and satisfied resource utilization through the lowering of these barriers. Trade liberalization theory has been a central pillar of international economic discourse since the classical era, primarily grounded in the principles of comparative advantage. The cornerstone principle asserts that nations are able to obtain economic benefits by focusing on producing relatively efficient commodities and exchanging them with others. Rooted in Adam Smith's notion of absolute advantage and further developed by David Ricardo's comparative advantage model, this theory laid the basis for advocating tariff reductions and open trade policies as engines of economic growth (Cooperation & Committee, 1997). The trade liberalization theory, with both classical and modern theories, is evidence that open markets are a growth and efficiency booster. In practice, particularly in the Asia-Pacific region, much of its real-life effect has met theoretical anticipation. Still, unbalanced benefits and the problem of adjustments are enough reminders to policymakers that liberalization should come with inclusive economic policies.

Trade liberalization refers to the process of opening up the economy of a country to the world by the lowering of a number of activities such as opening the country to imports by taxation (tariffs), and quota cut off as well as making access of foreign goods and services to the domestic context much easier. The basic principle is that when a country specializes in the production of goods in which it is good, it tends to enjoy more of it and can then trade it with other countries. It is the thought of classic economists such as David Ricardo, and is still a significant component of the thought process as viewed by economists and policymakers. The literature also points out that trade liberalization does not just help exports grow. It also helps local industries become more efficient because they have to compete with international firms. In addition, it can push workers and businesses to move from slow-growing sectors like traditional farming to more productive areas like manufacturing and services. This shift is often what drives long-term economic

development. Examples from countries like South Korea, Taiwan, and Singapore show how effective trade liberalization can be. In the 1960s and 1970s, these countries opened up their markets and focused on exports. Over the years, they became major players in global trade, moved up the value chain, and significantly improved the standard of living for their people. These cases are often used to show that liberalizing trade, when done with the right policies, can help transform a country's economy for the better (Biggart, 2002). Some studies suggest that farmers face significant challenges in competing without additional support. Adam Smith, in (financial et al., 2024) *The Wealth of Nations* (1776), debated against protectionist policies, stating that: "To monopolize the home market for the product of domestic industry must, in almost all cases, be either a useless or a hurtful regulation." (*Economic Ideas*, 2016). Smith believed that free trade fosters economic efficiency, competition, and growth, laying the groundwork for the principles of trade liberalization.

Since the 1980s and throughout the 1900s, the global economy has undergone several changes, and the promotion of trade liberalization has been an important one. Trade liberalization is the process of moving towards an open, free-market-oriented economy, which is highly characterized by the reduction or removal of taxes on imports or tariffs. Trade liberalization theory has become a core part of modern economic thought, especially in the context of globalization and market integration. The theory supports the idea that reducing barriers to trade, such as tariffs, quotas, and subsidies, leads to more efficient resource allocation, increased productivity, and ultimately, higher economic growth. In simple terms, when countries allow goods and services to flow more freely across their borders, they benefit from cheaper imports, stronger exports, and more competition, which can help domestic industries improve (Shafaeddin, 2012).

Empirical studies have examined how trade liberalization impacts economic growth. One common finding is that liberalization often leads to short-term adjustment costs, such as job losses in protected industries, but brings long-term benefits through increased competitiveness and innovation. For example, in countries like Chile and India, removing trade barriers helped attract foreign investment and led to a significant boost in exports and GDP growth. Both countries have viewed their partnership as mutually beneficial, especially in the context of South-South cooperation. In 2007, Chile and India signed a Preferential Trade Agreement (PTA), which was later expanded in 2017. This agreement is expected to reduce tariffs on various goods and introduce the opportunity for structural trade flows. India's interest in Latin America and Chile's stable economy and resource base have provided a strong foundation for continued collaboration. Trade

between the two countries has included key sectors such as mining, pharmaceuticals, agriculture, and services. Scholars also note that Chile serves as a strategic gateway for India into the broader Latin American region, while India represents a significant market for Chilean exports (Luque et al., 2025). However, some studies also warn that trade liberalization alone is not a magic solution; it must be accompanied by sound policies in education, infrastructure, and regulation to deliver consistent benefits (Were, 2015).

The theoretical models explaining trade liberalization have also evolved. Early models focused on perfect markets and full employment, but modern theories include imperfections like unemployment, market failures, and unequal distribution of gains. This shift acknowledges that while liberalization can make the economy more productive overall, it may also create winners and losers. Therefore, economists now emphasize the importance of complementary policies, such as social safety nets and targeted investment in struggling regions, to ensure that trade benefits are shared fairly. In theory, trade liberalization is supposed to help developing countries because they have more unskilled workers. By opening up trade, these countries can sell goods that require more labor, which increases jobs and raises wages for people experiencing poverty. This should help reduce inequality. However, in real life, the situation is not so straightforward. The benefits of trade liberalization depend on many things, such as how the policies are applied, how strong the economy already is, and what kind of industries a country has. Real-world examples show mixed results. For instance, countries in Asia, such as China and Malaysia, have seen job growth and better wages in industries that export goods after liberalizing trade. These jobs often went to workers with lower skills, which helped reduce poverty and inequality. In contrast, countries in Latin America, such as Brazil and Mexico, saw job losses and lower wages for unskilled workers after trade was liberalized. This happened because their economies were not ready, and they didn't have strong policies to help people adjust to the changes (Lee, 2005).

The debate surrounding trade liberalization focuses on the degree and the extent to which a country can open its market to business with foreign companies. It also looks at trade's effect on overall income levels (Winters, 2004). Economists always associate trade liberalization with growth in GDP, resulting from an increase in both exports and imports. It is a biased view of the issue, as many scholars fail to uncover the real detrimental effects of trade liberalization in developing countries. Often, their studies are subject to many questions. Despite the vast literature on trade liberalization, few studies have explored its detrimental effects in developing countries. According to the IMF document, these policies are often part of broader economic reform programs, especially in countries receiving

financial support from international organizations. The idea behind trade liberalization is that fewer trade restrictions allow more efficient use of resources and can lead to faster growth in the medium and long term. There has been growing concern about how these policies affect poverty. While the long-term benefits of trade liberalization include better job opportunities and stronger economic performance, the short-term effects can be harsh, especially for vulnerable groups. As the report notes, even if the overall economy grows, some communities may face job losses or higher living costs due to changes in trade policies. Therefore, it's essential to carefully design and implement trade reforms with social safety nets to protect those who might be negatively affected (Gillingham, 2008). One can counter by stating, 'What of it?' What are the implications of trade liberalization in developing nations that need our attention? These policies increase the difficulty of living in developing countries. Poverty takes away an individual's dignity. In Pakistan, trade liberalization policies have had a mixed impact. According to (Jian-Peng et al., 2019), while we can observe some economic growth, there are still numerous challenges to overcome in order to eradicate poverty nationwide. Trade liberalization necessitates collaboration, requiring investments and robust strategies and policies to ensure its success, as demonstrated by East Asia's approach (Mo, 2011). Many other studies show that the effects of trade liberalization can vary between countries, depending upon their current ongoing policies and economic conditions (Winters, 2004). When we see Pakistan in the context of trade liberalization theory, then the reduction of tariffs and quotas has a symbolic effect on sectors like agriculture and textiles, which play an essential role in the economic development of Pakistan. The reforms have significantly boosted Pakistan's agricultural production by attracting investments in equipment and technology. Studies show that the consumer price index and increases in machinery like tractors positively impact trade openness (H. Ali et al., 2022). Liberalization also helped the agricultural sector by expanding exports and raising competitiveness. However, factors like quotas and tariffs within Pakistan will ultimately determine the growth and export potential of these sectors (Z. Bashir & Din, 2003).

Trade agreements such as the South Asian Free Trade Agreement (SAFTA) positively impacted textile and rice exports to neighboring countries. However, there are still many hurdles, such as unauthorized trade channels, that negatively affect the rice exports of Pakistan (Shaikh et al., 2015). In addition to that, the removal of trade barriers actually strengthens Pakistan's export goods so that they have favorable access to global markets (Anwar et al., 2010). Trade liberalization has led to increased income inequality in some cases, especially for local industries facing rigid foreign competition (Qayyum et

al., 2018). Agricultural trade has played a vital role in economic growth; it increases income inequality, especially for people in rural areas who are dependent on the farming sector. Therefore, we need effective policies that address the impact of trade on income delivery (Khan, 2015). In Pakistan, the policies of trade liberalization that have been implemented since the late 1980s have played a vital role in the expansion of key sectors by opening the way to international markets (Z. Bashir & Din, 2003).

The economic crisis deepened in 1998 when Pakistan conducted nuclear tests, which led to global sanctions. In response, the government froze all foreign currency accounts, scaring off foreign investors and halting around \$2.5 billion in expected private remittances. With banks and the central bank unwilling to lend, Pakistan faced a severe shortage of foreign currency and risked defaulting on its international payments. Despite these challenges, some structural reforms did take place. For example, by the late 1980s, Pakistan's fiscal deficit had grown to more than 8% of GDP, which was unsustainable. Reforms were introduced to lower this deficit by changing the tax system and cutting unnecessary government spending. Importantly, Pakistan also started reducing its extremely high tariffs, lowering the maximum tariff rate from 225% in 1986/87 to more manageable levels over time. This was a significant step toward trade liberalization (M. Z. Khan, 2009). However, this path has also brought challenges, including increased income inequality and too much dependency on primary exports.

The success of trade liberalization depends on a country's internal economic and political conditions. For example, countries with better institutions, stable governance, and investment in education tend to benefit more from open trade policies. On the other hand, if trade reforms are not managed well, they can lead to imbalances like rising inequality or trade deficits (Anser et al., 2023). In this study, the author will be interested in finding out whether the experience of trade liberalization that Pakistan went through has led to sustainable economic growth or whether the fact that it lacks the necessary infrastructure, coupled with equal distribution of resources and benefits, has interfered with success.

2.1.2 Dependency Theory

Dependency theory aims to raise awareness among countries about how excessive reliance on exporting goods, such as agricultural or manufactured goods, can pose challenges to sustainable growth. It also brings in the issue of poor countries relying on the export of low-value commodities to their affluent counterparts, thus leading them into the vicious cycle of underdevelopment. This theory was popular in the 1960s and 1970s because poor nations were not growing based on the concept of modernization, a theory that indicated all nations could develop similarly, provided they emulated the actions of the

rich Western countries. Instead, Dependency Theory argues that the world is divided into two groups: the "core" (rich, industrialized countries) and the "periphery" (poor, developing countries). The core countries keep the periphery poor by controlling their resources, trade, and labor (Lea, 2000).

According to dependency thinkers like Andre Gunder Frank, developing countries are poor not because they are "behind" but because they are made poor by the way they are connected to the global system. For example, poor countries are often forced to export cheap raw materials (like cotton or minerals) and import expensive finished products (like cars or electronics). This kind of trade keeps them dependent on the rich countries and makes them unable to build strong industries. This cycle is called "unequal exchange," and it stops developing nations from growing their economies independently (Kay, 2005). Critics of Dependency Theory argue that it can be too pessimistic, and that some countries like South Korea or China have thrived through global trade. However, supporters say that these are exceptional cases and most poor countries are still stuck in unfair global systems. The theory remains influential today, especially in discussions about trade, globalization, and inequality (Santos, 1970).

This excessive dependence leads to unfair trade relationships, which in turn limit a country's ability to develop and produce high-value products. For example, South Korea's agricultural sector was suffering hard from trade liberalization, forcing the government to depend on food imports due to its small-scale farmers competing internationally (Fung, 2017). South Korea struggled hard to boost its economy by focusing on trade, education, and technology. Governments play a crucial role in helping and guiding industries to become stronger and more competitive. A key part of this process was the heavy and chemical industry (HCI) strategy in the 1970s, which boosted important industries and helped South Korea become a global player. So, countries must reduce their reliance on foreign powers and build their industries, infrastructure, and policies that serve their people. While some critics say this theory is too pessimistic or outdated, it still offers a powerful way to understand the unequal relationships between rich and poor nations (OECD, 2023). To deal with this problem, scholars suggested expanding exports and making domestic industries stronger so that countries would depend less on basic goods (Clark, 2008). More recent research on global value chains shows that structural inequality makes it challenging for poorer countries to reach more valuable markets (Kvangraven, 2021).

Malaysia followed a different path by first protecting its local industries, like the car industry, before opening up slowly to outside competition. Malaysia also establishes

strong partnerships with its neighboring and other countries while growing its industries (Sawasate & Tai, 2013). South Korea's success inspired Malaysia. This event led to the "Look-To-The-East" policy, where Malaysia focused on learning from countries like South Korea and Japan to improve its economy (Iqbal, 2017). Many scholars have looked into how Malaysia's relationships with international markets, multinational corporations (MNCs), and former colonial powers have shaped its economy in line with dependency theory. Malaysia's early economic structure during the colonial period was focused on exporting raw materials such as rubber and tin to the global North. These export-oriented industries were set up not to benefit local development, but to serve foreign markets and profits. Even after independence, this pattern continued, as Malaysia remained integrated into global markets in a way that made it dependent on the demand and prices controlled by developed countries (Anazawa, 2021). Malaysia also experienced what dependency theorists call "unequal exchange," where the country exported low-value goods and imported high-value products. This pattern made it hard for Malaysia to climb up the global economic ladder. Although Malaysia has tried to shift to a knowledge-based economy and reduce dependence, its deep integration with international supply chains still reflects key issues raised by the dependency theory (Tai & Ku, 2013). Andre Gunder Frank was a famous scholar of Dependency Theory, who mentioned how economic and political relationships between developed and developing countries maintain inequalities and underdevelopment. His famous quote stated that: "The historical dependency of the developing countries on the industrialized countries is the root cause of their underdevelopment" (Frank, 1967).

Any country that relies on exports can affect its economy. A study comparing Pakistan and Singapore reveals that depending on exports can, to some extent, increase overall growth. It also makes an economy more sensitive to changes in the global market, meaning that any external shift can directly impact Pakistan's economic situation (Furuoka & Munir, 2010). Ingle's work is a thoughtful comparison because it looks at how much Zambia depends on mining products and exports, focusing on the risks that come with relying solely on natural resources for economic growth. While Pakistan also heavily relies on exports, particularly textiles and agriculture, Ingle's analysis highlights the importance of expanding the economy to reduce excessive dependence (Mark Ingle, 2012). Pakistan struggles to achieve economic freedom because of its dependence on foreign aid. This excessive reliance on foreign assistance limits Pakistan's ability to use its resources effectively. The study argues that sustainable development is required for Pakistan to maintain and create more robust national financial resources and strategies (Kemal, 1992).

Pakistan has remained dependent on foreign aid, loans, and investments from developed nations and institutions like the IMF and World Bank. These forms of support often come with conditions that force Pakistan to open its markets and cut public spending. While such policies are meant to help the economy, they sometimes worsen poverty and inequality. The country ends up exporting raw materials and importing expensive manufactured goods, which leads to trade imbalances and a cycle of debt (K. Siddiqui, 2022).

Pakistan's GDP depends on exports to boost economic growth, but this relationship is not strong enough for long-term development. Many researchers have shown that trade policies and export strategies are often shaped to meet international demands rather than local development goals. For example, Pakistan mainly exports low-value products like textiles and agricultural items, which do not generate high income. Meanwhile, it imports expensive machinery and technology. This kind of trade imbalance creates long-term dependency. While exports have a positive impact on economic growth, the structure of those exports matters a lot (Fatemah & Qayyum, 2018). Exporting basic goods limits Pakistan's chances for real development, which supports what dependency theorists argue. Pakistan mainly exports raw or low-value goods such as textiles and imports expensive machinery and technology. This trade imbalance limits Pakistan's ability to build strong, independent industries. Researchers have pointed out that such trade patterns are a classic example of dependency, where a developing country stays stuck in a less influential role in the global economy. The presence of multinational corporations and heavy borrowing to fund development projects has also led to an economic structure where profits often go abroad instead of being reinvested locally (Bangkur, 2024, pp. 2020–2021).

Therefore, Pakistan needs to make more robust and more advanced domestic industries to ensure more sustainable growth (N. Ahmad et al., 2012). The relationship between energy consumption, trade, and growth in Pakistan relies heavily on its trade connections; if Pakistan doesn't practice sustainable development policies, it may be challenging to keep the economy going due to its high demands and costs (Raza et al., 2015). Political dependence also plays a role. Pakistan has aligned its foreign policy with major powers like the United States and China to receive economic and military aid. However, this support often comes with conditions that affect Pakistan's autonomy in making domestic economic and political decisions. What ensues is a state that is financially and policy dependent, which is a significant aspect of concern elaborated by dependency theorists (Jan, 2010).

According to the dependency theory, countries such as Pakistan find it challenging to develop since they rely on basic commodities and are also receptive to fluctuations in

the world market (Ellahi et al., 2011). The dependency theory offers an appropriate framework in which the Pakistani economic problems can be examined. Besides, the Pakistani export basket focuses on low-value products like textiles and agricultural products, whereas it imports high-value machinery and technology from the countries of the developed world. This imbalance shows how Pakistan's role in the global economy is shaped by the needs of more powerful economies, limiting its ability to move up the value chain. The report emphasizes the fact that this trade pattern maintains the cycle of Pakistan being a provider of raw products and a consumer of the finished products, and maintains it as a dependent state. (Asian Development Bank & Islamic Development Bank, 2020). This study will investigate whether trade and foreign investment have favored genuine economic development in Pakistan or if they have aggravated the country's dependence on external factors (G. Ali & Rafiq, 2019).

The lesson for Pakistan is that relying too much on textiles and agriculture is risky. Global prices can significantly impact countries if they heavily rely on low-value products; further studies indicate that such reliance can lead to economic challenges, especially for low-income countries. McCartney found that Pakistan's economy heavily relies on external elements like international trade and financial resources to maintain its strength. Noticing these external factors, he finds that Pakistan's growth still depends on its internal activities (McCartney, 2011). In Pakistan's case, dependency can be seen in trade, investment, and debt patterns. The country heavily relies on exporting low-value goods like textiles, cotton, and agricultural products, while importing high-value machinery, oil, and technology. This trade imbalance benefits industrial countries more than Pakistan. Furthermore, the country's reliance on foreign loans and aid, mainly from institutions like the IMF and World Bank, reflects dependency thinking. These financial arrangements often come with conditions that restrict Pakistan's policy choices, pushing it to adopt neoliberal reforms like privatization and trade liberalization, which do not always benefit the local economy (Akbar Zaidi, 2015). Moreover, the domestic political economy also plays a role in reinforcing dependency. Pakistan's economic and political elite often act as intermediaries who benefit from foreign capital inflows and aid but fail to direct investments into long-term development strategies (Haider & Ali, 2015).

2.1.3 New Trade Theory

In 1979, Paul Krugman added a new view on trade by presenting his theory, the New Trade Theory 1979, for which he was awarded the Nobel Prize in Economic Sciences in 2008. New Trade Theory offers a new way to understand why countries engage in international trade even when they have similar resources and technology. Unlike

traditional trade theories that focus on comparative advantage, NTT explains trade through increasing returns to scale and network effects, especially in industries with high fixed costs like manufacturing and technology. Paul Krugman, a key contributor to this theory, emphasized that economies of scale and consumer preference for variety can lead to trade even between countries with identical production capabilities (P. Krugman, 1980). (Dollar, 2019) Also discusses how government policies such as subsidies, strategic trade protection, and export promotion can influence trade flows. Governments can help domestic firms achieve economies of scale early, giving them a competitive edge in the global market. This state intervention is particularly relevant in developing countries like Pakistan, where emerging industries may struggle to compete without support. For instance, in Pakistan's textile and garments sector, one of its leading exports, there is evidence that scale economies and learning-by-doing play a significant role. Firms that manage to scale up production tend to perform better in export markets, which aligns with NTT's predictions.

His theory gives a clear, contradictory picture of the established neoclassical theories (P. R. Krugman, 2009). In the context of Pakistan, recent studies show mixed outcomes. For example, although trade openness has been a key focus of economic policy since the 1990s, its rewards have not been smoothly realized. Data suggests that while liberalization can minimize unemployment and increase GDP in theory, its real impact on growth in Pakistan has often been limited due to a lack of competitiveness and export diversification (G. Ali & Rafiq, 2019). Although FDI brings capital, it usually focuses on extractive or low-wage sectors, with profits repatriated to foreign owners. This prevents reinvestment into the local economy and limits technology transfer. Scholars argue that such investments maintain economic asymmetry between the global North and South, reinforcing Pakistan's subordinate position in the worldwide system (World Bank, 2022).

Nevertheless, in an attempt to exploit these advantages best due to the restricted use of resources and technology, small economies tend to take advantage of such benefits (Corsetti et al., 2007). The New Trade Theory takes on a relevant angle regarding the new trade situation among developing nations such as Pakistan. Industrial base is low and dispersed, which means that the country does not have the capabilities to attain economies of scale or penetrate high-value-added markets in the world market. As the presented file points out, low-value industries like textiles and raw agriculture are still the focus of Pakistani exports. NTT means that such industries might never achieve the competitive advantage observed in those countries where governmental involvement with specific policies (strategic intervention) was successful (Asian Development Bank, 2020). The studies emphasize that trade liberalization alone does not ensure success under NTT.

Without investment in innovation, infrastructure, and skills, developing countries may remain stuck in a cycle of exporting basic goods while importing high-value manufactured items. As a result, trade could reinforce inequality rather than reduce it. The survey points out that trade liberalization is not a sufficient means of success in NTT (Helpman & Krugman, 1987).

The study from Taneja examines the potential of textiles and clothing between India and Pakistan, which are two of the leading textile-exporting countries. Despite traditional and cultural similarities, the textile industries lag behind global standards due to significant economic and political barriers (Taneja et al., 2017). Economist Paul Krugman, about New Trade Theory, stated that “The kinds of interventions that new trade theory suggests can raise national income typically raise the welfare of small, fortunate groups by large amounts while imposing costs on larger, more diffuse groups”. New Trade Theory (NTT) offers Pakistan a way to boost its economy by focusing on industries with economies of scale, producing more at lower costs. Currently, Pakistan relies too much on low-value exports like agriculture and textiles, making it more sensitive to external shocks. Diversifying into high-value sectors and focusing on specialized products could increase export stability and reduce risks. Improving trade agreements is also a way. Since many deals have yielded little benefit due to low competitiveness, Pakistan should renegotiate with a focus on industries that could grow through specialization (Naqvi & Schuler, 2007). Pakistan can further benefit by targeting high-potential markets such as Europe, ASEAN, and the Middle East, which could open new trade opportunities (Gul & Yasin, 2011). Encouraging innovation is another priority. The New Trade Theory (NTT) emphasizes that technological advancements and research can strengthen competitiveness, so Pakistan should invest in research- and development-intensive sectors.

For Pakistan, the new trade theory implies the need to transform its export base and shift its focus from low-value to advanced industrial products. Adopting and developing high-value industries will minimize risks associated with the varying demand for basic goods and improve long-term economic stability (Azhar, 2012). This research will explore whether Pakistan’s trade policies and foreign investments have benefited industrial upgrading and innovation or if structural reforms are still required to ensure sustainable economic growth.

2.2 Conceptual Framework

2.2.1 Economic Growth

Economic growth refers to an increase in the ability of an economy to produce goods and services within a period, over a fixed period. Typically, the GDP per head in the

country of origin serves as the basis for this estimation. This increase relates to how a country builds its assets and, in equal measure, fosters the happiest times of its citizens (Florina, 2014). Economic growth means a country's standard of living or income increases over time. A key measure for this is the change in GDP per capita. In the last 200 years, the world has seen significant growth, especially in Western countries, Japan, and parts of Asia. However, not all countries have grown at the same speed, and poor countries, including many in Africa and South Asia, still lag behind rich countries (Angus, 2001). To understand why some countries grow faster than others, economists use a tool called the production function, which shows how output (GDP) is produced using physical capital (like machines), human capital (like education and health), and natural resources, along with technology and efficiency (Elmslie & Tebaldi, 2010). Rich countries tend to have more machines, better education, and better health, which makes their workers more productive. They include both how much work they do, how they do it, which tools and equipment they use, and how they work more effectively. Whenever we have to calculate growth, we first look at GDP, which makes the overall value of goods and services generated or produced in a country clearer. Gross Domestic Product (GDP) doesn't explain the whole story. The distribution of property or wealth, its overall impact on the environment, and the daily changes in people are all irrelevant. To enhance clarity, some authorities recommend utilizing new indicators such as the Growth Quality Index, which provides more concise information.

However, capital alone doesn't explain everything. Studies show that differences in productivity (how efficiently inputs are used) are more important than the amount of capital. For example, two countries with the same number of machines and educated workers may have different incomes because one uses its resources more effectively. This means that policies and institutions that improve productivity matter a lot (Caselli, 2005). There are two key ideas in modern growth theory: exogenous growth (where technology grows outside the economy, like in the Solow model) and endogenous growth (where innovation and learning happen inside the economy, like in Romer's and Lucas's theories). In the endogenous view, countries can grow faster by investing in education, research, and learning new skills. Policy choices matter a lot. Countries that promote exports, protect property rights, and invest in innovation usually grow faster. Countries that protect inefficient industries or block new technologies may fall behind (Aghion & Howitt, 2006).

The critical concept we have to understand is that growth and development are not the same thing. The idea or the concept of economic growth is about generating more, but economic development is about the betterment of people's lives. A country can grow, but

if the resources are not distributed equally, many people might not see an improvement. Education, healthcare, and infrastructure are all required for economic growth. Economic growth increases more when a country starts entrepreneurship, trade, and innovation. Some of the studies proved that alternative measures, like the Growth Quality Index, provide a more detailed understanding of economic performance (Poliduts & Kapkaev, 2015). Economic growth should be inclusive. This means that all people in society, not just the wealthy, should benefit from it. Policies that ignore income distribution or focus only on GDP may lead to growth that deepens inequality. Moreover, macroeconomic stability is central. If inflation is high or the currency is unstable, it discourages investment and savings, making it harder for businesses to grow. Therefore, sound fiscal and monetary policies are essential for ensuring steady growth (Mlachila et al., 2014).

One major factor that supports economic growth is international trade. Trade allows countries to exchange goods and services, making it easier for them to specialize in what they do best and gain from that exchange. (Amelia, 2022) explains that trade, primarily through exports, can become a “growth engine” by bringing in foreign income and encouraging higher levels of production. The idea is that if a country exports more, it can earn more money, which can then be reinvested into its economy. Another benefit of trade is that it encourages the use of more advanced technology and better production methods. When countries trade, they often adopt new tools and systems to stay competitive. This leads to what researchers call an “investible surplus,” extra income that can be used for development (Amanda & Aslami, 2022). For example, when exports rise, producers may earn more and invest those profits in expanding their businesses or hiring more workers. Over time, this leads to higher output and stronger economic performance. Economic growth is not just about producing more. It also involves improvements in technology, infrastructure, education, and health. These improvements help make workers more productive and businesses more efficient (Karki et al., 2020). For example, when a country invests in good roads and transport systems, companies can deliver products faster and cheaper. Similarly, a well-educated workforce can innovate and create better ways of doing things, boosting productivity and output. However, the link between economic growth and other economic factors like inflation is vital. A small amount of inflation, if kept under control, can actually help growth by encouraging people to spend and invest instead of saving money that loses value over time. However, if inflation is too high, it reduces the buying power of people, discourages investment, and can lead to slow or even negative growth (Wogari, 2023). Another critical point is that growth should be sustainable. This means it should not harm the environment or leave out groups of people. Long-term

growth needs proper planning and policy support. Governments must balance growth with other goals like keeping prices stable, reducing poverty, and protecting natural resources. If economic growth comes with high inflation or damages to the environment, it may not last and can even harm future development (Imam Khairi & Haryanti, 2024).

International trade is widely recognized as the primary catalyst for economic growth, enabling countries to focus on their areas of comparative advantage, resulting in increased efficiency and higher income levels. However, trade also indicates challenges, especially in terms of income inequality, as the benefits of globalization are not always divided equally across populations (Cristescu & Tîlvăr, 2019). In addition, inflation and government spending have a complicated impact on economic growth. While balanced inflation can promote spending and investment, high inflation lowers purchasing power and decreases long-term economic stability (Zieba & Mbugua, 2022). Economic growth also depends on how well a country manages its resources. For example, efficient labor markets, good infrastructure, strong institutions, and investment in education and technology all support growth. Countries that focus on improving these areas tend to grow faster. The structural reforms, such as building roads, improving schools, and reducing bureaucratic delays, help create a better environment for economic activities (Ayele et al., 2023).

2.2.2 International Trade

The exchange of goods, services, and capital across borders is international trade. It allows countries to receive products from other countries that they cannot even produce in their own area. This trade is not just about products like machinery, food, or clothes, but also includes services such as banking, tourism, and transport. Some countries are better at making certain goods due to natural resources, climate, or skilled labor. For example, Egypt is known for cotton, and Cuba for sugar. These countries trade their surplus products for things they cannot produce easily. This idea is supported by the theory of comparative advantage by David Ricardo, which says that countries benefit when they focus on producing goods they can make more efficiently and trade for the rest (Aldrich, 2004). Trade also encourages competition, which leads to better quality products and innovation. Exporting goods allows companies to grow, generate income, and create jobs. In Pakistan, industries like textiles and agriculture depend heavily on foreign markets. As trade increases, more people get employed, and the economy grows. This idea is supported by the Heckscher-Ohlin theory, which explains that countries tend to export goods that use their abundant resources, such as labor in the case of Pakistan (Leamer, 1995).

Trade is not only about economic satisfaction; it also helps expertise, allowing

countries to focus on industries where they have a profit. Trade has long been the cause of income inequality; however, most of the existing studies are related to the impact of international trade on economic growth. Trade openness has a strong link with monetary expansion, as it enables access to a larger market, brings in foreign investment, and allows local industries to compete globally. In countries like Pakistan, trade has the potential to reduce poverty by creating jobs, improving wages, and encouraging industrial development. However, the impact of trade can differ depending on a country's infrastructure, trade policy, and political stability (Helpman et al., 2012). Trade can likely increase skill choice as discussed in various studies (Stokey, 1996), which is directly related to total income inequality. However, trade also increases labor's total income share, which has a negative relation with income inequality, proving that labor return is equally shared with capital income. So, empirical studies show trade openness has had a mixed impact on Pakistan's GDP.

Trade moves around the physical goods and services, like banking and tourism, which have grown more rapidly in recent decades. For example, trade service grew at 18% yearly compared to 9% of merchandise trade, which shows the increasing advantage of global trade (Seyoum, Export-Import Theory, Practices, and Procedures). Globalization, technological advancement, and decreased trade barriers have backed this increase, making international trade an essential driver of economic interdependence. International trade plays a significant role in shaping a country's economic development, particularly in a globalized world. It refers to the exchange of goods, services, and capital across international borders. This exchange is not just about buying and selling; it's also a way to share ideas, technology, innovation, and investment. In the conceptual framework of your thesis, international trade is an essential factor that interacts with other economic elements like economic growth, productivity, and investment flows (Dzaleva & Lazaroski, 2007). The recent progress in the trade sector during the 19th century caused a reduction in trade costs, decreased trade costs, improved the effects of trade policies, and contributed to the trade boom. The overall effects of trade on income inequality are mixed, which is difficult to gather without knowing each mechanism. Until World War I, international trade kept increasing. Some industries in less competitive countries might fail when exposed to stronger international rivals. This can lead to unemployment or economic instability if proper policies are not in place. Governments may respond with protectionist measures like tariffs and quotas, but these often lead to inefficiency and stagnation.

Trade has changed over time. In the 19th century, lower costs supported an increase in global business. Nowadays, trade boosts economies, but it also creates inequalities in

different regions, mainly for lower-skill workers (Takım & Gültekin, 2022). Trade liberalization has helped many countries grow by reducing tariffs and trade barriers. For example, when a country lowers import taxes, it encourages more global trade flows, attracting foreign investment and new technologies. This is especially important for industrializing economies like Pakistan, where foreign technologies and machinery play a key role in upgrading local industries. Trade can also lead to job creation in export sectors and better allocation of resources (Galiatti & Garutti, 2022). From a policy angle, international trade should be supported by reforms that boost competitiveness, such as infrastructure investment, human capital development, and smart trade agreements. The benefits of trade can be maximized only when a country's economic environment is ready to absorb the gains through strong institutions, efficient logistics, and diversified exports. Trade in itself is not the end goal, but a powerful tool that must be managed wisely to ensure inclusive growth (Nicita, 2019).

Governments need to check properly to make sure that everyone enjoys the benefits of trade by spending on education, job training, and fair tax policies. If done correctly, trade can continue to help economies grow while decreasing unjust economic gaps. International trade acts as a bridge between production capabilities and consumption needs, improving resource allocation and encouraging innovation. When countries trade, they benefit from economies of scale and technological spillovers, both of which can enhance productivity and living standards (Rowden, 2011). In developing countries like Pakistan, international trade is significant. It offers opportunities for growth that might not be available domestically due to limited industrial bases or small consumer markets. However, the benefits of trade are not automatic. Countries must develop supportive policies such as trade facilitation, customs reform, and investment in infrastructure. As the document notes, without such policies, nations may remain dependent on low-value exports and struggle to gain from global trade.

2.2.3 Inflation Rate

Inflation rate is one of the most important macroeconomic indicators that affects the overall performance of an economy. It refers to the general rise in the prices of goods and services over time, which reduces the purchasing power of money. In the context of economic growth, inflation can have both positive and negative effects depending on its rate, cause, and how well it is managed. Inflation rates have a long-lasting impact on countries by changing the prices of goods and services. If a country has high inflation, the items it exports will have higher prices and be more expensive than others (Ikram et al., 2023). Inflation is a double-edged sword. Moderate inflation may encourage investment

and consumption, as people and businesses spend before prices rise further. However, high and unpredictable inflation creates uncertainty, discourages investment, reduces savings, and eventually slows down growth. For developing countries like Pakistan, inflation is often linked to structural weaknesses such as energy shortages, supply chain issues, and heavy reliance on imports. These factors contribute to cost-push inflation, where prices increase due to higher production costs rather than increased demand (Borio et al., 2023). It will make imports of a country into another affordable, and this has a malicious impact on the local business. This condition can create unrest in the balance of trade, making it difficult to compete globally. There is a complex and two-fold effect of inflation on economic growth. On one hand, moderate inflation can indicate a growing economy where demand is increasing, investments are rising, and production is expanding. This is because a controlled level of inflation encourages spending and investment instead of saving, which can boost economic activity. On the other hand, if inflation gets out of control, it brings economic instability. It reduces the value of savings, increases the cost of living, discourages investment, and causes uncertainty among consumers and businesses (ASEAN and Global Value Chains, 2023). A small rate of inflation can be considered a positive thing because it provides a way to spend or invest rather than hold in hand. But when it crosses a specific limit, it creates problems, reduces the value of money, makes it difficult for people to save, and results in unsuitable conditions for a business. Increased inflation slows down the economic growth of a country, significantly discouraging investment and negatively affecting it.

Inflation not only affects one country; it will increase across countries because of the interconnected global economy. Countries that have slow inflation often attract more money, and their economy grows faster because of their stability. In contrast, countries with high inflation have a lower chance of economic progress, and they struggle more to attract investors and maintain relationships with other countries. Inflation below a certain threshold can be fruitful for growth, as it promotes businesses to invest and consumers to spend. However, at a certain point, inflation starts to impact economic growth negatively, reducing real wages and depressing investment (Fattahi et al., 2016).

In an interconnected world, the pressure of high inflation in one country can also affect others through trade, investment, and other ways. Some developing countries face inflation due to external factors like changes in exchange rates, changes in global commodity prices, or trade imbalance (Galal & Lan, 2017). In economic studies, inflation is a central variable because it influences savings, investments, consumption, and overall economic activity. It is usually measured through indices like the Consumer Price Index

(CPI). Moderate inflation can be a sign of a growing economy, but high or unstable inflation can damage economic stability, reduce investment, and create uncertainty for businesses and consumers. Structural phenomena like a lack of supply, bad government, and fiscal deficit are some of the reasons that inflation is occurring in developing countries like Pakistan. The given document emphasizes that inflation in Pakistan has been revealed to be prone to frequent fluctuations, which depend on the variation of oil prices, food prices, and exchange rates. Poor people are the significant casualties of high inflation since their income proportionately consumes more on needs such as food and energy. This may aggravate income inequality and lower the real income, supporting economic retardation (Malik et al., 2020). What is more, the interaction between inflation and growth is complicated. According to some economists, moderate inflation could trigger growth by enhancing consumption and investment. However, once inflation turns out to be unpredictable, it will discourage long-term investments and interfere with business planning. The document notes that inflation in Pakistan is not only driven by demand but also by cost-push factors such as higher utility prices and depreciation of the local currency. These dynamics make inflation difficult to manage without coordinated monetary and fiscal policies (I. Ali et al., 2024).

To ensure stable economic growth, policymakers aim to keep inflation within a minimum range, such as by adjustments in interest rate and currency equalization strategies (Sitanggang et al., 2022). A well-established and managed inflation rate provides a stable business environment, supports economic growth, and avoids financial interruptions. From a policy perspective, controlling inflation is essential for economic stability. The central bank must balance interest rates and money supply to prevent excessive inflation. Yet, simply tightening monetary policy is not always effective in Pakistan, where non-monetary causes also drive inflation. Therefore, inflation management must also include improvements in productivity, investment in infrastructure, and reform of pricing and subsidy systems (Agénor, 2013).

2.2.4 Foreign Direct Investment

Foreign Direct Investment (FDI) can be defined as an investment that can be made in the form of cash, equipment, or infrastructure by a foreign company in a foreign country to start or extend a business. FDI contributes to economic growth in two significant ways: directly, by adding to capital stock and employment, and indirectly, by creating spillover effects such as technology diffusion, improved production techniques, and stronger linkages between domestic and foreign firms. In Pakistan's case, sectors like telecommunications, power generation, and banking have benefited most from FDI

inflows. However, the impact of FDI is not always automatic or guaranteed. The positive effects largely depend on the host country's ability to absorb and adapt the new technologies and skills that come with foreign investments (Borensztein et al., 1998).

Sound macroeconomic policies, well-developed infrastructure, and human capital are essential to maximize the benefits of FDI. If these factors are weak, FDI may lead to exploitation of resources or crowding out of local businesses rather than promoting genuine growth. Some studies warn that FDI can increase income inequality if its benefits are not evenly distributed across regions and populations (Alfaro et al., 2004). While FDI has great potential to boost economic growth, especially in developing economies like Pakistan, its effectiveness relies on national readiness, policy alignment, and institutional strength. It is not just the quantity but the quality and management of FDI that determine its long-term contribution to development (Te Velde, 2001).

FDI's impact on economic growth, however, varies based on the host country's structural characteristics. Developed economies like the United States, for example, show a nuanced picture. While many studies have demonstrated that FDI traditionally positively influences GDP growth, empirical findings of the survey by Ram & Zhang (show that in the U.S, the relationship between FDI and economic growth is sector-specific and often statistically insignificant. However, FDI contributes to about 88.8% of real GDP growth in the U.S.; not all sectors show a meaningful or positive relationship. Information technology and professional service sectors contributed significantly, while manufacturing and retail sectors showed either weak or negative correlations. The study confirms that industries like finance and banking, often assumed to be strong contributors, do not significantly impact U.S. GDP growth (Susilo, 2018).

According to (A. H. Khan & Kim, 1999), FDI in Pakistan has primarily targeted sectors such as telecommunications, energy, manufacturing, and financial services. However, political instability, inconsistent economic policies, weak regulatory systems, and security concerns have been persistent challenges, reducing the country's ability to attract and retain long-term foreign investors. These obstacles can create uncertainty and discourage multinational corporations from investing large sums over extended periods. One of the key benefits of FDI is its role in filling the investment gap in developing economies. When it comes to financing big infrastructure or industrial projects, it is common to find that household savings in Pakistan are not enough. It is a gap that is made easier to close through FDI, because the nation has been able to expand industries such as energy and technology, which are essential for long-term development. Moreover, the productivity and competitiveness of domestic companies may be enhanced by means of the

knowledge and technology transfers that are included in the process of FDI (Jadhav, 2012). Empirical research also points out the presence of a positive spillover effect of FDI onto the host economy. By entering the market, foreign companies tend to improve the quality of their operations, thus making domestic businesses innovate and enhance their efficiency. This may result in increased competition and high-quality goods and services for the local economy. In addition, FDI fosters the growth and building of human capital by training and upskilling local laborers (Hoekman et al., 2005).

FDI is not only a source of capital, but it also introduces new technology, modern management skills, and easier access to international markets. All these contribute towards increased productivity and efficiency of the host country's economy. According to the research conducted by Acemoglu & Restrepo (2019), FDI plays a vital role in employment generation, infrastructure building, and the enhancement of human resources. It serves as a connecting point among the nations, enabling the exchange of knowledge and technology transfer to those countries whose capacity to be innovative is low. FDI in Pakistan has, in the past, assisted in funding key industries in the country, including energy, telecommunications, and manufacturing. These are the industries that have experienced an increase in activities fueled by foreign firms, investing their resources and expertise.

When there is too much inflation, the country's exports become expensive, making it less competitive in the global market, while imports become cheaper, which can affect the local industries. Therefore, the spillover effect of foreign direct investment (FDI) can help increase the strength of supply systems and transform the economic geography of a country. FDI can improve a country's balance of payments by increasing exports. For instance, foreign companies engaged in manufacturing may export products made in Pakistan to other countries, thus generating foreign exchange earnings. However, the benefits of FDI are not automatic. The quality of institutions, political stability, regulatory environment, and infrastructure significantly influence whether FDI translates into meaningful development. In Pakistan's context, issues such as inconsistent policies, bureaucratic hurdles, and energy shortages have at times limited the full benefits of foreign investments. According to (Metaxas & Kechagia, 2013), strengthening governance and reducing red tape are essential to attract and retain long-term, productive FDI. The type of FDI also matters. Investments in technology-intensive and export-oriented sectors tend to have a more positive impact compared to those in extractive industries (Dunning & Lundan, 2008). Therefore, Pakistan should focus on attracting investment in manufacturing, information technology, renewable energy, and services, which have greater potential for generating jobs and innovation.

In the context of Pakistan, the FDI has been highly significant in the energy, telecommunications, and manufacturing sectors. Initiatives like CPEC have been a bright investment, and the outcome has been the provision of infrastructure and employment. In the context of Pakistan, FDI has been critical through the China-Pakistan Economic Corridor (CPEC), which is a flagship project of the Belt and Road Initiative (BRI). This project has led to significant investment in infrastructure, energy, and industrial zones. These investments have helped improve roads, power supply, and connectivity, which are essential for business growth and economic progress (Dunning & Lundan, 2008). One of the most critical outcomes of FDI through CPEC is the improvement in energy infrastructure. By 2020, several coal and hydroelectric power plants had been built, generating more than 3.9 million kilowatts of electricity. This helped reduce Pakistan's power shortages, supported industrial activity, and created around 38,000 jobs. This shows that FDI can directly benefit both the economy and the population by creating employment and boosting productivity (Sun & Wu, 2022). FDI under CPEC has enhanced trade. China became Pakistan's largest trading partner, and in 2020, both countries signed a free trade agreement that removed tariffs on 75% of goods. This kind of partnership improves Pakistan's access to global markets and reduces the trade deficit. Financial cooperation has also grown, with deals like the \$3.5 billion financing agreement from the China Development Bank and a local currency swap between China's and Pakistan's central banks to stabilize financial flows (Khanal & Zhang, 2024).

Countries with well-equipped inflation rates often attract more foreign investments, while countries with inflation face a lot of problems keeping economic stability (Mohd Farouk & Abdul Hamid, 2016). FDI is more likely to flourish and yield its full benefits in environments characterized by transparency, stable macroeconomic policies, and clear regulatory frameworks. Corruption, mainly systemic or chaotic corruption, emerges as a significant barrier to these prerequisites. When rules are applied inconsistently or hidden behind bureaucratic opacity, foreign investors face uncertainty, delays, and inflated costs. Bribes and unofficial fees act like a hidden tax, increasing the cost of doing business while reducing predictability and legal protection (Myint, 2000). But sometimes it has created a threat, like a political hurdle, for foreigners to invest in the company by creating regulatory barriers. These challenges may be overcome to upscale and enhance the formativeness of the FDI for sustainable development in the Pakistani economy. The success of FDI depends heavily on a country's policy environment. When policies are friendly, stable, and transparent, investors feel confident and are more likely to bring long-term investments. For instance, studies show that when Pakistan has maintained

political stability and ensured legal protections, FDI inflows have significantly improved. But in times of political uncertainty or economic mismanagement, investors either withdraw or avoid the market altogether. FDI in manufacturing and technology sectors tends to create more long-term benefits compared to FDI in extractive industries. When foreign investments are directed towards value-added sectors like telecommunications, energy, and technology, they not only contribute to GDP but also help improve skills and innovation among the local workforce. In Pakistan's case, investments in the telecom and energy sectors have shown clear positive outcomes in terms of economic and human capital development (Nandalal, 2021).

2.2.5 Empirical Evidence of Conceptual Framework

Recent time-series research shows that foreign direct investment (FDI) has a significant, long-term beneficial influence on Pakistan's GDP development, especially when integrated with exports and human capital. The effect decreases when human capital is insufficient, illustrating the significance of education and skill development in maximizing FDI advantages (Rehman, 2016). A study utilizing a VECM framework identified a substantial positive long-term correlation between FDI and GDP. It observed that Pakistan's trade balance adversely affects GDP growth, perhaps due to persistent trade deficits. Multiple studies indicate that inflation exerts a complicated, nonlinear effect on economic growth. Moderate inflation was seen to stimulate consumption and investment, but excessive inflation restricted economic performance. Inflation and currency rate fluctuation were particularly harmful to foreign direct investment and long-term growth stability (Wang et al., 2019).

Empirical studies indicate that higher corruption significantly reduces foreign investment inflows (Habib & Zurawicki, 2002). Cross-country regression analyses reveal that foreign investors tend to avoid highly corrupt environments due to increased operational inefficiencies and ethical concerns. Supporting this, (Castro & Nunes, 2013) find that countries with lower levels of corruption consistently attract more FDI, reinforcing the importance of transparency and institutional quality. Further, (Teksoz, 2004) highlights that not all types of corruption affect FDI equally; while some administrative bribery may not deter confident investors, judicial and infrastructure-related corruption are strong deterrents. The impact of institutional reform is emphasized in (Ramirez, 2022), who models how lobbying and corruption shape FDI inflows and concludes that improved institutional integrity increases a country's investment attractiveness. Finally, U.S. firms are particularly unlikely to invest in countries with high levels of perceived bribery, as demonstrated by a study conducted by (Sanyal & Samanta, 2008), which highlights the

reputational and regulatory risks associated with corrupt markets.

Trade openness has had mixed impacts. Although it promotes efficiency and specialization, several data points indicate that it contributes to income inequality and does not consistently lead to inclusive growth. For instance, openness increased income dispersion, but foreign direct investment favored capital over labor, hence contributing to inequality (Shahbaz et al., 2011). Recent research indicates that trade, foreign direct investment, and inflation significantly influence Pakistan's economic growth. They depend upon the effectiveness of handling these aspects. It requires human capital to realize foreign direct investment (FDI), which in turn promotes growth, but a high rate of inflation and trade deficit can act as a hindrance. Such results support the focus of the study and the importance of successful and moderate policy. Some new studies support the argument that the quality of governance is an essential factor in contributing to the inflow of foreign direct investment.

As an example (Azemar & Desbordes, 2009) worked out dynamic panel analysis on 63 developing countries and concluded that multinational corporations would want to invest in long-run strategic industries in stable rule-based countries. Their findings showed that the statistically significant and positive effects of the improvement of the rule of law and bureaucratic efficiency affect FDI inflows. Likewise, (F. A. Ali et al., 2010) analyzed 107 countries within the 25 years where it was known that institutional quality such as the control of corruption, regulation effectiveness, and political stability contributed better towards FDI as compared to the classic economic factor which included GDP growth or a degree of openness in trade. Their regression test showed that well-institutionalized countries enjoyed considerable amounts of FDI. (Busse & Hefeker, 2007) Conducted another analysis of political risk variables and concluded that stability of the government, the existence of political accountability, and lack of internal strife were all good predictors of FDI inflows. These findings underline that investors do not only take into account the level of corruption but also the whole political and regulatory environment. Also, Bensassy-Caret et al. (2007) developed a model of FDI considering the governance indicators, and it was found that the countries with poorly performing institutions were given far less FDI by the OECD states.

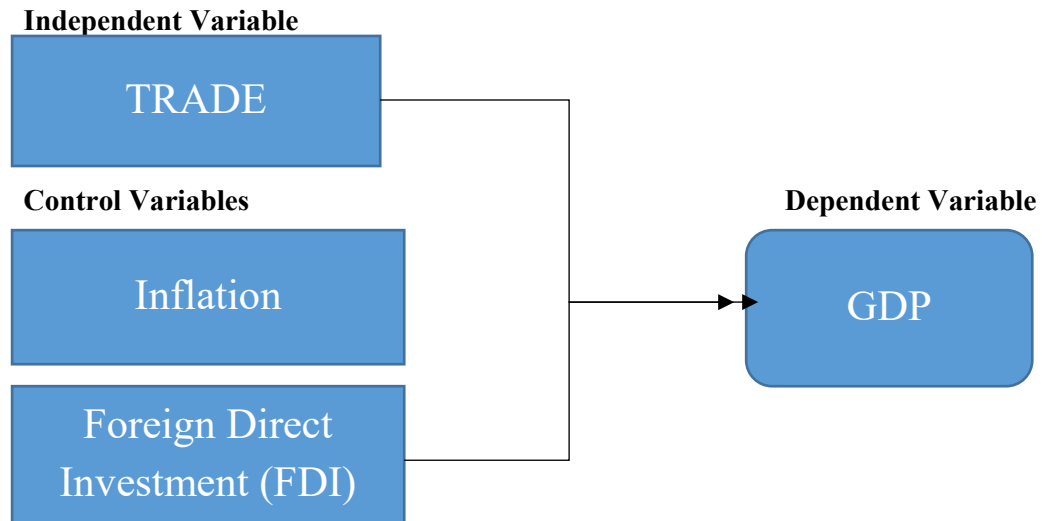


Figure 2.1 Diagrammatic representation of the conceptual framework

Trade is the main independent variable affecting GDP, the dependent variable. Inflation and Foreign Direct Investment act as control variables that also affect GDP. To reduce poverty, trade liberalization has the potential, but it can also worsen inequality. The improvements in governance can lead to real increases in FDI inflows. For example, reforms aimed at fighting corruption, improving regulatory quality, or enhancing the rule of law have been shown to make countries more attractive to foreign investors. This suggests that policy efforts to strengthen institutions can pay off economically by building investor confidence (Duncan & Quang, 2003). The effects vary depending on the country's characteristics and fiscal responses to liberalization (Anderson, 2020). FDI invasions are affected by macroeconomic stability, institutional quality, and trade openness, which impact economic growth and regional gaps (Chowdhury et al., 2023). Leveling trade policies with sustainable development goals (SDGs) can expand balanced growth, especially in poor countries, by assimilating environmental and social objectives (Turkmen, 2022). Trade openness promotes technological diffusion and innovation, improving competitiveness and contributing to GDP growth. This effect is particularly noticeable in emerging markets (Daraojimba et al., 2023). Well-managed and handled foreign investment can mitigate environmental damage while it supports development. When foreign capital comes, it fosters growth, and it should be balanced with ecological considerations (Saini & Sighania, 2019). Weak institutions and political risks can reduce the chances of foreign investment, and they also severely affect the benefits of international trade and investment in developing countries (Jiang et al., 2021).

2.3 Previous Research

The exports also experience heterogeneity, which minimizes the risks of being dependent on low-value exports, which is the case with developing countries. Upstreaming in high-value industries builds a stronger economy and boosts sustainable growth. In many previous studies, the quality of the institutions has been found to contribute significantly to the inflow of FDI. The preference of countries where foreign investment flows is based on

the policies, legality, and high-functioning bureaucracy levels, as well as much lower corruption rates. These contribute to the predictability and the safety of the environment for foreign companies. The studies reveal that a country that has a significant market or abundant resources can be shunned by foreign investors, despite the fact that it has a large market or high resources, since the corruption rates are high or the rule of law is poor (Forrest et al., 2023).

Policies to encourage exports and increased foreign investment are more important in promoting industrial capacity and getting rid of income inequality (Rodrik, 2000). Trade liberalization can alleviate poverty, but inequality may also increase. The impacts are subject to country properties and the monetary reactions to liberalization (Anderson, 2020). They have influences on the macroeconomic stability, institutional quality, and trade openness of FDI invasions. These factors affect economic growth and regional gaps (Chowdhury et al., 2023). By combining environmental and social goals, aligning trade policies with the Sustainable Development Goals (SDGs) can boost balanced growth, especially in poor countries (Turkmen, 2022). Trade openness promotes technological diffusion and innovation, improving competitiveness and contributing to GDP growth. This is particularly noticeable in emerging markets (Daraojimba et al., 2023).

Well-managed and handled foreign investment can mitigate environmental damage while it supports development. Foreign capital, while fostering growth, should balance with ecological considerations (Saini & Sighania, 2019). Weak institutions and political risks can reduce the chances of foreign investment, and they also severely affect the benefits of international trade and investment in developing countries (Jiang et al., 2021). For developing countries like Pakistan, global trade is significant for economic growth (Waheed & David, 2021). Trade increases productivity, fosters specialization, and paves the way for nations to enter global markets. Nevertheless, Pakistan's trade growth faces many challenges, including too much dependency on low-quality exports, which provides more chances of external shocks (Ghaffar et al., 2019). Trade openness is both a driver and a challenge for Pakistan's economy. It helps to approach the global markets, and technological sharing and openness contribute to growth. A complex trade openness index reveals substantial GDP impacts when combined with education and human capital (Hye, 2012).

The time-series studies (Usman, 2017) reveal that export growth is associated with an increase in GDP. Research also highlights the importance of improving export quality as a means to achieve sustainable development. In addition, the China-Pakistan Economic Corridor (CPEC) is providing new opportunities. Still, it requires more planned and

managed policies to gain more and more profit from it (Dastgeer et al., 2023). Foreign direct investment (FDI) enhances technology, skills, and capital in trade. Conclusive evidence proves that FDI boosts Pakistan's economic growth, especially when it is coordinated with trade reforms. Nevertheless, contradictory policies and other infrastructure shortages have restricted the country's capacity to attract long-term foreign direct investment (FDI). These obstacles should be overcome to exploit FDI as a source of growth (Bibi et al., 2014).

Pakistan, which is a developing country, has a great deal of difficulties in the trade policy aspect that includes overreliance on low-value-added exports, overdependence on imports, fiscal imbalances, and the existence of inefficient institutions. Past work has established that the growth potential can be boosted by eliminating these obstacles with budgetary measures and better facilitation of trade (Ullah & Khan, 2021). Effective policies targeting infrastructure development and exchange rate stability are critical to overcoming these hurdles (Jebran et al., 2018). International trade has the potential to drive Pakistan's economic growth, but its success lies in addressing structural and policy challenges. The studies mentioned above give evidence of the importance of export diversification, trade liberalization, and human capital investments as critical drivers of sustainable growth. Policymakers should prioritize innovation, infrastructure, and reforms to get the full benefits from international trade.

Pakistan is an agricultural country, and trade liberalization has a significant impact on its agricultural sector; it helps in reducing trade barriers and enhances technological advancement. (S. Ahmad et al., 2022) Noted that liberalized agriculture leads to higher income and decreases income inequality through the expansion of exports. However, (S. Khan et al., 2020) highlighted the significance of import policies in preventing excessive reliance on external markets and fostering local growth. The case of Pakistan becomes complex when we examine the relationship between trade liberalization and income equality. (M. A. Khan et al., 2021) Determined that trade liberalization initially exacerbates urban-rural income disparities due to unequal access to market resources. Meanwhile, many studies have found that trade liberalization has decreased wage inequality in Pakistan by increasing the demand for unskilled labor in China's Pakistan Economic Corridor (CPEC). (Abbasi, 2021) emphasized the need to address the structural inequalities that liberalization policies have exacerbated, particularly in marginalized communities.

Trade liberalization has both positive and negative implications in Pakistan. (Safdar et al., 2020) The study demonstrated that trade openness first increases carbon emissions due to industrial growth, but it also supports long-term environmental

improvements by utilizing cleaner technologies. (Khalil et al., 2022) In their research, they underline the role of corporate quality in integrating environmental concerns into trade policies. Trade openness is a key to ecological sustainability, and this aspect correlates with long-term growth trajectories (Rahman et al., 2021). Human capital is essential to ensure that trade liberalization is improved in Pakistan. According to (Luqman & Soytas, 2023), there is a positive effect of growth as a result of the development of human capital, especially where they are connected to educational policies. This was because investments in human capital determine the productivity of industries; thus, there is a compound relationship between industrial productivity and trade openness (Shah et al., 2020). Likewise, (Tahir et al., 2020), when examining the issue in their work, they were concerned by the fact that the proper development of labor skills is significant regarding the division of the maximum profit associated with trade and stabilizing its increase.

The China-Pakistan Economic Corridor (CPEC) has profoundly changed the trade of Pakistan, which has led to the growth of exports such as rice and fresh fruits and enhancement of the connectivity with the Chinese markets (Mahfooz et al., 2018). China-Pakistan Economic Corridor (CPEC) has also enhanced the development of services in general, such as optical fibers from China and telecommunication, which is leading to the growth of Pakistan's overall GDP. Additionally, (Mustafa, 2023) opined that the CPEC-related key strategic and economic reforms have the potential to raise the export quality and competitiveness in the international markets. Productive and effective institutions play a crucial role in enhancing the positive impacts of trade liberalization. (Khalil et al., 2022) Their study emphasized that more robust institutional frameworks improve the efficiency of trade policies and lead to sustainable growth. Political stability in a country is also a significant contributor to effective trade performance. Institutional reforms are essential for addressing the weaknesses and inefficiencies in Pakistan's trade policies.

There is no doubt that trade liberalization has led to unequal economic benefits across Pakistan. When we compare main cities like Karachi and Islamabad, there is significant growth due to more foreign direct investment and enhanced market access (Yeo & Deng, 2019). When we look at urban areas that are primarily reliant on agriculture, they have yet to receive or enjoy similar advantages. They continue to grapple with issues such as inadequate infrastructure, limited access to modern technology, and numerous other challenges. As a result, this economic gap between urban and rural areas has increased, and it promotes regional disparities. To address the imbalances mentioned above, it is crucial to implement trade policies that improve transportation operations, storage facilities, and communication networks, thereby enhancing farmers' access to markets for agricultural

purposes. Another significant step is to provide financial assistance, training, and resources to small and medium-sized enterprises (SMEs) in rural areas, which can stimulate local economies, create better opportunities, and decrease the shifting of labor to urban areas. Promoting the production and export of processed agricultural goods rather than raw commodities can boost farmers' profits and contribute to the development of local industries.

Existing studies discuss how international trade benefits countries like Pakistan's economy by growing exports and GDP. However, these studies often miss the main issues. The benefits of trade are not shared equally; some areas and industries gain more than others do. Pakistan still depends too much on low-value exports like raw materials and textiles, which hold back long-term growth. Furthermore, significant challenges like poor infrastructure, unclear trade policies, and political problems are often overlooked. This study focuses on these missing points and suggests better trade strategies to help Pakistan grow in a fair, strong, and lasting way.

CHAPTER III

METHODOLOGY

3.1 Research Design

By employing annual (1985-2023) time series data, the primary selected variables are Gross Domestic Product (GDP), trade (percentage of GDP), Foreign Direct Investment (FDI), and inflation. In order to do so, the study will incorporate the (Johansen, 1988) co-integration method together with the Vector Error Correction Model (VECM) framework. The tools are most appropriate when testing equilibrium connections and dynamic information in nonstationary economic data. The rationale behind co-integration and its role in time series analysis is contributed by the works of (Phillips & Ouliaris, 1990), who came up with the residual-based co-integration tests. These methods help identify the presence of a common long-term trend even though the variables are non-stationary. This would be useful, especially in macroeconomic analysis, where GDP and inflation could have a trending nature. In the event that such variables are co-integrated, then it is indicative of the existence of a significant and consistent relation, which will exist whether in economic booms or downturns, and causal influence can be studied.

The process involves a unit root test, lag selection, co-integration, and estimation of the VECM. All the steps are performed with the help of EView 12 Software, which is a special software focused on working with time series and econometric models. The software is not only capable of helping to perform accurate estimation, but it is also able to accommodate a variety of diagnostic and robustness testing, including residual normality. The results are reliable because of serial correlation and model stability tests. In this modeling process, unit root tests are performed, the lag selection, the co-integration test, and the estimation of the Vector Error Correction (VECM) are performed using the EView 12 software. It is done according to standard steps in line with the proper guide and EViews documentation (Startz, 2019), which sets the procedure by step-by-step formula of performing time series analysis properly.

In further consolidating the validity of the research design, the research study makes sure that the assumptions of the sampled models are testable and fulfilled. As an illustration, the stationarity is tested with the help of the Augmented Dickey-Fuller (ADF) statistic, examining the condition of constant mean and variance of time series variables in each period. It is after satisfying the condition that the research then proceeds to check on co-integration and build a VECM model. To analyze complicated connections in this investigation, we decided to apply an econometric method that is frequently used in social

science studies, especially economics (Linder et al., 2023). This method is based on the quantitative research technique. It underlines objectivity, replicability, and generalizability of findings as a valuable approach in different fields (Saha, 2022). Quantitative research is the strict approach to relationships and decisions based on facts (Janiszewski & Van Osselaer, 2022). Moreover, they emphasize that complex economic systems cannot be analyzed without quantitative methods since they guarantee the decreased threat of a subjective bias and measurable evidence to support decision-making. This research seeks to exploit such benefits by applying time series econometrics that are best suited to embracing both structural trends and variations in macroeconomic variables. In brief, this study design is methodological and anchored on econometric theory. It gives an insightful study of the structural and cyclical interdependence of various critical economic indicators in Pakistan over almost forty years. This monument is useful to policymakers, economists, and researchers.

3.2 Data Resources and Collection Methods

This research is essential to collect the desired data. In order to analyze the relationship between GDP, trade, foreign direct investment (FDI), and inflation in Pakistan on both long-run and short-run bases, the study proposes to use annual time series data on all these variables between 1985 and 2023. A longer duration of the period is chosen to avoid losing short-term fluctuations and, at the same time, capture a sufficient amount of overall trends, making the findings stronger and more applicable in general. WDI is a worldwide database of economic statistics of superior quality and the most reliable and widely used one all over the globe. It will be the primary source of data to be analyzed. The WDI is a source that is common in academics and policy studies based on the notion that it is stable, precise, and internationally comparable. Every variable in the data was picked meticulously, considering both its theoretical application to economic growth as well as its popular application in empirical models that examine the dynamics of macroeconomics in developing nations. The variables chosen in this research work are anchored on their applicability to the research questions that seek to evaluate the contribution of trade and investment to economic growth. We shall describe the variables one by one below;

Gross Domestic Product (GDP) is the variable that measures the output in terms of the summation of Pakistan's GDP output, and along with it, the most important variable determining the growth of the economy is the GDP of the country. It is a significant indicator of the country's economic performance. In a bid to make the analysis homogeneous, navigate around absolute levels, and concentrate on growth patterns, GDP was adjusted to its annual growth rates. Through this change, it is easy to analyze the extent

to which other economic indicators affect the rate of economic growth or contraction over a given period. The growth of GDP is supposed to be influenced by changes in trade, foreign direct investment (FDI), and inflation, which makes it the key variable in the analysis (Mankiw, 2011).

Trade (as a percentage of GDP) is a major contributor to the economic growth process of nations such as Pakistan. It measures Pakistan's openness to international trade. It is the summation of exports and imports as compared to the national economic scale. The percentage of trade relative to GDP holds the extent of economic globalization and how well integrated the country is with the world economy. Since trade is a key driver of growth, its addition enables us to evaluate its direct impact on GDP (Bhagwati, 2004).

Inflation influences both the purchasing power of consumers and the cost of conducting business. High inflation can hurt economic stability, while moderate inflation can promote spending and investment. By including the inflation rate variable, we can explore how inflation impacts the effectiveness of trade policies and foreign investments (Stockman, 1981).

Foreign Direct Investment (FDI) plays a crucial role in the development of newly growing economies. It will provide capital, technology, and managerial expertise that can help expand domestic industries, improve infrastructure, and create jobs. This study examines how FDI interacts with trade and inflation to influence Pakistan's overall economic performance (Blomstrom et al., 1992).

Prior to analysis, the data was verified and organized to ensure accuracy. This study focuses on economic patterns; thus, we transformed the GDP data into yearly growth rates to illustrate the pace of economic expansion or contraction each year. Similarly, we checked the other variables, and there were no missing values or any significant shortfalls. Data was used as it was at the original scale, except for the GDP, which was indicated using the percentage increase instead of absolute values. Besides the statistical data, secondary sources were also used to support the theory and contextual insights, as provided in the form of academic journals, research reports, and books. Peer-reviewed articles concerning the variables and research methodology of the study were accessed on websites such as Google Scholar, JSTOR, and Research Gate. These materials have aided in establishing dominant trends, model specification, and the fact that the analysis should be in line with the existing research practices. According to the general methodology of data collecting, there is a mixed usage of both quantitative rigor and theoretical background, where the analysis is as empirically sound as contextually applicable in studying the economic development of Pakistan.

Table 3.1 Data Resources

Variable	Definition	Source
Gross Domestic Product (Current US \$)	The aggregate of all finished products and services a country produces in a year.	World Bank Indicators (WDI)
Trade (% of GDP)	The value of a country's imports and exports as a percentage of its total GDP.	World Bank Indicators (WDI)
Inflation Rate (Annual%)	The rate at which prices of goods and services are raised within one year.	World Bank Indicators (WDI)
Foreign Direct Investment (Net inflow)	The total money comes from foreign investors when starting or expanding a business.	World Bank Indicators (WDI)

3.3 Vector Error Correction Model (VECM)

The Vector Error Correction Model (VECM) is a kind of econometric theorizing that investigates the short-run and long-run analysis of relations among different variables over time. The Vector Error Correction Model (VECM) is ideal in examining the economy of Pakistan since it captures not only short-term fluctuations but also the long-term aspect of the economy, besides being able to see the factors that might not be evident at first sight (Lutkepohl, 2005). This method of modeling is perfect since it does not simply measure the fluctuations over time between the variables, but also takes into consideration the fact that there will be an equilibrium level that the variables will be undergoing.

First of all, we test the stationarity of the data by means of the Augmented Dickey-Fuller (ADF) test before running the Vector Error Correction Model (VECM) test. This studies the invariance of the statistical properties of a variable, e.g., the mean and the variance of a variable over time. When the result is found to be non-stationary at a level, then we proceed to repeat the test by measuring the initial difference of a variable. In this research, we are using the ADF test at a significance level of 5 percent, which means that there is a variable that is termed as stationary when the p-value is below 0.05. This step will make our model work with reliable data, avoiding misleading statistical findings. It is also required to prevent spurious regression findings, which may happen when non-stationary data are not appropriately used in conventional regression models.

However, even though there are many econometric models used in time series analysis, the Vector Error Correction Model (VECM) is most useful whenever the co-integration of variables is the case. The term co-integration refers to a scenario under which two or more variables evolve together over time, implying that they feature a similar current

trend in the long term, even though they may vary in the short term. Noting that GDP, inflation, foreign direct investment, and trade are some of the variables that are bound to exhibit such a long-run relationship, in this study, the Vector Error Correction Model (VECM) will be more accurate and appropriate (Johansen, 1988). Once there is stationarity, we test whether the variables are stable. To test the long-term relationship, we use the Johansen co-integration test.

This analysis finds out whether GDP, trade, inflation statistics, and FDI display cooperation over time, notwithstanding any short-term fluctuations. We use lag length criteria such as the Akaike Information Criterion (AIC) and Likelihood Ratio (LR) to ensure the accuracy of the models. These methodologies are applied to determine the co-integration analysis using lag 1. Such a strategy will ensure that both long-run dynamics and short-run alterations are adequately reflected in the VECM model. What is good about VECM is that it not only captures short-run adjustments but also fits long-run equilibrium paths, which is realized through the commanding of error correction terms in the model. The error correction term (ECT) assesses the velocity at which the deviations of the long-run equilibrium are rectified. In other words, when a shock constricts the GDP to move out of the long-term correlation with either trade or FDI, the ECT indicates the rate at which the system can revert to equilibrium. In addition, the VECM enables us to investigate causality, which could be short-term or long-term. To give an example, we may explore whether trade leads to or causes an increase in GDP, whether FDI has an impact on inflation, and whether an increase in inflation leads to or causes an increase in trade openness.

These conclusions provide a good, elaborate image of the interaction of macroeconomic variables within Pakistan's economic development model. To sum up, VECM is not merely a technical model but a strategic analytical device as well because it enables researchers to investigate intricate interdependencies through time. The Vector Error Correction Model (VECM) can be used due to the nature of variables and long-run connection estimates expected, and the results of such a study can be treated as more reliable and easier to interpret.

3.4 Model Specification

This study will explore the dynamic links between Gross Domestic Product (GDP), trade (% of GDP), Foreign Direct Investment (FDI), and inflation in Pakistan in the period of 1985 to 2023 through the Vector Error Correction Model (VECM). The VECM fits exceptionally well in data where the variables are non-stationary at levels. Still, these variables become stationary once they are adjusted by taking their differences, and, more

critically, the data are co-integrated, which implies that there exists a long-run equilibrium relationship between the variables.

The VECM is a model that consists of two essential elements:

1. A long-run co-integration equation, which captures the stable, long-term relationship among the variables.
2. A set of short-run dynamic equations, known as error correction models (ECMs), which describe how each variable responds to short-term shocks while adjusting toward the long-run equilibrium.

3.4.1 Long-Run Relationship (Co-integration Equation)

The Johansen co-integration test confirms that a statistically significant long-run relationship exists among GDP, Trade, FDI, and Inflation. This means that these variables tend to move together over time, even though each may fluctuate individually in the short run. The estimated long-run equation can be written as;

$$\text{GDP}_{t-1} = \beta_0 + \beta_1 \cdot \text{Trade}_{t-1} + \beta_2 \cdot \text{FDI}_{t-1} + \beta_3 \cdot \text{Inflation}_{t-1} + \epsilon_t$$

In this equation:

1. GDP_{t-1} is the lagged value of GDP (used to represent long-term influence).
2. β_0 is the constant term.
3. β_1 , β_2 , and β_3 are long-run coefficients that measure how Trade, FDI, and Inflation affect GDP over time.
4. ϵ_t is the residual term, capturing the deviation from the long-run equilibrium.

The above equation allows us to understand how each macroeconomic factor, i.e., international trade, foreign investment, and inflation, contributes to long-term GDP growth in Pakistan. A positive and significant coefficient for FDI would suggest that an increase in FDI is associated with higher GDP in the long run. On the other hand, a negative inflation coefficient could imply that rising inflation erodes economic output over time by increasing production costs and reducing investment. The presence of co-integration is vital because it validates the use of VECM rather than a standard VAR model. Without co-integration, a VAR with initial differences would suffice, but it would ignore long-run dynamics, thereby offering a limited view of the economic system.

3.4.2 VECM Short-Run Equations (Error Correction Form)

The second part of the model captures short-term adjustments. These error correction models (ECMs) indicate how quickly each variable returns to equilibrium after

a deviation. After the confirmation of co-integration, we estimate the short-run adjustments using the VECM structure. The equation below illustrates how each variable responds to changes in the others while also addressing long-run imbalances. The general form of these equations is shown below:

$$1. \Delta \mathbf{GDP}_t = \alpha_1 + \gamma_{11} \cdot \Delta \mathbf{GDP}_{t-1} + \alpha_{312} \cdot \Delta \mathbf{Trade}_{t-1} + \gamma_{13} \cdot \Delta \mathbf{FDI}_{t-1} + \gamma_{14} \cdot \Delta \mathbf{Inflation}_{t-1} + \lambda_1 \cdot \mathbf{ECT}_{t-1} + \varepsilon_{1t}$$

$$2. \Delta \mathbf{Trade}_t = \alpha_2 + \gamma_{21} \cdot \Delta \mathbf{GDP}_{t-1} + \gamma_{22} \cdot \Delta \mathbf{Trade}_{t-1} + \gamma_{23} \cdot \Delta \mathbf{FDI}_{t-1} + \gamma_{24} \cdot \Delta \mathbf{Inflation}_{t-1} + \lambda_2 \cdot \mathbf{ECT}_{t-1} + \varepsilon_{2t}$$

$$3. \Delta \mathbf{FDI}_t = \alpha_3 + \gamma_{31} \cdot \Delta \mathbf{GDP}_{t-1} + \gamma_{32} \cdot \Delta \mathbf{Trade}_{t-1} + \gamma_{33} \cdot \Delta \mathbf{FDI}_{t-1} + \gamma_{34} \cdot \Delta \mathbf{Inflation}_{t-1} + \lambda_3 \cdot \mathbf{ECT}_{t-1} + \varepsilon_{3t}$$

$$4. \Delta \mathbf{Inflation}_t = \alpha_4 + \gamma_{41} \cdot \Delta \mathbf{GDP}_{t-1} + \gamma_{42} \cdot \Delta \mathbf{Trade}_{t-1} + \gamma_{43} \cdot \Delta \mathbf{FDI}_{t-1} + \gamma_{44} \cdot \Delta \mathbf{Inflation}_{t-1} + \lambda_4 \cdot \mathbf{ECT}_{t-1} + \varepsilon_{4t}$$

Where;

1. Δ denotes the change from the previous period.
2. α are intercept terms.
3. γ are coefficients for lagged differences (short-run effects).
4. $\mathbf{ECT}_{t-1}$ is the Error Correction Term, derived from the long-run equation.
5. λ values represent the speed of adjustment toward the long-run path.
6. ε is the error term (random shocks not explained by the model).

The ECT coefficient (λ) is essential. Its sign and significance tell us how fast and in what direction the variables adjust to correct disequilibrium. For example, suppose the λ coefficient in the $\Delta \mathbf{GDP}$ equation is negative and statistically significant. In that case, it means GDP will adjust downward in the short run to correct for a positive long-run imbalance. In this structure, we can read not only correlation but also causality. As one example, if the impact of $\Delta \mathbf{FDI}$ is large and significant in the short run on $\Delta \mathbf{GDP}$, it could be a sign of short-run causality between FDI and GDP. Also, Granger causality uses the VECM structure, which enables testing Granger causality, impulse response functions, and factor out the variance, which provides a better understanding of how shocks in one variable respond to the system in the future. To conclude briefly, it is possible to add that an elaborate model specification utilizing the VECM methodology offers a complete framework to study macroeconomic linkages in Pakistan. It is a good estimator, makes sense to researchers and policymakers, and respects the nature of data.

3.5 Scope and Limitations

This study examines the impact of international trade, inflation, and foreign direct investment (FDI) on economic growth in Pakistan between the period 1985 and 2023 while employing time series and the Vector Error Correction Model (VECM) analysis. It lays stress on key national indicators that include GDP, trade, inflation, and FDI in order to understand their impact on the economy. The study only gives realistic information on how to change the trade policy and investment strategies; however, it uses the secondary source information of the World Bank, which could be susceptible to missing information or recording mistakes. Moreover, the use of national-level data does not show variations within regions or sectors in the country.

Some limitations exist in the study. The model also does away with the possibility of considering other essential variables, such as government expenditure and currency rates, that can influence the results and give rise to omitted variable bias. The VECM holds that the relations between the variables are linear, irrespective of the intrinsic complexity of real-world economic phenomena. In addition to that, the model allows examining the Granger causality but does not prove the existence of genuine causation. Nevertheless, the research may form a firm basis of evidence-based decision-making, and it also reveals the possibility of even further study.

CHAPTER IV

RESULTS AND DISCUSSION

This chapter gives the findings of an analysis to determine the impact of international trade on Pakistan's economic growth. It shows the empirical result of the study to explain the associations between the variables in the context of Pakistan. The primary purpose of this study is to analyze the relationship between these variables and their interaction over time and determine whether there is a stable, long-term relationship between them to achieve economic planning and policy formulations. The analysis consists of annual time series data between 1985 and 2023, which enables the analysis to have a solid understanding of both past and current trends of the economy of Pakistan.

The given pattern of analysis is relatively well-organized in the sense of an econometric approach, beginning with descriptive statistics to offer an overall knowledge about the selected variables' behavior. This involves the study of means, variations, skew, and distribution characteristics. The next step is to check whether the data is stationary by applying the Augmented Dickey-Fuller (ADF) test, which helps determine whether the statistical attributes of variables are consistent throughout time. First, we will begin with basic statistics to describe data, and then we will examine whether the data is not moving through time by using unit root tests (Gujarati, 2002). Then we select the appropriate number of time lags to enter into the model and test whether the long-term relationship exists between the variables using the Johansen co-integration test (Johansen, 1988). After establishing a longer-term relationship, the Vector Error Correction Model (VECM) is employed in an endeavor to determine the long-term and short-term impacts of trade, FDI, and inflation on GDP. Finally, we also perform the final tests, such as the stability test and serial correlation test, to ensure that the model is also good and the outcomes are valid (Lütkepohl, 2005).

The diagnostic tests, including the stability test, serial correlation test, heteroscedasticity test, and normality test, have rendered the results of the Vector Error Correction Model (VECM) of the research statistically acceptable. The majority of the tests exceeded the typical level of significance ($p > 0.05$), which indicates that the model performs sufficiently and is reliable in the examination of the short-run and long-run associations among GDP, trade, inflation, and FDI. The lesser non-normality found in the residuals is a common feature in macroeconomic time series data and does not undermine the model's authenticity. These findings are logical, with similar studies conducted using the VECM approach in the context of developing economies. (Mugableh, 2015) found

reliable results in his analysis of trade openness and economic growth in Malaysia using VECM and Johansen co-integration techniques. Similarly, Kalu & Onyinye (also reported fair model diagnostics when examining FDI and GDP dynamics in Nigeria using time series analysis, and including this comparison with previous studies strengthens the credibility of our results and situates our analysis within a vast body of economic research.

4.1 Results

4.1.1 Descriptive Statistics

Foreign Direct Investment (FDI) has an average value of 9.04% of GDP, with a minimum value of 2.53% and a maximum of 30.77%, showing a wide range and high variation. Such a broad spread suggests that there were certain years where FDI significantly surged, possibly due to favorable policies, global interest in Pakistan's markets, or privatization initiatives. The standard of 5.49 further confirms the variability of FDI during this time. Also, the skewness of 1.84 and kurtosis of 7.82 show that FDI is not symmetrically distributed and has a sharp peak, suggesting a few extreme values or outlier years. The Jarque-Bera probability of 0.0000 confirms that FDI does not follow a normal distribution, which is common macroeconomic data due to shocks and irregular policy changes.

Inflation is relatively stable, with an average index value of 88.98. Inflation in this dataset is measured as a price index rather than the percentage change. The minimum inflation index is 82.60, and the maximum is 96.39, showing that the process remained relatively stable within a narrow band. The standard deviation of 3.78 is low, which reflects consistent inflation levels throughout the period. The skewness is near zero 0.003, and the kurtosis is 1.82, suggesting that inflation values are fairly normally distributed. The Jarque-Bera probability of 0.3227, which is greater than 0.05, supports this, indicating no significant deviation from normality. This stability is important because inflation often influences investment decisions and consumer confidence. Trade has an average value of 31.01%, meaning that trade, exports plus imports, constituted about one-third of the national output on average. The minimum trade value noticed was 21.46%, while the maximum was 38.50%, showing moderate variation over time. This shows Pakistan's economic openness and its participation in the global market. The standard deviation is 4.49, and the skewness is slightly negative, -0.33, indicating a minor leaning toward the lower values. The Jarque-Bera probability is 0.4104, suggesting that trade data is close to a normal distribution, which makes it suitable for regression analysis without transformation.

Lastly, the GDP growth rate value of 0.86% might appear low because the data likely represents real growth rate deviations or transformed data, not absolute GDP levels. The minimum growth is 0.31% and a high of 3.03%, which again shows that growth has been modest and fairly controlled, without significant spikes or crashes. However, the skewness value of 2.20 and kurtosis of 7.28 show that the GDP data is highly skewed and has a sharp peak, suggesting uneven economic performance over time. The Jarque-Bera probability p-value also confirms this is 0.000, indicating that the distribution is far from normal. Such patterns could be due to political instability, natural disasters, or global economic influences that impacted Pakistan's growth in specific years. The descriptive analysis reveals that FDI and GDP are highly variable and non-distributed, suggesting more volatility and potential influence from external shocks or policy shifts. On the other hand, Inflation and Trade appear more stable and normally distributed, which shows consistent patterns over time. These findings are significant because they help justify the need for advanced models like VECM, which can manage non-stationary and non-normally distributed data while capturing both long-term trends and short-run dynamics.

Table 4.1 Descriptive Statistics

	FDI	INFLATION (I)	TRADE	GDP
Mean	9.042482	88.98023	31.00903	0.863937
Median	8.837937	89.10837	32.31996	0.684695
Maximum	30.76813	96.38963	38.49932	3.035719
Minimum	2.529328	82.60073	21.45997	0.309595
Std. Dev.	5.490308	3.786461	4.496810	0.636297
Skewness	1.845171	0.029140	-0.335221	2.199477
Kurtosis	7.827682	1.821673	2.195979	7.284198
Jarque-Bera	60.00334	2.261756	1.780906	61.27087
Probability	0.000000	0.322750	0.410470	0.000000
Sum	352.6568	3470.229	1209.352	33.69354
Sum Sq. Dev.	1145.452	544.8169	768.4094	15.38521
Observations	39	39	39	39

Source: Author's compilation using Eview 12SV

4.1.2 Unit Root Test

At the 5% level of significance, the results indicate that GDP is stationary at the level since its p-value is 0.0263, which is less than 0.05. This means GDP is stationary in level form, and we don't need to transform it to make it stable over time. This is a positive

sign because it shows that GDP has consistent statistical properties and can be directly included in the model without differencing. The p-value at the level for Trade is 0.02924, which is higher than 0.05. This shows that trade is not stationary at the level, meaning its statistical properties change over time. However, when we take the first difference, the p-value drops to 0.0000, which is well below 0.05. This means that after differencing once, trade becomes stationary. In technical terms, Trade is said to be integrated of order one, written as $I(1)$. At the level, the p-value for FDI is 0.8688, which is much higher than the threshold. This indicates to us that FDI is clearly non-stationary in its real form. But again, after taking the difference, the p-value becomes 0.0003, which shows it becomes stationary. As with Trade, FDI is also $I(1)$. The p-value of Inflation is 0.4998, so it's not stationary. After taking the first difference, its p-value falls to 0.0000, making it stationary at first difference. Inflation also follows the $I(1)$. GDP is stationary at level $I(0)$, while trade, FDI, and inflation become stationary at first difference $I(1)$; this sequence supports the likelihood of co-integration among the variables. Therefore, we continue with lag length selection and the Johansen co-integration test to check long-run relationships. In short, these root results help us make sure the data is suitable for co-integration analysis and the VECM model, which we use in the following steps.

Table 4.2 Unit Root Test

5% level of significance		
Variable	In level	First difference
GDP	0.0263	-----
Trade	0.2924	0.0000
FDI	0.8688	0.0002
Inflation	0.4998	0.0000

Source: Author's compilation using Eview 12SV

4.1.3 Lag Length Selection

To run a time series model like VECM, it is necessary to choose how many past years (lags) to add in the analysis. This approach helps make the model more authentic and avoid wrong results. In this test, we used several popular methods to choose the best lag length, including the Likelihood Ratio (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), and Hannan-Quinn (HQ). From Table 4.3, we can see that all four criteria selected lag one as the best choice. The stars indicate this (*) next to the values

in the row of lag 1. It means that using one lag gives the best model fit for our data. So, we will use lag 1 in the further steps of our analysis.

Table 4.3 Lag Length Selection

Lag	Log L	LR	FPE	AIC	SC	HQ
0	-340.5971	NA	2423.169	19.14428	19.32023	19.20569
1	-257.6914	142.7820*	59.32434*	15.42730*	16.30703*	15.73435*
2	-245.7586	17.89919	77.09587	15.65326	17.23677	16.20595
3	-230.2080	19.87022	86.75853	15.67822	17.96553	16.47655

Source: Author's compilation using Eview 12SV

4.1.4 Johansen Cointegration Test

The aim of Table 4.4 is to check whether the key selected variables, i.e., GDP, Trade, FDI, and Inflation, are linked together in the long run, even if they might behave differently in the short term. For this, a test called the Johansen co-integration Test tells us if the variables move together over time, sharing a stable relationship. In time series analysis, when different variables are non-stationary, they can still have a long-term connection if they are co-integrated. This long-term connection helps us build a more accurate and meaningful model like the Vector Error Correction Model (VECM). Table 4.4 checks how many long-term relationships exist between the variables. It uses something called the Trace Statistic and compares it to a critical value. If the trace statistic is larger than the critical value, we reject the idea that no relationship exists and accept that there is co-integration.

After testing the assumption of no co-integrating relationship, the trace statistic is 86.79, which is much higher than the critical value of 47.85, and the p-value is 0.0000. This means we reject the idea that there is no co-integration, so at least one long-term relationship exists. The trace statistic is 52.49, again higher than the critical value of 29.79, and the p-value is again 0.0000. This confirms a second long-term relationship. In the third row, the trace statistic is 22.06, still above the critical value of 15.49, with a p-value of 0.0044. So, we find a third co-integration equation. Finally, the test for at most three co-integrating equations shows a trace statistic of 6.03, which is above the critical value of 3.84 and has a p-value of 0.0140. So, we reject the null hypothesis again and confirm that all four variables are co-integrated together. The results clearly tell us that GDP, Trade, FDI, and Inflation are strongly connected in the long term. Even though each variable might

behave differently in the short term, they tend to move together over time, showing that they share a common economic trend. This supports the use of the VECM model, which is designed to manage this kind of data.

Table 4.4 Johansen Cointegration Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistics	0.05 Critical Value	Prob.**
None *	0.614315	86.79288	47.85613	0.0000
At most 1 *	0.570639	52.49445	29.79707	0.0000
At most 2 *	0.359251	22.05795	15.49471	0.0044
At most 3 *	0.154311	6.033732	3.841465	0.0140

Source: Author's compilation using Eview 12SV

4.1.5 Vector Error Correction Model (long-run)

Table 4.5 presents the long-run cointegration equation, derived from the Johansen test. It shows the long-run equilibrium relationship between Pakistan's GDP (Y) and its determinants: Trade, Foreign Direct Investment (FDI), and Inflation (I), with a lag of one year for each variable. The coefficient for trade (-1) is -0.007292, which means that, in the long run, a 1-unit increase in trade (sd% % of GDP) is associated with a 0.007 decrease in GDP. The effect is economically negligible and statistically insignificant, as the t-statistic is -0.12841, far below the usual threshold of 2. This might reflect Pakistan's structural weaknesses, such as trade deficits, dependence on imports, and low-value exports, which fail to increase GDP sustainably in the long run. In short terms, while trade is usually seen as good for growth, it doesn't play a role in supporting GDP growth over the long term in this specific case.

Recent trade developments in Pakistan indicate a shift in policy focus toward export diversification and regional integration. Pakistan began the Strategic Trade Policy Framework (2020-2025), aiming to advance high-value exports such as pharmaceuticals, engineering goods, and information technology, moving beyond traditional textile exports (Ministry of Commerce, 2021). The "Make in Pakistan" initiative also seeks to reduce import dependency and boost local manufacturing. However, Pakistan's trade balance remains under pressure due to a high reliance on imported fuels and machinery, and exports are still concentrated in low-value products (State Bank of Pakistan, 2023). According to UNCTAD (2023), Pakistan's exports are vulnerable to global value chains. Additionally, regional trade underperformances, especially with neighbors like India, Afghanistan, and

Iran, reduce the growth potential that could be unlocked through better logistics, border infrastructure, and trade diplomacy (World Bank, 2023). These trends support our empirical finding that trade has not contributed significantly to long-run GDP growth, largely due to structural and policy limitations in the current trade system.

The FDI (-1) coefficient is 0.018500, showing a small positive effect, and it tells us how past foreign direct investment affects GDP growth. The positive sign indicates that FDI is linked to a slight increase in GDP over the long run. However, the t-statistic (0.26049) is very low, implying no statistical significance. Although FDI is expected to increase economic performance by bringing more capital, technology, and jobs, in this model, its long-term effects appear mild and not robust. This could be due to factors like inefficient investment use, political instability, poor infrastructure, and poor investment management, which may decrease the full benefit of FDI in Pakistan. The coefficient for Inflation I (-1) has a positive value of 0.060873, which suggests that a 1-point increase in inflation may be associated with a 0.06 units increase in GDP, potentially showing mild inflation stimulating investing and consumption. Yet again, the t-statistic is 1.28078, which is below the 2.0 threshold, making this effect not statistically significant. So, although the sign is positive, we cannot confidently claim a meaningful long-run relationship. The constant term (C) is -6.233673, which regulates the equation but does not affect the interpretation of the variables. So, the long-run equation suggests that these factors may not be critical for GDP in the long term, and we need to look at the short-run results to find more relevant relationships.

While the long-run coefficients give us insight, none of the relationships are statistically significant, meaning the model doesn't find long-term impacts of trade, FDI, or inflation on GDP. This doesn't mean these factors don't matter. Still, it suggests that their influence might be more visible in the short run, or that other variables (like political factors, exchange rate volatility, etc.) might play an essential role in shaping GDP over the long term in Pakistan.

The choice to focus on long-run relationships in this selected study is rooted in both methodological reasoning and the structural characteristics of Pakistan's economy. Short-run models can show quick responses to changes like oil price shifts or inflation spikes, but they often just capture random fluctuations that aren't useful for understanding long-term development. In contrast, long-run analysis through cointegration and VECM frameworks allows us to analyze persistent, equilibrium relationships that derive over time. These structural connections are particularly critical for a country like Pakistan, which

faces chronic macroeconomic challenges such as a weak industrial network, trade imbalances, more and more dependence on imported energy, and low-value exports.

The long-run analysis is very appropriate when economic responses are delayed due to institutional constraints, policy inertia, or market rigidities. For example, foreign direct investment may take years to show its impact on GDP through technology transfer or job creation, and trade reforms often take time to influence export diversification or balance of payments stability. Therefore, long-term models align better with the types of policy interventions required in Pakistan's context. Empirical evidence supports this orientation: many studies show that in developing countries, short-run effects of trade or FDI are either weak or insignificant, while long-run effects become more relevant as structural adjustments unfold over time. Long-run relationships also provide a more reliable basis for designing strategic interventions in education, infrastructure, governance, and industrial quantity, which requires continuity and cannot be guided by year-to-year fluctuations. Moreover, the focus on long-term dynamics adjusts with economic theory, particularly the structuralist and Keynesian perspectives which emphasize that growth in low- and middle-income countries is constrained not by cyclical variations alone but by deep-rooted structural weaknesses. As such, meaningful policy recommendations must rest on an understanding of how economic variables interact over extended periods. By using long-run estimations, this study offers more strategic insight into what reforms Pakistan needs, not just for recovery from short-term shocks, but for durable, inclusive growth.

To support the quantitative analysis and deepen the understanding of economic dynamics, a qualitative perspective is crucial, especially to uncover the structural and institutional challenges affecting trade and FDI in Pakistan. Plenty of studies highlight that Pakistan faces constant qualitative barriers such as regulatory inefficiencies, lack of transparency, and weak institutional capacity, which alter the potential long-run benefits of trade liberalization and foreign investment. For example, inconsistent policies, burdensome administrative procedures, poor contract enforcement, and corruption have been identified as major impediments to sustainable development and effective trade and investment utilization in Pakistan (M. Gul, 2013). Similarly, the lack of structural reforms and sectoral targeting in foreign direct investment decreases its development impact, especially in key sectors like energy and technology (Syed et al., 2011). Technical Barriers to Trade (TBTs) have also actually hampered Pakistan's trade volume due to non-tariff restrictions that increase the cost of doing business and limit the competitiveness of local exporters (Mustafa et al., 2020). These qualitative factors show that trade and FDI do not have a strong long-term effect in our economic model, meaning that without fixing these structural

problems, simply increasing trade volume or FDI will not lead to lasting GDP growth. Therefore, future policy frameworks should incorporate both macroeconomic indicators and qualitative reforms to generate a holistic and impactful development strategy.

Table 4.5 Vector Error Correction Model (Long Run)

Cointegrating Eq:	CointEq 1
Y(-1)	1.000000
TRADE(-1)	-0.007292 (0.05679) [-0.12841]
FDI(-1)	0.018500 (0.07102) [0.26049]
I(-1)	0.060873 (0.04753) [1.28078]
C	-6.233673

Source: Author's compilation using Eview 12SV

4.1.6 Vector Error Correction Model (short-run)

The short-run equation for GDP includes the error correction term (ECT), which is -0.353891, and statistically significant (t-value=-3.86). This figure means that the value -0.35 implies that about 35% of last year's imbalance is corrected in the present year, confirming that the result is statistically significant, meaning we can trust it. It means that GDP is responsive and works to fix itself after short-term shocks or imbalances. It proves that the system is stable and adjusting properly. In simple words, we can say that: If there's a shock to the economy, like a drop in FDI or sudden inflation, GDP will start adjusting in the next year, slowly moving back to its balanced path. This is a healthy sign and shows that GDP acts like an anchor in the economy. In the trade equation, the ECT is not statistically significant, which means trade doesn't play a strong role in correcting deviations from the long-run equilibrium in the short term. This could be because trade in Pakistan is often affected by external factors like global demand, exchange rates, and international agreements, so its ability to self-correct in the short term is limited. Another reason might be trade policy uncertainty or structural issues, such as reliance on imports or low-value exports, which make trade less reactive in the short term.

The error correction term in the FDI equation is also not statistically significant, meaning that foreign direct investment doesn't adjust quickly to correct economic imbalances. This makes sense because FDI is not a fast-moving variable. Investors take time to react to changes; they wait, observe, and make decisions slowly. So, it's very accurate and natural that FDI doesn't jump in to fix the economy in the short term. Instead, it's more of a long-term growth tool. Similar to trade and FDI, inflation also does not show a significant error correction effect in the short term. Inflation can be driven by many things, like food prices, monetary policy, or exchange rates, many of which are outside the immediate control of the system. Because of this, inflation in Pakistan seems to be more volatile and less tied to economic corrections, especially in the short run. In simple words, we can see that GDP is the only variable that shows a substantial and significant short-run adjustment back to the long-run balance. This is a good sign for the stability of the economic system. Trade, FDI, and Inflation do not significantly correct short-term deviation, showing they might be influenced more by external or structural factors than by internal dynamics. The results show that GDP acts as the primary driver of equilibrium in Pakistan's economy in the short term, while other variables move more slowly or less predictably.

Similar findings agree with economic theory, especially the Keynesian and structuralist views, which say that in developing countries like Pakistan, some factors like trade, FDI, and inflation take longer to change in the short term because of barriers related to institutions, outside influences, or the structure of the economy. The fact that GDP shows significant short-run adjustments supports the concept that domestic output responds more easily to economic shocks, playing an anchoring role in stabilizing the system. The impression has been observed in several empirical studies. FDI and GDP had positive and significant effects in the short run, while inflation and trade openness were either insignificant or less responsive (Umer & Alam, 2013). Similarly, recent work by (U. Ahmed & Muzammil, 2024) indicated that trade and FDI are often formed by external forces such as global demand or investor sentiment, making them slower to react to domestic imbalances. This study found no short-run causality between trade or FDI and GDP but observed strong long-term connections.

Inflation's insignificant adjustment effect is also well supported. A study by (Naz et al., 2015) points out that inflation negatively impacts GDP, but its dynamics are unstable and driven by multiple exogenous shocks, which make short-term predictability difficult. The basic message across these findings is that Pakistan's economy tends to depend on GDP growth as a self-correcting force, while trade, FDI, and inflation are more inertial,

adjusting either slowly or in response to global factors. These dynamics fit with the Vector Error Correction Model (VECM) theory, which anticipates that only some variables will show short-run correction depending on their role in the economic structure and the speed at which they respond to shocks. Trade openness significantly impacts GDP both in the short and long run; foreign direct investment (FDI) had only an insignificant effect in the short run. Inflation was found to harm GDP. These findings support our results that GDP adjusts faster in the short run, while FDI and inflation are more insignificant in their short-run influence (Safdar et al., 2021). (Awan & Waqas, 2023) also confirmed a short-run relationship among GDP, trade, and FDI using a Johansen cointegration technique. While FDI and trade had a positive effect, inflation showed a negative link. This aligns with our findings that GDP is the most responsive variable in the short term, whereas trade and FDI take longer to reflect adjustments due to structural or external constraints.

As the regression results affirm that GDP in Pakistan significantly adjusts toward long-term equilibrium, with an error term of -0.35, suggesting that approximately 35% of previous years imbalance is corrected each year. This proposes that GDP acts as a settling force in the economy, immediately responding to short-term shocks such as increased inflation or declines in investment. This result aligns with New trade Theory (NTT) perspectives, which affirm the responsiveness of domestic output and the role of internal economic forces in captivating shocks. It also supports the trade liberalization theory, which focuses the positive effects of market openness on growth, provided that the domestic economy is able of self-adjustment. Trade, FDI, and inflation are not significant in short-run, trade's weak response is likely due to external dependencies, limited export diversification, and structural issues, which reflects the dependency theory argument that developing countries Pakistan remain vulnerable due to their reliance on primary exports and global market conditions. FDI also lags in short-run adjustment because investment decisions are typically long-term and determined by global investor confidence and institutional strength. Inflation's volatility, driven by food prices and monetary policy, further supports the idea that not all macroeconomic variables react immediately, as expected under VECM theory.

Table 4.6 Vector Error Correction Model (Short Run)

Error Correction:	D(Y)	D(TRADE)	D(FDI)	D(I)
CointEq1	-0.353891 (0.09148) [-3.86850]	0.203581 (0.89084) [0.22853]	-0.310031 (1.29415) [-0.23956]	0.620828 (0.45770) [1.35642]
D(Y(-1))	0.595071 (0.15886) [3.74585]	2.420999 (1.54700) [1.56496]	-1.634083 (2.24738) [-0.72711]	1.093164 (0.79482) [1.37536]
D(Y(-2))	-0.091116 (0.16175) [-0.56330]	-0.017794 (1.57518) [-0.01130]	3.193913 (2.28831) [1.39575]	0.051783 (0.80930) [0.06399]
D(TRADE(-1))	0.015576 (0.02539) [0.61342]	-0.318812 (0.24727) [-1.28935]	0.444078 (0.35921) [1.23626]	-0.145669 (0.12704) [-1.14664]
D(TRADE(-2))	-0.002295 (0.02266) [-0.10128]	-0.128313 (0.22066) [-0.58149]	0.170148 (0.32056) [0.53078]	-0.106433 (0.11337) [-0.93880]
D(FDI(-1))	-0.007046 (0.01716) [-0.41067]	0.230043 (0.16708) [1.37688]	-0.121739 (0.24272) [-0.50157]	-0.109272 (0.08584) [-1.27297]
D(FDI(-2))	0.041726 (0.02201) [1.89606]	0.386421 (0.21430) [1.80318]	-0.358759 (0.31132) [-1.15238]	0.130691 (0.11010) [1.18698]
D(I(-1))	0.012057 (0.03846) [0.31351]	-0.370474 (0.37450) [-0.98926]	-0.163594 (0.54404) [-0.30070]	-0.231994 (0.19241) [-1.20573]
D(I(-2))	0.076118 (0.03473) [2.19160]	-0.182512 (0.33822) [-0.53963]	-0.095472 (0.49134) [-0.19431]	-0.314859 (0.17377) [-1.81193]
C	-0.000268 (0.05307) [-0.00505]	-0.206830 (0.51683) [-0.40019]	0.860563 (0.75082) [1.14616]	0.276190 (0.26554) [1.04011]

Source: Author's compilation using Eview 12S

4.2 Residual Diagnostic Test

The residual diagnostic test is one of the most critical steps in verifying whether a time series model, such as the Vector Error Correction Model (VECM) used in this study, is acting correctly over time. Specifically, in this section, we are interested in testing the stability of the system, meaning whether the model's results are dependable and consistent when subjected to real-world fluctuations in economic indicators like GDP, trade, FDI, and inflation.

4.2.1 Stability Check (i)

In Table 4.7, we test for stability; our primary focus is on the characteristic roots of the VECM. These roots are derived from the mathematical structure of the model. Each root has a corresponding modulus, which is simply the size or magnitude of the root. In

other words, for a model to be considered stable, all of these moduli must be less than 1. All the roots and their modulus are listed. The modulus values range from 0.301 to 0.901, and none of them cross the threshold of 1. In simple words, no matter what economic shock occurs, the model will respond to it and eventually return to a stable path. The values are not even close to the critical value of 1. The highest modulus in this model is 0.901818, which still leaves a good margin for comfort. This shows a strong level of confidence in the model's ability to perform well under varied conditions.

This result is significant for a study dealing with macroeconomic data from a developing country like Pakistan. Developing economies often face frequent shocks, i.e., political, fiscal, monetary, or external trade-related. In such a situation, a stable model gives us a powerful tool to predict, understand, and react to changes in economic policy or global trends because this VECM passed the stability check.

Table 4.7 Stability Check

Root	Modulus
$0.898812 - 0.073569i$	0.901818
$0.898812 + 0.073569i$	0.901818
$0.544312 - 0.497534i$	0.737438
$0.544312 + 0.497534i$	0.737438
$0.537788 - 0.191053i$	0.570716
$0.537788 + 0.191053i$	0.570716
$-0.235081 - 0.18909i$	0.301693
$-0.235081 + 0.18909i$	0.301693

Source: Author's compilation using Eview 12SV

4.2.2 Stability boundary test (ii)

Figure 4.1 (ii) effectively illustrates the stability test for the Vector Error Correction Model (VECM), with the dots signifying the model's roots and the circle serving as the stability boundary. Since all the dots are inside the circle, the model satisfies the condition for stability in Figure 4.1 If the root's modulus is less than 1, its dot will appear on or outside the circle, indicating instability. In our case, all the dots are located neatly inside the circle, meaning that all the characteristic roots of the VECM fall inside the

stability boundary. This visual outcome aligns perfectly with the numeric results in Table 4.7 (i) and provides an easy-to-read confirmation of the model's stable nature.

So, the combination of Figure 4.1 (ii) and Table 4.7 (i) provides a strong foundation to move forward in our study. The result clearly indicates that the VECM model used in this research is statistically stable and reliable. This adds significant value to the findings in earlier parts and ensures that further interpretation, such as policy recommendations or theoretical contributions, rests on a solid methodological base.

Inverse Roots of AR Characteristic Polynomial

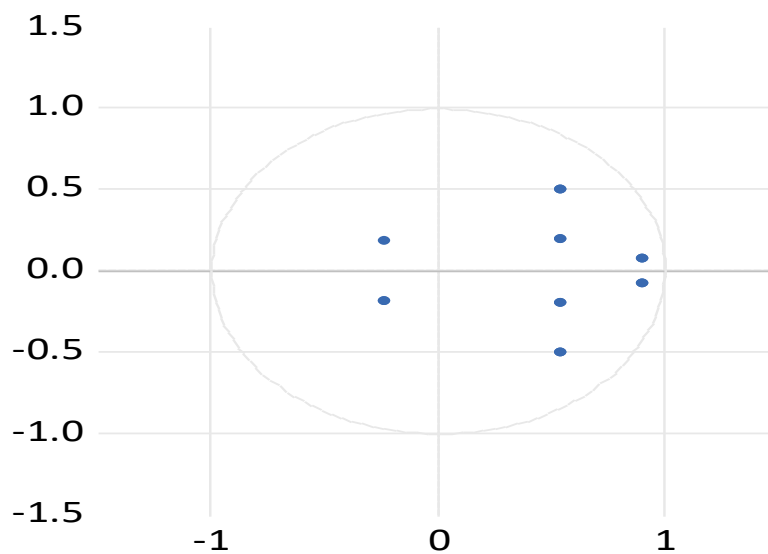


Figure 4.1 Stability boundary test (ii)

Source: Author's compilation using Eview 12SV

4.3 Serial Correlation

The next step is to make sure that the model's residuals, the errors or unexplained parts, are not related to each other over time. That's why we test in Table 4.8, known as the Serial Correlation Test. In time series analysis, serial correlation means that the errors from one-time period are connected to the errors in another period. Thinking of it like this: if today's error predicts tomorrow's error, then the model has serial correlation. This is a problem because the model does not fully contain all the patterns in the data. When serial correlation is present, the assumptions of classical regression models are violated, and the results of the model might be biased or inefficient. It helps us to ensure the accuracy of the conclusions drawn from the model. We run the Lagrange Multiplier (LM) test to check

serial correlation at lag 1. The LM test checks whether the residuals from the model are independent of each other over time. Here are the key parts of the table:

LRE* stat is the value of the test. In our case, it is 21.14377. The degree of freedom (df) shows the number of independent pieces of information used in the test; here it is 16. The probability is the most essential part of our test. It tells us whether we should reject the assumption that there is no serial correlation. In our case, the p-value is 0.1731, which is greater than 0.05, and is used in most statistical tests. A high p-value means we do not reject the null hypothesis, which, in this test, means that there is no serial correlation. So this is a good result. Table 4.8 also shows a Rao F-statistic, which is another way to confirm the same conclusion. The associated p-value is 0.1773, again greater than 0.05, providing us further reassurance. Passing the serial correlation test means our results are less likely to be the result of hidden patterns in the data. It helps strengthen our findings and ensures that any conclusions or policies suggested based on this model are valid and widely acceptable.

Table 4.8 Serial Correlation

Lag	LRE*stat	df	Prob.	Rao F- stat	df	Prob.
1	21.14377	16	0.1731	1.392824	(16,58.7)	0.1773

Source: Author's compilation using Eview 12SV

4.4 Heteroscedasticity

Heteroscedasticity means that the spread or variability of the errors in our model changes over time. Ideally, we want the errors to have a constant variance, which is called homoscedasticity. But suppose the errors vary a lot at some points and are smaller at others. In that case, it can distort the results, leading to inaccurate standard errors, unreliable test statistics, and ultimately misleading conclusions. Here in Table 4.4, the Chi-square statistic, which measures the test result. In our model, the value is 199.2750. The degree of freedom shows the complexity of the test, which is 180. The probability is the most important value; it tells us whether we should reject the null hypothesis.

We can see the p-value is 0.1547, which is greater than the 0.05 significance level. Therefore, we cannot reject the null hypothesis, which confirms that there is no heteroscedasticity in our model, which actually backs the accuracy of our results. The error terms have consistent variance across time, so the model is acting properly in this regard. In simple words, we can say: The models' errors are not getting bigger or smaller in

unpredictable ways, and there is no sign of uneven variation in the model's accuracy over time. So, we can trust the confidence intervals, hypothesis tests, and other statistical results that depend on consistent variance. By applying the heteroscedasticity test, our model demonstrates that it has handled these ups and downs well. This gives us more satisfaction to our academic readers, policymakers, or decision-makers who will rely on our findings.

Table 4.9 Heteroscedasticity

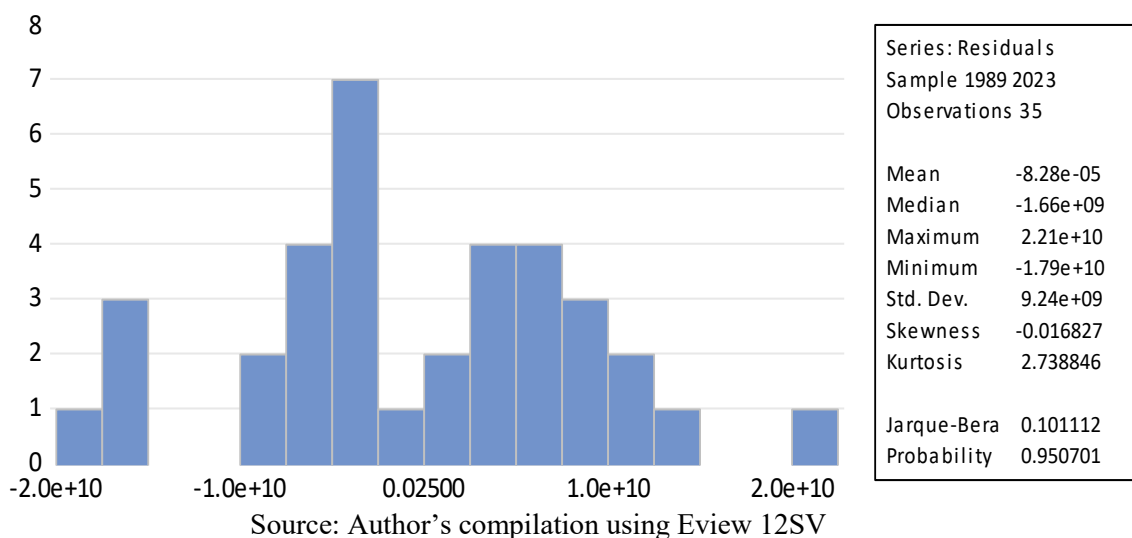
Joint test		
Chi-sq.	df	Prob.
199.2750	180	0.1547

Source: Author's compilation using Eview 12SV

4.5 Normality Test

In Table 4.10, the normality test checks whether our residuals (errors) from the model follow a normal distribution, which is necessary for the validity of many tests. In our case, the Jarque-Bera probability value is 0.950701, which is higher than 0.05, meaning we do not reject the null hypothesis of normality. The histogram looks symmetric, and the skewness and kurtosis values are close to those of a normal distribution. This indicates that the residuals are normally distributed, and the model satisfies the assumption of normality.

Table 4.10 Normality Test



4.6 Discussion

The data indicated a negligible negative coefficient of -0.007292 for trade in the long term, which was statistically insignificant. This outcome indicates that trade, in itself, did not significantly contribute to Pakistan's GDP over time. The discovery may initially appear unusual, as trade often fosters economic growth in any nation. This outcome is consistent with the findings of (Umer & Alam, 2013). They observed that trade openness may adversely impact industrial growth if not accompanied by local capacity enhancement and industrial advancement. Their findings indicated that trade liberalization in Pakistan led to a disproportionate rise in imports, while exports were confined to low-value items, hence undermining GDP growth potential. (H. Khan et al., 2017) also discovered that trade had mixed outcomes, emphasizing the necessity for more robust measures to enhance its benefits. One reason for this could be the slowed impact of trade on economic growth. The reward of trade reforms often take time to show, especially in countries like Pakistan where infrastructure and institutions are still unstable (Baldwin, 1997). Another possible reason is the type of products Pakistan exports. Most of Pakistan's exports are low-value goods. These do not bring as much economic benefit as high-tech or manufactured exports. Studies shows that countries with more advanced exports tend to grow faster (Hausmann et al., 2007). Consequently, we can figure out that trade openness in Pakistan is inadequate for growth unless accompanied by structural reforms, export diversification, and less dependence on imports. Additionally, Pakistan has faced many external shocks over the years such as energy crises, terrorism, and global market changes which may have weakened the positive effects of trade. These disruptions can make trade less stable and predictable (V. Ahmed & O'Donoghue, 2010).

The coefficient for FDI was 0.018500, indicating a small yet significant positive effect on GDP. Although foreign direct investment (FDI) is theoretically beneficial for the economy, its long-term effects in this context have been limited. This aligns with the findings of (Safdar et al., 2021), which indicated that foreign direct investment exerted little and small influence on Pakistan's GDP, maybe attributable to inadequate infrastructure, bureaucratic obstacles, or insufficient investor trust. Other research, such as (Gudaro et al., 2012), have affirmed that foreign direct investment (FDI) may be beneficial when well employed, particularly regarding technology and skills. In comparison, the positive role of FDI confirms that foreign direct investment helps bring money, technology, and business skills into the country, which holds long-term growth (Borensztein et al., 1998). In principle, foreign direct investment (FDI) is expected to generate capital, create employment opportunities, and facilitate the transfer of innovative technology. In contrast,

the circumstances in Pakistan seem to be distinct. In this context, Pakistan's challenge lies not only in attracting international investors but also in utilizing their capital to yield enduring advantages for the Pakistani economy.

However, inflation carries a positive coefficient of 0.060873, but it is statistically insignificant. Typically, severe inflation is seen harmful; but, moderate inflation may stimulate economic activity by promoting expenditure. It further suggests that inflation may correlate with a little increase in GDP over the long term. Although this assumption appears unreasonable, given inflation is frequently seen unfavorable it is consistent with some economic theories. Moderate inflation can stimulate consumption and investment, since individuals like to purchase immediately rather than defer when prices are anticipated to increase. The latest study by (U. Ahmed & Muzammil, 2024) indicates that low to moderate inflation might positively influence GDP, but excessive inflation induces instability. Still, the majority of research indicate an inverse correlation between inflation and GDP, particularly during periods of elevated and volatile inflation (Naz et al., 2015). In Pakistan, inflation appears to have a complex impact; it can be advantageous in moderate amounts but negative if it increases uncontrollably or becomes unstable. Our findings indicate that although moderate inflation may not be severely detrimental, it does not substantially contribute until controlled within a stable macroeconomic framework.

To achieve real benefits from international trade, Pakistan needs to make some necessary changes. First, Pakistan should focus on exporting a wide range of products instead of depending on a few low-value items. This approach will help increase earnings from trade. Also, Pakistan imports too much, which weakens the benefits of trade, so there is a need to lower the reliance on imports by supporting local industries. To control inflation is also an important factor. One way to do this is by keeping the exchange rate stable and making sure necessary imported goods do not become too expensive. Stable prices help create a better environment for business and investment. To attract more foreign direct investment (FDI), Pakistan should make it accessible to do business. The strategy includes reducing troublesome rules, improving infrastructure like roads and electricity, and making sure that investors feel safe and protected. If Pakistan strengthens FDI in areas that relate to trade, like manufacturing for export, then trade and FDI can work together to boost the economy.

CHAPTER V

CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Conclusion

The study examined the impact of trade, inflation, and foreign direct investment (FDI) on Pakistan's economic development from 1985 to 2023, employing the Vector Error Correction Model (VECM) to analyze both short-term and long-term dynamics along with Johansen co-integration techniques, the study has provided critical insights into how these variables interact both in the short and long run.

The descriptive statistics from Table 4.1 showed variability across the variables, especially in FDI and GDP. FDI ranged extensively between 2.53% and 30.77% of GDP, with a standard deviation of 5.49, suggesting it is volatile. Similarly, GDP growth showed a wide range of between 0.31% and 3.03%, with a skewed distribution. This variability is not just statistical noise; it shows Pakistan's economic journey, marked by political instability, inconsistent policy regimes, and changing global conditions. Trade, on the other side, was more stable with a mean of 31.01% of GDP, showing a moderate but consistent engagement with international markets. Inflation was between 82.60 and 96.39 (index values), with an average of 88.98, indicating a relatively stable pricing environment, although not without any concern.

The unit root tests in Table 4.2 were necessary in determining the proper econometric techniques. The results showed that while GDP was stationary at level ($p=0.0263$), the other variables became stationary only after first differencing, with values such as Trade ($p = 0.0000$) and FDI ($p = 0.0002$). This pattern confirms that these macroeconomic indicators are integrated of order one, $I(1)$, making them appropriate for co-integration analysis.

The Johansen co-integration test Table 4.4 showed statistically strong evidence of at least one co-integrating relationship among the selected variables. The trace statistics for the "None" hypothesis were 86.79, well above the critical value of 47.85, with a p -value of 0.0000, confirming a long-term equilibrium relationship exists. However, the long-run coefficients in Table 4.5 show a subtler story. The impact of trade was negative -0.0073, FDI showed a small positive effect of 0.0185. Inflation had a positive coefficient of 0.0609, but none of these values were statistically significant. The t -statistics for all coefficients were well below the threshold of 2. Suggesting that while the variables move together over time, their individual effects on GDP in the long run are weak or uncertain. This may point

to inefficiencies in how trade and FDI are utilized or to the presence of deeper structural challenges that dilute their benefits over time.

In contrast to the weak long-run effects, the short-run results in Table 4.6 were more revealing. The error correction term (ECT) for GDP was -0.3539 and statistically significant ($t = -3.86$). This indicates that about 35% of the disequilibrium in GDP from the previous year is corrected in the current year. This result is significant because it confirms that GDP is responsive and self-correcting in the short term, even if trade, FDI, and inflation are not directly influencing it strongly. This adjustment process shows that Pakistan's economy has short-term resilience. Despite other external shocks, the system moves back towards its long-term equilibrium at a measurable pace.

To further ensure the model is accurate, several diagnostic tests were applied: The stability test Table 4.7 showed all modulus values below 1, indicating a stable model. The serial co-integration test Table 4.8 produced a p-value of 0.1731, well above 0.05, indicating no autocorrelation in the residuals. The heteroscedasticity test Table 4.9 gave a joint p-value of 0.1547, which also exceeded 0.05, proving constant error variance across time. The normality test Table 4.10 shows that the Jarque-Bera probability value is 0.950701, which is higher than 0.05, so we do not reject the null hypothesis. The skewness and kurtosis values are close to normal distribution, this suggests that the residuals are normally distributed.

This chapter indicates that GDP in Pakistan is self-adjusting and stable in the short term; the long-term impact of trade, FDI, and inflation is limited or statistically weak. This could signal that simply increasing trade or attracting FDI is not enough; instead, these flows must be supported by effective institutions, policy formulation, regulatory reforms, and macroeconomic stability. Furthermore, the high volatility in FDI and the skewness in GDP reflect the broader economic instability that may be preventing these channels from yielding their full growth potential. Consequently, the policy findings in this study are derived not just from numerical significance but also from comprehensive economic theory and contextual facts. Despite the negative coefficient in the model, trade is nevertheless seen as a beneficial factor for growth because of its crucial function in enhancing market access and facilitating industrial learning. Conversely, inflation is regarded as detrimental due to its recognized adverse impacts on buying power and investor confidence, notwithstanding the model's negligible beneficial effect. Pakistan ought to enhance trade policies, modify pricing structures, and attract increased high-caliber investments. Only then can Pakistan establish a more robust and equitable economy for the future.

The findings of this research confirm that Pakistan's economy indicates a degree of short-run resilience, as seen in the GDP's ability to adjust after shocks. However, the long-run results report a deeper issue: structural weaknesses that actually limit the positive effects of trade, FDI, and inflation on sustained economic growth. This clearly offers that while the economy can stabilize temporarily, it struggles to generate meaningful long-term momentum. The slight long-run impacts indicate a pressing need for qualitative reforms, such as diversifying trade beyond low-value exports, improving the business climate to attract FDI, and strengthening institutional frameworks to create policy consistency. These improvements are not only necessary for enhancing variable effectiveness but also critical for unlocking Pakistan's long-term growth potential.

5.2 Policy Recommendations

Based on the empirical findings of this study, several policy recommendations are proposed to help Pakistan better harness the benefits of trade, foreign direct investment (FDI), and inflation management for sustained economic growth. Each of the policy recommendations is directly linked to the results from Chapter 4 to ensure relevance and practicality.

1. Promote High-Value Exports:

Given the study's finding that trade has a weak and statistically insignificant impact on GDP in the long run, it suggests that Pakistan's current export base may be limited to low-value or low-growth sectors, which are frequently influenced by fluctuations in the global market. To accelerate growth, Pakistan should transition toward the production and export of high-value commodities such as IT services, completed clothing, electronics, and processed food. Countries like Vietnam and Bangladesh have successfully upgraded their exports and boosted long-term growth through similar strategies. This goal may be achieved by assisting local firms through adequate training, improved technology access, financing for research and development, targeted investments in research and development (R&D), vocational training, and enhanced product packaging and quality. Given the conclusion that Pakistan's trading structure is deficient, this measure is essential for improving long-term economic growth.

2. Attract Quality Foreign Direct Investment (FDI), Not Just Quantity

Although FDI showed a positive relationship with GDP, the impact was not statistically significant. This implies that the quality and sectoral allocation of FDI may be

more important than just the quantity. Pakistan should focus on attracting FDI that brings technology transfer, skill development, and local industry linkages. For example, foreign investment in renewable energy, digital infrastructure, and advanced manufacturing can have long-term productivity benefits. The government should also improve the ease of doing business, streamline regulations, and offer sector-specific incentives to encourage strategic investment.

3. Ensure Stable and Predictable Inflation Management

In our study, inflation showed a positive long-run coefficient with GDP, but again, the effect was statistically insignificant. The government, in collaboration with the State Bank of Pakistan, should implement monetary, fiscal, and exchange rate policies designed to maintain inflation below the threshold. This technique involves adjusting interest rates in accordance with inflation trends, preventing excessive budget deficits, and ensuring effective exchange rate management. Particular emphasis must be placed on food and energy prices, as they directly impact low-income households. A stable pricing market could strengthen consumer welfare and augment investor confidence, fostering private sector expansion and foreign investment. A predictable inflation environment increases consumer confidence and makes the country more attractive to both local and foreign investors (World Economic Outlook - All Issues, 2023).

4. Strengthen Short-Term Economic Management

The error correction model showed that GDP adjusts to equilibrium fairly quickly. Even when trade, FDI, and inflation don't have strong long-run effects. This indicates that short-run management of the economy is effective and must be supported further. The government should increase its real-time data monitoring, forecasting systems, and fiscal flexibility to respond quickly to economic shocks, such as commodity price fluctuations or global financial shifts.

5. Improve Institutional and Structural Reforms

The limited impact of trade and FDI on GDP may also reflect institutional weakness, such as policy inconsistency, regulatory barriers, and lack of transparency. To unlock the full potential of economic openness, Pakistan needs deeper structural reforms, including better governance of trade and investment institutions, more vigorous contract enforcement, and anti-corruption measures. These reforms will increase investor trust and make economic relationships more productive.

All of these policies work together to help Pakistan grow in a strong and steady way. Making better exports helps reduce risk from global changes. Bringing in good-quality foreign investment adds skills, technology, and jobs to the local economy. Keeping inflation under control makes it easier for people to afford basic goods and helps businesses plan for the future. Handling the economy well in the short term helps the country recover faster from sudden problems like oil price increases or currency drops. Improving rules, reducing corruption, and making government policies more reliable builds trust with both local businesses and foreign investors. When these steps are taken together, they create a strong base for long-term development, turning Pakistan's economy from short-term survival to long-term success.

The above policy recommendations are not just random ideas; they are directly based on the results of this study and supported by economic theory. The data showed that GDP adjusts faster in the short run, but trade, FDI, and inflation do not have strong long-term effects due to deeper structural barriers. That's why the policies focus on fixing the real causes, like weak institutions, poor export quality, and unstable inflation. These suggestions also match with theories that say countries like Pakistan need strong government support, better planning, and long-term investment to grow. To make these ideas work, policymakers can use modern tools like data dashboards, planning software, or platforms that support real-time economic tracking and decision-making.

5.3 Limitations and Future Research Directions

Firstly, one major limitation is data availability and quality. Although the study uses data from a reputable source, the World Bank Indicators, macroeconomic data in developing countries like Pakistan can sometimes be inconsistent or subject to revision. There may be gaps in how accurately the data captures informal data, unrecorded capital inflows, or unofficial inflation dynamics, all of which are significant in countries with larger informal economies like Pakistan. Secondly, the study focuses only on four variables (GDP, trade, FDI, and inflation). While these are undoubtedly important, economic growth is affected by a broader range of factors, such as exchange rates, interest rates, political stability, human capital, labor market performance, infrastructure development, and technology adoption. The lack of inclusion of these variables can have restricted the modeling capability to explain the changes in the GDP throughout time.

Third, this model is based on linear relationships and time series methods, which might not completely target the nonlinear multi-dimensional interdependencies between economic variables. For example, FDI can only be effective in the case of good institutions, and trade can be more beneficial in the economy under a particular political regime. Such

subtle relationships cannot be effectively captured in a Vector Error Correction Model (VECM) unless the extra facilities, such as the threshold model or structural break analysis in the AVEC Model, are applied. Another limitation lies in the focus on Pakistan as a single-country case. While this offer has profound contextual relevance, it limits the generalizability of the findings. What applies to Pakistan may not necessarily apply to other countries with different institutional capacities, economic structures, or historical backgrounds. Comparative studies involving other South Asian or developing economies could provide an extended understanding of regional patterns.

Lastly, while the study was able to confirm cointegration and identify meaningful short-run adjustments, the long-run coefficients were statistically insignificant. This could either reflect real-world inefficiencies or could be a limitation of the sample size and the chosen period. Including more recent post-2023 data in the future could improve the strength of these estimations and provide insights into how current global changes affect Pakistan's economy.

For future research purposes, there are several ways someone can extend and enrich the findings of this study;

Firstly, future researchers should consider increasing the number of explanatory variables. Including additional variables like exchange rates, interest rates, unemployment levels, education, and infrastructure spending could help draw a more complete picture of what drives Pakistan's GDP. The addition of more indicators, such as corruption levels, governance scores, or judicial efficiency, would be especially valuable in understanding the deeper structural barriers to growth. Secondly, using more advanced econometric models could offer wider insights. For example, researchers could use ARDL (Autoregressive Distributed lag models), structural VARs (Vector Autoregressive models), or non-linear models like threshold regression to uncover conditional relationships. This could help determine if trade or FDI only promotes growth when certain thresholds of inflation, political stability, or education are met.

Thirdly, sectoral or regional analysis can be a wider extension. Rather than looking at the national economy as a whole, further studies could analyze how trade and FDI impact specific sectors like agriculture, manufacturing, or services. Similarly, examining how different provinces in Pakistan experience economic changes can reveal disparities and highlight where targeted policy is most required. Additionally, cross-country studies involving other developing economies with similar macroeconomic profiles could be conducted. Comparing Pakistan's performance with countries like Bangladesh, Sri Lanka,

or Vietnam could help identify the best policies and strategies that have worked elsewhere but have not yet been adopted in Pakistan.

Lastly, future studies could incorporate qualitative or mixed-methods approaches. Interviews with policymakers, business owners, and trade experts can add context to the quantitative findings and help understand why certain variables may not be performing as expected, even if theory suggests otherwise.

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APPENDICES

Appendix 1 Descriptive statistics

	FDI	I	TRADE	Y
Mean	9.042482	88.98023	31.00903	0.863937
Median	8.837937	89.10837	32.31996	0.684695
Maximum	30.76813	96.38963	38.49932	3.035719
Minimum	2.529328	82.60073	21.45997	0.309595
Std. Dev.	5.490308	3.786461	4.496810	0.636297
Skewness	1.845171	0.029140	-0.335221	2.199477
Kurtosis	7.827682	1.821673	2.195979	7.284198
Jarque-Bera	60.00334	2.261756	1.780906	61.27087
Probability	0.000000	0.322750	0.410470	0.000000
Sum	352.6568	3470.229	1209.352	33.69354
Sum Sq. Dev.	1145.452	544.8169	768.4094	15.38521
Observations	39	39	39	39

Appendix 2 Unit root test

5% level of significant		
Variable	In level	First difference
GDP	0.0263	-----
Trade	0.2924	0.0000
FDI	0.8688	0.0002
Inflation	0.4998	0.0000

Appendix 3 Lag length selection

VAR Lag Order Selection Criteria
 Endogenous variables: FDI I TRADE Y
 Exogenous variables: C
 Date: 02/04/25 Time: 16:56
 Sample: 1985 2023
 Included observations: 36

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-340.5971	NA	2423.169	19.14428	19.32023	19.20569
1	-257.6914	142.7820*	59.32434*	15.42730*	16.30703*	15.73435*
2	-245.7586	17.89919	77.09587	15.65326	17.23677	16.20595
3	-230.2080	19.87022	86.75853	15.67822	17.96553	16.47655

Appendix 4

Johansen cointegration test

Date: 02/04/25 Time: 17:07
Sample (adjusted): 1988 2023
Included observations: 36 after adjustments
Trend assumption: Linear deterministic trend
Series: D(FDI) D(I) D(TRADE) D(Y)
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.614315	86.79288	47.85613	0.0000
At most 1 *	0.570639	52.49445	29.79707	0.0000
At most 2 *	0.359251	22.05795	15.49471	0.0044
At most 3 *	0.154311	6.033732	3.841465	0.0140

Appendix 5

Vector error correction model (long-run)

Vector Error Correction Estimates
Date: 02/04/25 Time: 17:18
Sample (adjusted): 1988 2023
Included observations: 36 after adjustments
Standard errors in () & t-statistics in []

Cointegrating Eq:	CointEq1
Y(-1)	1.000000
TRADE(-1)	-0.007292 (0.05679) [-0.12841]
FDI(-1)	0.018500 (0.07102) [0.26049]
I(-1)	0.060873 (0.04753) [1.28078]
C	-6.233673

Appendix 6
Vector error correction model (short-run)

Error Correction:	D(Y)	D(TRADE)	D(FDI)	D(I)
CointEq1	-0.353891 (0.09148) [-3.86850]	0.203581 (0.89084) [0.22853]	-0.310031 (1.29415) [-0.23956]	0.620828 (0.45770) [1.35642]
D(Y(-1))	0.595071 (0.15886) [3.74585]	2.420999 (1.54700) [1.56496]	-1.634083 (2.24738) [-0.72711]	1.093164 (0.79482) [1.37536]
D(Y(-2))	-0.091116 (0.16175) [-0.56330]	-0.017794 (1.57518) [-0.01130]	3.193913 (2.28831) [1.39575]	0.051783 (0.80930) [0.06399]
D(TRADE(-1))	0.015576 (0.02539) [0.61342]	-0.318812 (0.24727) [-1.28935]	0.444078 (0.35921) [1.23626]	-0.145669 (0.12704) [-1.14664]
D(TRADE(-2))	-0.002295 (0.02266) [-0.10128]	-0.128313 (0.22066) [-0.58149]	0.170148 (0.32056) [0.53078]	-0.106433 (0.11337) [-0.93880]
D(FDI(-1))	-0.007046 (0.01716) [-0.41067]	0.230043 (0.16708) [1.37688]	-0.121739 (0.24272) [-0.50157]	-0.109272 (0.08584) [-1.27297]
D(FDI(-2))	0.041726 (0.02201) [1.89606]	0.386421 (0.21430) [1.80318]	-0.358759 (0.31132) [-1.15238]	0.130691 (0.11010) [1.18698]
D(I(-1))	0.012057 (0.03846) [0.31351]	-0.370474 (0.37450) [-0.98926]	-0.163594 (0.54404) [-0.30070]	-0.231994 (0.19241) [-1.20573]
D(I(-2))	0.076118 (0.03473) [2.19160]	-0.182512 (0.33822) [-0.53963]	-0.095472 (0.49134) [-0.19431]	-0.314859 (0.17377) [-1.81193]
C	-0.000268 (0.05307) [-0.00505]	-0.206830 (0.51683) [-0.40019]	0.860563 (0.75082) [1.14616]	0.276190 (0.26554) [1.04011]

Appendix 7

Residual diagnostic test

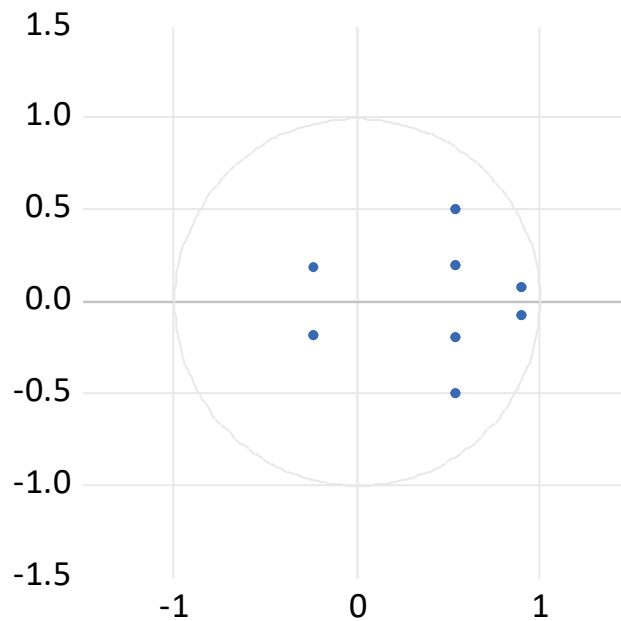
Roots of Characteristic Polynomial
 Endogenous variables: FDI I TRADE Y
 Exogenous variables: C
 Lag specification: 1 2
 Date: 02/04/25 Time: 17:25

Root	Modulus
0.898812 - 0.073569i	0.901818
0.898812 + 0.073569i	0.901818
0.544312 - 0.497534i	0.737438
0.544312 + 0.497534i	0.737438
0.537788 - 0.191053i	0.570716
0.537788 + 0.191053i	0.570716
-0.235081 - 0.189091i	0.301693
-0.235081 + 0.189091i	0.301693

Appendix 8

Stability Boundary Test

Inverse Roots of AR Characteristic Polynomial



Appendix 9

Serial correlation

Lag	LRE*stat	df	Prob.	Rao F- stat	df	Prob.
1	21.14377	16	0.1731	1.392824	(16,58.7)	0.1773

Appendix 10 Heteroscedasticity

Joint test:

Chi-sq	df	Prob.
199.2750	180	0.1547

Appendix 11 Normality test

