

A Study On The Impact Of Foreign Direct Investment On The Economic Growth Of SAARC Countries

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Abstract: Foreign direct investment (FDI) is an important factor in the economic development of any country. Many factors affect the growth rate of the national economy due to FDI. When FDI enters the host country, it generates a large number of business opportunities. The employment opportunities for employees in the host country will also increase, thereby reducing the unemployment rate and ultimately increasing its GDP growth rate. By obtaining foreign investment, enterprises can expand their business to various parts of the world, and infrastructure in different fields will also be developed, all of which will affect economic expansion. Therefore, this article conducted a study to determine the impact of FDI on the economic growth of the South Asian Association for Regional Cooperation countries.

This article first analyzes the current characteristics of FDI and economic growth in SAARC countries. Research has found that FDI and GDP growth in SAARC countries vary. India's FDI peaked at \$64.66 billion in 2020 and then declined. In 2022, FDI in Bangladesh and Afghanistan increased to \$1.56 billion and \$13 billion respectively. Sri Lanka, Pakistan, and Nepal decreased to \$1.08 billion, \$1.34 billion, and \$95 billion respectively, while Bhutan and Maldives had almost no FDI. In addition, there are significant differences in the growth of gross domestic product among the countries of the South African Union, reflecting economic difficulties and recovery.

Then, a theoretical analysis was conducted on the impact of FDI on economic growth from both direct and indirect perspectives. Research has found that FDI can directly cause capital shocks and indirectly affect the host country's economic growth by influencing other economic factors. FDI will directly or indirectly increase exports, compensate for the shortage of import funds in developing countries, and establish an external economic balance.

Subsequently, using data from 2013 to 2022, selected export size, import size, inflation rate, and unemployment rate as control variables, and used empirical methods such as ordinary least squares (OLS), random effects model, fixed effects model, and feasible generalized least squares (FGLS) to analyze the impact of FDI on the economic growth of SAARC countries. Through empirical results, it was found that FDI has a significant positive impact on the economic growth of SAARC countries. The larger the scale of FDI, the higher the economic growth rate. Therefore, it can be said that FDI is an important contributor to the growth rate of the national economy.

Finally, based on the above analysis, the following policy implications can be drawn: the host country needs to simplify various types of regulatory requirements to establish and operate enterprises; Take protective measures to address various concerns of foreign investors regarding legal issues and disputes; Strengthen vocational training and appropriate education to cultivate a skilled and adaptable workforce; Provide some tax incentives and exemption policies; Improve industrial structure, enhance human capital level, and enhance competitiveness to better attract FDI, the government needs to further expand the economic sectors that are open to the outside world and improve the overall internationalization level of the economy.

Keywords: FDI, Economic Growth, SAARC Countries, FGLS

Chapter 1 Introduction

1.1 Background and significance

1.1.1 Background

The FDI is reflected by various social and industrial frameworks within a country. Various social dynamics, industrial factors, and economic conditions affect the level of FDI within a country. This study analyses those issues from the contexts of the SAARC countries. This focuses on the repercussions of Foreign Direct Investment (FDI) on the economic progress of South Asian Association for Regional Cooperation (SAARC) member countries. In the global context, FDI stands as a pivotal catalyst for economic advancement, necessitating an in-depth examination of its specific ramifications within the SAARC region. These nations have garnered substantial FDI, presenting a significant opportunity to bolster local savings, investments, and overall economic expansion. Given the prevalent challenges of unemployment and the pursuit of economic diversification in these countries, policymakers must scrutinize the intricate interplay between FDI and economic growth to chart a course towards enduring development and affluence.

Foreign Direct Investment or FDI is a major driver of global economic growth. Foreign investors build, expand, or buy businesses and productive assets to bring a lot of capital into a country (Lee et al. 2022). Foreign direct investment (FDI) boosts economic growth by creating capital, improving technology, encouraging export-oriented sectors, and creating jobs. This study examines how FDI affects economic growth in SAARC countries. Understanding FDI in general and in the SAARC, region can help policymakers create sustainable economic growth plans. As FDI results in the formation of new capital, it is essential for economic expansion (Deng et al. 2022). When a country receives a substantial amount of international money known as FDI in the form of investment it might increase its savings and investment within the local economy or national framework. FDI in developing economies in 2019 totalled \$695 billion which is a significant amount.

Most of the developed countries invest their fund and create FDI in the emerging counties as those countries represent a wide range of potential or future possibilities with a reduced level of cost structure under the international competitive framework. This is why foreign direct investment (FDI) is so important for countries looking to increase spending on domestic businesses. Hence FDI continuously stimulates economic expansion through the inclusion of favourable rules, regulations, standardisation policies et cetera.

Foreign Direct Investment (FDI) emerges as a formidable force propelling global economic prosperity. It revolves around foreign investors' strategic endeavours to construct, expand, or acquire local enterprises and productive assets, thereby injecting substantial capital into host countries. The impact of FDI on economic growth is multifaceted and transformative, with its far-reaching effects encompassing the creation of capital, technological advancements, stimulation of export-driven sectors, and the generation of employment opportunities. This study embarks on a rigorous examination of how FDI shapes the economic landscape within the member nations of the South Asian Association for Regional Cooperation (SAARC). Understanding FDI, both in a general global context and within the unique contours of the SAARC region, carries profound implications for policymakers tasked with sculpting sustainable economic growth trajectories.

The pivotal role of FDI in engendering the birth of new capital underpins its indispensability in driving economic expansion (Deng et al. 2022). When a country experiences an influx of substantial international capital, termed FDI, through investments, it often experiences a surge in domestic savings and investments, invigorating the national economic framework. The magnitude of FDI within developing economies reached a staggering \$695 billion in 2019, underlining its pivotal significance (Zhao et al. 2022). Developed nations strategically channel their financial resources into emerging markets, foreseeing the expansive potential and cost advantages offered by these burgeoning economies. The allure of FDI cannot be ignored for countries seeking to amplify their investments in domestic enterprises. Consequently, FDI perpetually acts as a catalyst, fuelling economic expansion through the formulation of favourable regulations, standardized policies, and an environment conducive to growth. As stated by Kumar and Pradhan (2002), foreign direct investment (FDI) is one of the most significant types of foreign capital inflow in developing nations and constitutes a significant portion of the amount of capital that is formed. There is a considerable influence that foreign

direct investment (FDI) has on the industrialization, economic development, and growth of Bangladesh, according to research that was carried out by Emdad and Quamrul (2006). Nevertheless, the effect of foreign direct investment (FDI) was determined to be small in the case of Pakistan, despite the fact that it has assisted in closing the gap between saving and investment (Falki, 2009). An empirical study was conducted by Srinivasan et al. (2011) with the purpose of determining the influence of foreign direct investment (FDI) on the economic development of SAARC nations. The study discovered that there is a long-term, bidirectional causal relationship between FDI and GDP growth of the SARRC countries, with the exception of Afghanistan and India. Yet, the causal relationship was linear for India, and it flows from the rise of GDP to foreign direct investment.

1.1.2 Significance

Within the SAARC nations, there often exists a pressing need for an infusion of capital, advanced technology, and adept managerial expertise to tackle multifaceted challenges (Voumik and Ridwan, 2023). An obstacle to the progress of many SAARC countries is their struggle to allure investors, primarily due to deficiencies in their infrastructure. Foreign Direct Investment (FDI) acts as a transformational force, reshaping the landscape of infrastructure financing and development in these regions. Notably, FDI has ushered in notable enhancements in the host countries' physical infrastructure, spanning telecommunications, highway construction, renewable energy, and more (Doytch, 2020). These improvements are of paramount significance in a fiercely competitive global arena. High levels of unemployment and underemployment present significant socio-economic challenges across various SAARC nations. In this context, augmented FDI inflows into sectors such as manufacturing, services, and technology have demonstrated their potential to not only provide immediate employment opportunities but also establish a sustainable foundation for long-term economic growth. These investments prove to be particularly advantageous when emerging economies within the SAARC region forge alliances or collaborations with developed counterparts, mitigating the adverse effects of unemployment and underemployment on their development trajectories.

1.2 Objective, contents and methodology

1.2.1 The research aims and objectives

The aim of the research is to analyse the impact of foreign direct investment (FDI) on economic growth from the context of the SAARC countries.

- (1) To assess the trends and patterns of foreign direct investment (FDI) inflows in the SAARC countries considering a specific time period.
- (2) To investigate the relationship between FDI and economic growth in individual SAARC countries by examining the extent to which FDI contributes to economic development. To analyse the productivity, innovation, and spillover effects of FDI on the local economies of the SAARC countries considering technological advancement and knowledge transfer.
- (3) To examine the economic, social, and environmental impacts of FDI on the SAARC countries focusing on the positive and negative consequences on various aspects of economic development.
- (4) To identify the governance policies and institutional factors that influence the impact of FDI on economic growth in the SAARC region, assessing the role of regulatory frameworks in attracting and managing FDI inflows.

Research Questions

- (1) What are the trends and patterns of foreign direct investment (FDI) inflows in the SAARC countries considering a specific time period?
- (2) What is the relationship between FDI and economic growth in individual SAARC countries by examining the extent to which FDI contributes to economic development?
- (3) How the productivity, innovation, and spillover effects are enhanced by FDI on the local economies of the SAARC countries considering technological advancement and knowledge transfer?
- (4) What are the economic, social, and environmental impacts of FDI on the SAARC countries focusing on the positive and negative consequences on various aspects of economic development?

(5) What are the governance policies and institutional factors that influence the impact of FDI on economic growth in the SAARC region, assessing the role of regulatory frameworks in attracting and managing FDI inflows?

1.2.2 Research rationale

According to Zhao et al. (2022), the importance of FDI in driving economic growth and development cannot be ignored or avoided. FDI is an important driver for economic growth since it stimulates the accumulation of capital, the transfer of technology, the emergence of new jobs role, and the promotion of exports within the local economy increasing the volume of trade and number of transactions with international parties. Consequently, it also bolsters the host country's degree of integration in terms of trade liberalisation, export promotion, economies of scale, social welfare, and redistribution of income along with the objectives and sustainable goals of the international market. Arogundade et al. (2022) added that countries may suffer many kinds of difficulties if they fail to use the opportunity to attract foreign investment. Their economic growth and industrial development may be hindered if they are unable to gain access to crucial foreign resources, advanced technology, and managerial knowledge. A lack of FDI could also stifle local job growth and education and training options for residents. Thus, foreign direct investment (FDI) is beneficial for all parties involved. Henok and Kaulihowa (2022) stated that foreign investment, technology, and expertise boost economic growth and domestic industry competitiveness for the host country. Investment climate and infrastructure both benefit from foreign direct investment. The home countries of foreign investors gain access to additional markets, resources, and revenue streams, while also decreasing their reliance on any one market. Additionally, FDI encourages international economic cooperation, which increases economic interdependence and benefits all countries involved.

By improving infrastructure and enacting pro-business laws, SAARC governments should encourage foreign business investment in their countries. Regional collaboration and integration, which strengthen economic contacts and trade within the SAARC bloc, can increase the benefits of FDI. Making the most of FDI which can lead to greater incomes and improved living conditions for the general people, is one way that the SAARC nations can accelerate economic growth and development for their respective nations.

1.2.3 Research contents

The first chapter provides the background, significance, objectives, contents, research methodology, research rationale, contributions and deficiencies, how FDI helps in SAARC countries to improve on economic growth. Chapter two illustrates Overview of FDI, productivity, innovation and spillover effect and Economic, social and environmental impact, challenges and limitation of FDI. There are some theory discussion about Human capital, Market access, Neoclassical growth and Spillover. Chapter three represents the current situation where FDI comparison, growth, GDP per capita and economic ranking in SAARC countries. Chapter four develops the Theoretical mechanism Where have discussion about direct and indirect effect, technology spillover effect and hypothesis. Chapter five is about data and modeling, there are 4 models explanation and 3 variable which are dependent, core independent and control. Chapter six is about conclusion, recommendation and policy measures.

1.2.4 Methodology overview

The researcher has shown how foreign investment impacts economic growth in SAARC countries. The researcher used information, data and insights from sources such as National Statistical Organizations, SAARC Central Banks, IMF, and World Bank. The researcher looked at GDP growth rates, employment data, inflation rates, and trade data to assess economic performance driven by FDI. Ordinary Least Square Method (OLS), Random Effect Model (RE), Fixed Effect Model (FE) and Feasible Generalized Least Squares Method (FGLS) have been used. In economic modelling, after collecting the quantitative data and information about the FDI, and economic growth-related data, the researcher will run regressions (OLS, Random Effect, Fixed Effect and FGLS) in Stata to show the relationship among the dependent and independent variables within the research. The researcher used secondary data but ensured authenticity and consistency. Gathering and organising information from reliable sources, the study aims to understand the connection between foreign direct investment and economic growth in SAARC nations.

1.3 Contribution and deficiencies

1.3.1 Contribution

According to Santangelo (2018), the decision to examine the effect of FDI on the economy in SAARC member nations was motivated in large part by the rising relevance of FDI as a global driver of prosperity. Foreign direct investment (FDI) has evolved into an important motor for globalisation. Chaudhury et al. (2020) added that the rising significance of the SAARC area to global economic growth has stirred the region's interest in pursuing FDI. The link between foreign direct investment and GDP expansion in SAARC has not been investigated, despite increasing awareness of FDI's significance. However, a specialised and specific geographical study of the SAARC countries is required to measure and understand the effects of FDI on economic growth in this context. This is the research gap of the proposed study. There is a wide range of policy approaches, institutional structures, and economic development throughout the SAARC member states. The extent to which FDI promotes economic growth in each member country may vary due to these contextual factors.

Therefore, it is crucial to perform a thorough study in SAARC countries to learn how FDI contributes to economic progress in the region. This research analyses how FDI affects GDP growth in SAARC countries. The effects of FDI on SAARC's economy, including its ability to transfer technology, create jobs, and stimulate export activity, will be evaluated. The findings of this study have several implications specific for governments, investors, and scholars in SAARC countries and economies. Foreign direct investment (FDI) has the potential to boost SAARC's economic growth and development, and this study can help shape policy in that direction by demonstrating the key trends, and issues and considering drivers. The study's findings will influence regional cooperation, trade, and investment policies, all of which have the potential to boost the economies of the SAARC member states.

1.3.2 Deficiencies

This research study has identified the impact of foreign direct investment on the growth rate of GDP by taking a data set of the last ten years from 2013 to 2022. That is why there is a limitation of this research study not to take data set for at least 20 years because foreign direct investment and its impact are a long-term endeavour. For further research, at least 20 years of data might be effective in finding out significant causal relationship between foreign investment and the growth rate of GDP. Another limitation of this research study is that there is no consideration of lag variables. This year's inflow of foreign direct investment will indeed take some time to be implemented in the local economy. For this reason, the lag times of different variables need to be considered for identifying the true impact of foreign investment on the national economy. There are some other control variables which also influence the growth rate of GDP. For instance, national consumption, foreign exchange reserves, tax revenue, and budget deficits also influence the growth rate of the national economy. That is why in further research those controlled variables can be incorporated to identify the exact relationship between foreign investment and the national economy.

1.4 Chapter summary

This research evaluates the impact of Foreign Direct Investment (FDI) on the economic growth of South Asian Association for Regional Cooperation (SAARC) countries. FDI is recognized as an important driver of global economic growth. It offers opportunities for capital infusion, technological advancement, job creation and export stimulation within the economy. The study employs a 10-year dataset and applies various models such as OLS, random effect, fixed effect and FGLS to identify and show the relationship between FDI and GDP growth. The research aims were developed to guide policymakers in leveraging FDI for sustainable development. However, limitations include the relatively short database and the absence of consideration for lag variables and additional control variables.

Chapter 2 Literature Review and Theoretical Basis

2.1 Literature Review

This study investigates the impact of FDI on an overall economy. Its advantages and disadvantages will be examined. The reviews on the relevant works of literature provide a more detailed look at the relation of FDI with economic expansion, policies and regulatory systems that influence the relationship etc. In addition, it addresses the disadvantages of FDI reliance. According to the thesis, FDI affects GDP, employment, and the trade balance. It emphasises the need to maintain a balance between foreign investment and domestic interests. This report provides decision-makers and stakeholders with comprehensive information regarding the use of foreign direct investment for sustainable economic development.

2.1.1 Overview of the foreign direct investment (FDI)

Definition and types of FDI

A purchase of an interest in a specific organization by another entity from overseas is referred to as Foreign Direct Investment (FDI). This comes often in the form of a partial or complete takeover when a substantial share is acquired in a company located in another country. In a simpler narrative by Hsiao and Shen (2013), businesses engage in FDI to extend their business operations to a new country. The FDIs generally take one of the three following forms. Horizontal: A company invests in a foreign country and sets up and operates a business of the same sort as the home company. Vertical: vertical investment occurs when a company in one country acquires a similar company that belongs to anywhere of the supply chain except that of the acquiring company. Conglomerate: Conglomerate investments occur when a corporation buys equity in a foreign company unrelated to its core operation or industry. If production is divided into upstream and downstream activities, the FDI trade relationship can develop further, with parent to affiliate exports of intermediate inputs. In the same manner, horizontal FDI also has complementary effects on trade when firms invest in downstream affiliates (Brainard, 1993).

Motives and drivers for FDI inflows

Investment from abroad is crucial for developing countries. Organizations from these countries require funding from elsewhere if they are to grow internationally. With this sort of capital, these businesses can expand their sales operations all over the world. Nonetheless, FDI providers have incentives to pursue their own goals. FDI-providing companies prefer to choose businesses with efficient and skilled workforces. Companies frequently search for such enterprises in nations with somewhat free markets. This is because the potential for profit in such free markets is higher than in more restricted ones. When deciding where to invest FDI abroad, tax regulations are another significant consideration. It stands to reason that a place with less stringent tax regulations would be more appealing. In other situations, investment groups aim to expand their target market as a whole. Moosa (2002) describes FDI as import-substituting, export-increasing, or government-initiated from the host country's standpoint. Import-substituting includes producing host-country imports. Investments in exporting raw materials and intermediate products to the source countries increase exports. To alleviate balance of payment deficits, governments undertake FDI (Tocar, 2018).

Trends and patterns of FDI on a global scale

Historically the majority of the FDI went into the more developed nations. And it is still true as the USA received 23.9% of the global FDI flow in 2021. However, a greater proportion of FDI began floating into emerging economies or developing nations as corporations started to seek higher sales growth, reduced labour costs and expanded consumer markets. However, Lee (2015) proposed that developing nations have become more familiar with the global market potential and started to participate in the market on their own. This way, the approach of FDI included the merger and acquisition (M&A) to make foreign market operations and exposure even faster. The target industries of FDI have also experienced a shift from manufacturing focus to other industries like service and agriculture. Global value chains (GVCs) and FDI are no longer growing with GDP and trade, signifying a major economic change. Even with escalating trade tensions, global GDP and trade have increased 3.4% and 4.2% yearly since 2010 (UNCTAD). While FDI growth stagnates around zero. This gap indicates investor nervousness due to

worldwide production and GVC movements, increasing protectionism, and geopolitical tensions. It also shows that FDI-dependent developing nations are more sensitive to global investment flows.

Another factor that changed the FDI approaches is the region-based integrations where the investors from member nations experience benefits in the form of fewer barriers or easier trade policies.

Factors affecting FDI in individual economies

Investors from around the world are drawn to the diverse economic, political, and social dynamics of South Asia. This region offers new drivers that have great influence over FDI trends, notwithstanding the universality of strong economic stability and continuous growth. FDI determinants studies in South Asia also provide mixed findings. Bhavan et al. (2011) found that trade openness, population, and infrastructure encourage FDI in South Asia, whereas physical distance hinders it. Human capital has little correlation with FDI. Similarly, Sahoo (2006) found that market size, infrastructure, and affordable labour mostly impact inbound FDI in this area. He said that currency rates and GDP growth rates have no correlation with FDI. According to Moran's (2012) analysis, investors are drawn to countries in South Asia that have demonstrated both economic stability and consistent growth. Countries with stable currencies, low inflation rates, and responsible government spending become attractive investment options. Equally important is the creation of long-lasting policies that protect property rights and encourage the growth of foreign firms in South Asia. In the South Asian context, the importance of a sizable market and room for expansion cannot be overstated. India, Bangladesh, and Sri Lanka are home to massive consumer markets that provide enticing prospects for companies seeking to expand their operations and reach a broader range of customers as studied by Ziyang (2014). Business in South Asia's ever-changing environment relies heavily on the region's well-developed transportation, communication, and energy networks. Access to technical advances and innovation hubs in the region boosts tech-centric efforts, which is in line with the goals of technology-focused businesses. South Asian FDI is heavily influenced by taxation laws and investment incentives. Investors' decisions are frequently influenced by countries like Sri Lanka and Bangladesh that offer attractive tax breaks. South Asian countries are more attractive to foreign investors because their tax policies are crafted to be pro-investors and include decreases in corporation tax rates. Kwak (2016) stated in support that investment confidence is boosted, risks are mitigated, and the attraction of FDI is increased when an environment is fostered that is defined by financial stability and transparent regulatory frameworks. South Asia's natural wealth is luring foreign direct investment. It is becoming increasingly common for companies, especially in developing countries like India and Bhutan, to locate their factories close to their source countries' raw material supply chains. The possibilities for FDI are improved by the confluence of market-oriented reforms and trade liberalization processes. The potential for foreign direct investment (FDI) is boosted by South Asian countries' membership in regional economic alliances and trade blocs, which increase market access and improve trading conditions within the bloc. Therefore, the dynamics driving FDI in South Asian countries are not limited to, nor explained by traditional economic paradigms; rather, they are a product of, and response to, the region's particular context and economic priorities.

2.1.2 FDI and its productivity, innovation and spillover effect

Linkages between FDI and productivity improvements

When a country receives FDI, it benefits monetarily and economically. This paves the way for investments in crucial areas including physical and intellectual infrastructure and people resources. Therefore, productivity is expected to also rise based on normal assumptions. A study conducted by Eregha (2012) described that MNCs are known to benefit local economies by imparting their cutting-edge management techniques, technological innovations, and commercial acumen through their overseas investments. Better production methods and enhanced operational processes may be implemented as a result of knowledge transfer. Workers in the area benefit from the presence of FDI since they can receive training and exposure to processes and technologies that are brought forward by the investors. The result is a more proficient and efficient staff. Competition in domestic markets is likely to increase as a result of foreign direct investment FDI. To compete, domestic businesses must increase their efficiency and production.

Technology transfer and spillover effects from FDI

There may be positive knock-on consequences from FDI, such as the spread of new technologies. The following mechanisms cause this to happen: MNCs develop supply chains and work with regional providers and companies to form vertical ties to gain benefits. But Kwak (2016) pointed out a contrary possibility that domestic suppliers can learn about the MNCs' methods by adapting their operations to match the quality and technological requirements of investing organisations. This can lead to the spread of new technologies. The techs and know-how may be restricted within the domestic company but the knowledge gathered by the human resources is shared in other places when they leave the company. In other cases, Multinational corporations typically collaborate with local enterprises or institutions by doing complex processes with their assets and providing to the target company for further but simpler processes. Working together has allowed for the dissemination of information and the dissemination of expertise. The result may be the proliferation of new technologies and other spillover effects.

Assessing the role of FDI in enhancing innovation and R&D

Numerous studies have been conducted on the impact of foreign direct investment on the innovation performance of local enterprises, but no consistent conclusion has been reached. The reason is mainly due to the following aspects. First, different scholars adopted different research methods, samples, and measurement indicators of enterprise innovation ability. Different scholars used different indicators to measure the enterprise innovation ability, such as productivity, R&D investment, and output value of new products, and they mostly used industry-level data to estimate the innovation spillover effect of FDI. Thus, identifying accurately whether the innovation spillover effect of FDI exists is impossible. Improvements in the host country's innovation and R&D landscape may result from inflows of foreign direct investment (FDI). There are a variety of ways this can occur: Investors spend money in the host country so that the products and technologies can be tailored to the specific needs of each market. The result is an increase in national investment in research and development. Crescenzi et al. (2015) used British multinational firm data to examine how overseas mergers and acquisitions affect domestic innovation. The findings suggest that FDI boosts local firms' creativity. Olabisi (2017) observed that FDI-receiving companies innovate products more. FDI and trade also boost local business innovation, according to Gorodnichenko et al. (2020). Based on European cross-country statistics, Sandu and Ciocanel (2014) claimed that FDI would boost industry R&D investment by increasing exports, which helps businesses innovate. Joint R&D projects between FDI providers and local research institutions, universities, and businesses are thus made possible. Through working together, a culture is nurtured that values new ideas and the exchange of information. Working with an international firm provides local staff with an excellent learning opportunity. With this increased knowledge, local companies will be able to push the boundaries of innovation research and development.

2.1.3 Economic, social and environmental impact of FDI

FDI's impact on GDP, GNI, Employment, Inflation rate, economic growth, foreign exchange currency value preservation, and positive balance of trade. Investment from abroad increases both output and income. Foreign direct investment (FDI) improves economic growth, increases employment opportunities, and spreads novel concepts. They promote production and trade, which in turn increases income. The availability of jobs increases as well. Both directly in foreign-owned businesses and indirectly in domestic supply networks. The standard of employment varies widely. Foreign direct investment has the potential to influence price levels and employment levels. Increased demand for goods and services could be the result of FDI. Competition and output both benefit from FDI. Inflation is mitigated by stability. Growth in investment, productivity, and the uptake of new technologies are all boosted by FDI. Growth is the result of investment in a healthy economy. Reserves of foreign money are bolstered by FDI. The host country's currency can see an increase in value as a result.

FDI's implications for income distribution and poverty reduction

FDI may reduce poverty by creating new jobs and boosting economic growth. The distribution of foreign direct investment (FDI) gains and inclusive economic growth directly affect poverty reduction. However, more often the inequality in earnings outweighs the positive impacts of lifting the poor community. Growing the economy does not always translate into less poverty, Thorbecke (2012). It is evident that foreign direct investment (FDI) positively influences economic development. Al Zaidy (2019), Bengoay

(2003), Taiwo (2016), and Ceyhun (2016). However, depending on how wealth is distributed—either equally or unevenly—the impact of FDI on poverty is unclear. Foreign investment may increase income disparity in the host country by setting high-paying, well-educated positions in their controlled organisations, but it may also leave low-paying, precarious jobs for the locals as implied by Hsiao and Shen (2013). Additionally, Foreign enterprises send their profits home, reducing the national foreign reserve balance. Foreign investments often raise product standards to comfort and luxury levels to service their target market, making them prohibitively pricey for locals.

Environmental concerns and FDI's impact on sustainability

Some empirical research show that FDI improves environmental quality. Over 1990–2014, Rafindadi et al. (2018) examined whether FDI and energy consumption increase environmental pollution in six Gulf Cooperation Council (GCC) member nations. The authors used Pooled Mean Group estimate to find that FDI imports considerably reduce GCC environmental deterioration. This confirms the pollution halo concept and the technique's FDI consequences. Their investigation found that energy usage harms the ecosystem. Some foreign direct investment projects, especially those in the extractive sectors, might result in the depletion of natural resources, which can have negative effects on the environment and local communities. Amoah (2014) found that when environmental restrictions in the host country are inadequate or not sufficiently enforced, FDI can contribute to increasing pollution and emissions. Threat to ecosystems and wildlife from deforestation and biodiversity loss due to FDI Projects in agriculture and infrastructure development. From a positive angle, external investments can benefit the host country by introducing greener and more sustainable development practices, such as new technology and best practices that promote sustainability and environmental protection. The pollution halo effect was also shown by Polloni-Silva et al. (2021). In a 2010–2016 study of 592 municipalities in São Paulo state, Brazil, the authors examined the correlation between FDI and CO₂ emissions. The estimate outcome depends on other control factors, such as GDP per capita, industrial and service sectors, residential electricity consumption proportion, etc. Their empirical investigation reveals a pollution halo effect in São Paulo state. This linear and negative relationship exists between FDI and environmental contamination. Polloni-Silva et al. (2021) say this is conceivable since most of the sample's foreign enterprises were from developed nations and worked in medium and high-tech industries. Other research by Lee (2013), Jugurnath and Emrith (2018), Albulescu et al. (2019), and Bernard and Mandal (2016) evaluated whether FDI-receiving nations are pollution havens or haloes but found no substantial influence on environmental sustainability.

Evaluating social responsibility practices of multinational corporations

MNCs can be evaluated on their corporate social responsibility (CSR) based on their labour standards such as fair wages, safe working conditions, and respect for workers' rights. A thorough study by Blalock and Gertler (2012) stated that MNCs should show commitment to the stakeholder society as their operations are based on the interaction with social entities, environment and infrastructures. Participating in social initiatives such as CSR programmes and sustainable development projects can make MNCs grow even in the foreign economic structure. CSR efforts may show prospective host nation constituents a firm's social commitment (Campbell et al., 2012), boosting its external credibility. This may prevent host nation customers and stakeholders from discriminating. CSR reputation also helps MNEs get host nation recognition and prevent opportunistic partner behaviour (Rhee and Haunschild, 2006; Surroca et al., 2010). Lastly, the learning experience theory argues that MNEs with great CSR performance have good corporate governance and staff training and development, which might help them internationalise by improving external legitimacy (Un, 2016). The shareholder expense argument proposes that CSR spending wastes firm resources and diverts funds from other purposes, such as positive net present value FDI (Borghesi et al., 2014; Deng et al., 2013). MNEs with excellent CSR reputation may avoid FDI in markets that might damage their legitimacy. MNEs with strong CSR reputations face greater expenses to preserve and safeguard their reputation in foreign markets, leading to decreased likelihood of engaging in FDI activities that might harm their reputation. Shareholder expenditure evidence is scarce. Since CSR is a key intangible asset, i believe it positively impacts the firm's external impression in the target FDI nation. The environmental impact of multi-national corporations and their commitment to green business practices is another crucial metric by which to judge their corporate behaviour. Operating transparently, engaging in ethical business practices, and abiding by local laws and regulations are some other criteria of ethical foreign business practice. Thus, FDI can set standards and practices within an economy showing how

engagement in social initiatives and CSR can attract customers or communities towards the business. This will create a positive standardization or competition based on responsible business practices within the economy.

Evaluating the relationship between FDI, imports, and exports

Foreign investments have a considerable impact on a nation's trade balance due to their impact on both imports and exports. When foreign corporations invest in a new nation, they typically establish manufacturing facilities and distribution networks. This can increase the likelihood that products and services developed by these foreign-owned businesses will be manufactured and exported from the United States. Export growth stimulated by FDI can enhance the trade balance of the host nation and stimulate economic growth. Foreign direct investment (FDI) often brings advanced equipment and technology to a region, which might lessen the need for some types of imports suggested by Soumaré (2015). Local economies may become less reliant on imports if locally-owned businesses improve their efficiency and competitiveness in manufacturing. The trade surplus can grow if import prices are lowered in this way. Furthermore, FDI can help to speed up the assimilation of domestic inputs into outputs by facilitating ties between foreign enterprises and domestic suppliers. By adopting this policy, we may lessen our dependence on some imported goods while simultaneously bolstering home-grown commerce. However, Lin, Kim and Wu (2013) found that it is crucial to understand that the connection between foreign direct investment, imports, and exports is not always clear or easy. Increased demand for imports is one possible result of FDI. This is especially the case when foreign investors must bring in costly machinery or other specialist components that are either not produced or priced out of the host country's market. Businesses that have foreign investors can expand their reach by making goods for the home market as well as the export market. It is difficult to disentangle the effects of FDI on imports and exports because of the multiplicative nature of this investment type.

2.1.4 Impact of FDI on Economic Growth

Empirical evidence also supports the modernization idea that Foreign Direct Investment (FDI) has a favorable influence on economic development. Blomstrom & Kokko (1998) discovered a favorable correlation between Foreign Direct Investment (FDI) and economic development in 78 developing nations. Borensztein, et al. (1998) found comparable outcomes when examining the spread of technology via foreign direct investment in 69 developing nations. Additionally, their study demonstrates that Foreign Direct Investment (FDI) and economic development are mutually beneficial in such nations. Studies by various researchers have shown the favorable effect of Foreign Direct Investment (FDI) on the economic development of ASEAN-4 countries, 47 African countries, 118 countries worldwide, 87 different countries, Singapore, and Malaysia. Marwah & Tavakoli (2004), (Sissoko & Feridun, 2006) and Har Wai Mun et al., (2008).

Basu & Chakraborty (2002) found that the beneficial impact of Foreign Direct Investment (FDI) is more significant in open-border economies and has an opposite relationship with economic development. In contrast, in a closed country, the relationship is linear, with GDP growth affecting the flow of FDI. Blomstrom, et al. (2000) observed a similar pattern indicating that foreign direct investment (FDI) has a beneficial effect on economic development in nations that have attained a certain income threshold. Several aspects in the host country, such as the political climate, organizational environment, tax policies, education rate, and socioeconomic strength, also significantly influence how foreign direct investment (FDI) might impact economic development (Mallampally & Sauvant, 1999). Nations with specific infrastructure can only profit from foreign direct investment influx. Borensztein et al. (1998) and Wu & Hsu (2008) discovered a significant positive correlation among competent human resources and the effect of foreign direct investment (FDI) on the economic development of the host nation. Foreign direct investment (FDI) stimulates economic development in a couple of ways, according to Bashir and Shakir (2012): first, it boosts the financial market in the receiving nation, which in turn stimulates trade and industry, and second, FDI has a favorable effect on the nation receiving the investment's industry and trade. The economic development of the host nation is positively affected by foreign direct investment (FDI), say Taylor and Sarno (1999). Foreign direct investment (FDI) has clear beneficial effects when it enters markets with intense competition, but adverse implications when it is limited to certain areas. Foreign direct investment (FDI) boosts economic output by providing the host nation with access to cutting-edge technology, specialized expertise, and fresh ideas.

2.1.5 Challenges and limitation of FDI's Impact on economic growth

Debates on the causality between FDI and economic growth

Foreign direct investment (FDI) has been widely recognised as a key factor in the economic development of recipient countries. The downsides must be carefully considered. Foreign direct investment and economic expansion are contentious topics. While some argue that FDI is a cause of economic growth, others argue that it is merely a symptom of prosperity. This demonstrates that countries with healthy economic growth attract FDI. What causes this correlation is not made obvious. The standard of FDI is also important. Speculative, short-term investments may not lead to the sustainable development sought by host economies. Foreign investors may drive domestic competitors out of a market. If they dominate the economy, a few multinationals may impede competition and innovation. FDI favours extraction and exporting. Benefits and disadvantages. It could cause a resource curse and limit economic diversification.

Overreliance on a few multinational businesses makes a country vulnerable to international trade. "Race to the bottom" exacerbates it. FDI can boost a country's economy. Backers should know the risks. These include reduced tax revenue, environmental laxity, and worker exploitation. These issues may endanger the host nation. Multinationals repatriating profits worsens the issue. An economy may suffer when money disappears. Domestic investment and growth may slow. Dhingra et al. (2017) mentioned in their findings that Heavy reliance on FDI can lead to economic instability when foreign investors exit during recessions. Foreign direct investment has the potential to lessen governmental control. Overly accommodating host governments to foreign investors can compromise their ability to advance national interests. This trend can reduce regulatory authority over multinational corporations and impair domestic development priorities. Another serious problem is the exploitation of natural resources for economic gain. If foreign direct investment is just used for mining and logging, the host country may not reap any benefits from the investment. As a result, the country's value chain and attempts at diversification may be constrained by its reliance on raw material exports. This discussion shows that solely relying on the FDI inflow cannot ensure proper economic growth within the economy, rather it often drives the local economies down, and it can only ensure short-run growth ignoring long-run growth. Thus, over-reliance on FDI can generate reverse results rather than causing expected results within the economic framework.

2.1.6 In comparing FDI to other countries

The influx of FDI and the subsequent technology transfer have shaped profound transformations in economies like Ireland. Ireland's emergence as the European hub for major global technology corporations is a testament to FDI's impact. This has cultivated a robust technology industry and a large pool of skilled professionals within the country (Yuldashev et al., 2023). Typically, when foreign companies invest in a nation, they establish export-oriented industries, capitalizing on cost advantages in the host country and creating a positive cycle of domestic consumption. This leads to a broadened economic base, increased availability of innovative products in local markets, and improved quality and reliability through standardization. Countries receiving substantial FDI tend to exhibit higher per capita exports, fostering positive effects on trade relationships, foreign currency exchange, and balance of payments (Luo et al., 2022). This highlights the advantages of FDI for exporters and the potential to make a country export-driven with a competitive edge. Vietnam's rapid economic development is significantly attributed to the influx of FDI, particularly benefiting its electronics and textile industries. Consequently, Vietnam has ascended as a global leader in the export of electrical goods. Moreover, FDI contributes to employment creation, mitigating unemployment within a nation's economic framework.

2.2 Theoretical Basis

2.2.1 Human capital theory

According to the human capital theory, investing in people's education and experience is one of the best ways to increase their efficiency and output. Human resources are the focus of human capital analysis. In 1962, Becker and Rosen came up with the theory. According to this concept, each employee has unique skills. Training or education is needed to develop such traits. Amoah (2014) found that managers must advise, teach, and motivate their teams. They should be the focus of workplace guidance.

Training or education is needed to develop such traits. Managers should learn their employees' procedures and help them improve. The incorporation of FDI in the countries belonging to the South Asian Association for Regional Cooperation (SAARC) presents a concrete opportunity for the entry of external resources, technological expertise, and managerial capabilities. The increase in this phenomenon acts in a mutually beneficial manner to stimulate the development of valuable skills and knowledge within the indigenous labour force. A more comprehensive description can be found in Chaudhuri and Bencheekroun (2012). These traits involve not only the acquisition of knowledge but also the development of sophisticated skill sets that are in line with the contemporary economic landscape. Drawing upon the principles of human capital theory, it may be argued that FDI plays a crucial role in enhancing the intellectual and skill levels of the labour force, hence laying the foundation for driving economic growth.

Just investing in employee education does not improve the level of employment and FDI. Often technological changes and lack of employment demand are the barriers in most of the emerging and developing economies while focusing on FDI improvement and enhancing employee productivity.

A study on human capital by Lin, Kim and Wu (2013) further argued that the integration of cutting-edge technologies, strategic managerial approaches, and expertise facilitated by foreign direct investment enhances the inherent capabilities of the local labour force. According to human capital theory, this infusion facilitates the development of a workforce that possesses enhanced capacities, hence promoting creativity and productivity. The symbiotic connection between FDI and human capital provides evidence for the fundamental claim of this theory, which states that investments in education, training, and skill enhancement enhance the effectiveness of human resources in making significant contributions to economic progress. When there is more investment in human capital, then unemployment will be reduced. It will increase the GDP growth rate.

2.2.2 Market access theory

Market access refers to a company's or country's ability to trade goods and services across borders, both domestically and internationally. This largely pertains to cross-border trade, when complications occur from different sets of rules and agreements. In contrast to the concept of unrestricted trade promoted by free trade principles, Eregha (2012) distinguishes market access from free trade by emphasising the role of taxes, levies, and quotas in global trade dynamics. Exploring the connection between market access and FDI is important in the context of economic growth in the SAARC countries. Foreign direct investment not only provides a source of new capital but also opens doors to new markets around the world. When foreign investors are present, domestic and international businesses have an easier time navigating complex trade talks and lowering trade barriers. Moran's (2012) study provides a further explanation, demonstrating how countries frequently use market access agreements to boost export potential and domestic sectors while simultaneously regulating imports. This is consistent with the role that FDI plays in boosting economic growth by encouraging export-oriented industries and enhancing overall trade capacities. By strategically preparing a country to take advantage of international trade prospects, FDI infusions of foreign skills and resources optimise market access. In addition, the World Trade Organisation (WTO) has sway over market access because it serves as a forum for commercial talks and conflict settlement (Nurcahyo, 2015). Foreign direct investment can greatly improve the economic prospects of the SAARC members by providing improved market access and harmonising trade-related conflicts. In this research study, import and export have been used to find out the impact on the GDP growth rate. However, market access should be monitored so that local and domestic industries especially infant industries are protected from foreign dominance. Otherwise, it will create dependency within the economy and excessive translation of foreign currency can weaken the local economy in the absence of favourable FDI support at challenging times.

2.2.3 Neoclassical growth theory

Neoclassical Growth Theory is a school of economic theory that explains how the interaction of labour, capital, and technology sustains a healthy economy. The Solow-Swan Model is the simplest and most frequently recognised version of the many different Neoclassical Growth Models that have been proposed. Supporting this theory, Adegboye et al. (2021) wrote that a transitory economic equilibrium is achieved when varying degrees of labour and capital employed in production are taken into account. The concept asserts that technological advancement has a significant impact on the functioning of an economy. The three pillars of

neoclassical growth theory necessitate an expanding economy. However, the theory emphasises the argument that short-term equilibrium is distinct from long-term equilibrium and does not necessitate these three factors. The Neoclassical Growth Model, as outlined by Balasubramanyam, Sapsford, and Griffiths (2012), highlights that capital accumulation and human capital utilization significantly shape economic expansion rates. The interaction between capital and labour within an economy determines its overall output. This model posits that technological advancements enhance labour productivity, thereby amplifying output. The production function within this framework, $Y = A \cdot f(K, L)$, demonstrates how national income relies on labour, capital, and technology. In the SAARC countries, the amalgamation of foreign capital and advanced technologies through FDI aligns with the Neoclassical Growth Model's principles. As foreign investments introduce advanced practices, knowledge transfer, and technological innovations, the human capital potential is harnessed more effectively. This synergistic impact on labour, capital, and technology reinforces the model's proposition, with FDI acting as a catalyst for elevating economic expansion rates in the SAARC region.

The labour portion of this theory has been incorporated in this research. If there is a high amount of labour in the workplace, then it will increase employment. It will in turn increase the GDP growth rate. Hence, unemployment has been incorporated in this research study.

2.2.4 Spillover theory

The "spillover effect" term is commonly used to refer to an adverse shift in economic, social, or political conditions in one region or globally as a consequence of another event that appears unrelated. In theory, this could have a positive effect, but in practice, it typically has the opposite effect. According to Kennedy, Bardy, and Rubens (2012), national events can have positive and negative global effects. Market swings, societal upheavals, and environmental actions are examples. Events that inspire comparable actions and lessen negative outcomes have positive spillover effects. This is shown in government-funded public education. Education increases people's ability to contribute, benefiting society. In SAARC economies, spillover effects are relevant. Positive spillovers occur when one country's economic growth spurs neighbouring growth. Economic growth can inspire regional prosperity through collaboration. A positive reform or policy implementation in one SAARC country may inspire others to follow suit, advancing together. However, negative spillover effects must be considered. Economic or social issues in one SAARC country might affect the region. Financial instability or environmental degradation in one country may impair trade with nearby economies. SAARC states must work together to mitigate spillovers and build resilience. In another context, Chaudhuri and Benchechroun (2012) conveyed that, unintended and sometimes disastrous consequences may result from negative spillovers. An example of a recent incident with lasting consequences is the COVID-19 pandemic. The worst disaster of the twenty-first century began with a single incident in Wuhan, China, and then quickly spread over the world. During the lockdown, borders were shut down, international trade was halted, businesses were destroyed, and financial markets crashed. This epidemic quickly became a catastrophe, reminiscent of the Spanish flu pandemic of 1918. Therefore, the bad spillover often outweighs the expected consequence and has repercussions for people who weren't directly involved in the initial event.

In this research study, this theory has not been incorporated. The reason behind this there is no quantitative data or information as well as no quantitative approach to incorporating the spillover effect among the SAARC countries. This theory rather focuses on the qualitative aspect of economic resilience.

2.3 Chapter summary

The relationship between Foreign Direct Investment (FDI) and economic growth in the South Asian region is complex, and debates surrounding its causality persist. While FDI is often considered a catalyst for economic development, some argue that FDI is a consequence of a prosperous economy, rather than its primary driver. Yet, the quality and nature of FDI play a pivotal role. Short-term, speculative investments may not necessarily lead to sustainable growth in host economies. In the South Asian context, FDI can fuel economic expansion but also pose challenges. The dominance of foreign investors may impede domestic competition and innovation, potentially marginalizing local industries. FDI can encourage resource extraction and exports, causing vulnerability to global market fluctuations and reinforcing a "race to the bottom" in regulatory standards. Dhingra et al.'s findings (2017) caution against overreliance on FDI, which can leave economies exposed to instability during recessions. The exit

of foreign investors might disrupt economic equilibrium. Moreover, an excessive focus on FDI could compromise national interests, diluting regulatory authority over multinational corporations and curtailing domestic development agendas. Resource exploitation and limited value addition through FDI are pertinent concerns for South Asian nations, restraining their ability to diversify and strengthen their value chains. While FDI offers opportunities, prudent policies are needed to ensure a balanced and sustainable economic growth trajectory in the dynamic landscape of the South Asian region.

Chapter 3 Current situation of FDI and economic growth in the SAARC countries

3.1 Current situation of FDI in the SAARC countries

As shown in the figure3-1, Foreign Direct Investment (FDI) differs across SAARC countries which reflect diverse economic landscapes. In India, FDI has showed fluctuations. It reached its peak at 64.36 in 2020 indicating significant foreign capital inflow. The subsequent years witnessed a decline, with 44.73 in 2021 and 49.92 in 2022 billion dollars. Bangladesh experienced a steady increase in FDI which went from 2.60 in 2013 to 1.56 billion dollars in 2022. Sri Lanka encountered fluctuations, with a noticeable dip in 2022 to 1.08 after maintaining moderate levels in preceding years. Afghanistan witnessed minimal FDI throughout the years, with a notable increase to 1.30 in 2022 billion dollars. Bhutan's FDI remained minimal, mostly hovering around 0.01, while the Maldives experienced fluctuations, such as a notable decrease in 2020 and a subsequent rise to 0.72 billion dollars in 2022. Nepal observed a declining trend which reached 95 billion dollars in 2022. Pakistan showcased a consistent FDI decline, reaching 1.34 billion dollars in 2022, potentially impacted by economic challenges. These FDI trends suggest varying degrees of attractiveness for foreign investors that has significant influence on economic conditions, policy frameworks, and geopolitical factors in each SAARC nation.

If contemporary environment is focused, in 2022, Bangladesh received an FDI of around USD 3.5 billion. It has increased by almost 20% from last year (TBS Report, 2023). The total inward FDI value of Bangladesh during 2022 is nearly USD 22 billion (TBS Report, 2023). Recently Bangladesh Patents Bill 2022 has extended the duration of the patent from 16 years to 20 years (TBS Report, 2023). This might influence the increase of FDI inflow in the country. 2022 India will receive around 50 billion USD in 2022. The inflow of FDI has increased by nearly 10% in this country (Gautam, 2023). The country has consolidated their position as a preferred destination of investment by securing the second-largest value of different types of international project finances in 2022 (Gautam, 2023). In Pakistan, during 2022 the value of foreign direct investment is nearly USD 1.4 billion (ITP, 2023). There is around a 38% decline in FDI from 2021 for the country (ITP, 2023). The main reason behind this decline in FDI value is political instability in the current situation (ITP, 2023). Investors may have nearly lost their confidence in making investments in Pakistan. During 2022 the GDP of Sri Lanka has grown by nearly 3.6% (MacroTrends, 2023). The country has rebounded from the default situation very tactfully. That is why the country has experienced an increase in FDI inflow (MacroTrends, 2023). During 2022, the country has achieved an inflow of nearly 0.9 USD million (Salas, 2022). It has been increased by almost 2 times. Nepal received FDI in 2022 for nearly 0.95 million USD. It has declined by nearly 20% from the previous year (Salas, 2022). In 2022, Bhutan has received an FDI inflow of nearly 0.01 billion USD (Trading Economics, 2023). It has increased by nearly 43% from the previous year (Trading Economics, 2023). Recently the country has approved around 8 FDI projects which are mainly in the service sectors (Tashic, 2023). In Maldives, the FDI inflow during 2022 is nearly 0.5 USD billion. It has increased by nearly 27% from last year (WION, 2023). That country has liberal and economic environmental investment opportunities to offer foreign investors. In 2022 Afghanistan received an FDI of around 0.21 billion USD. There is a sharp decline in receiving FDI because of political instability (WION, 2023).

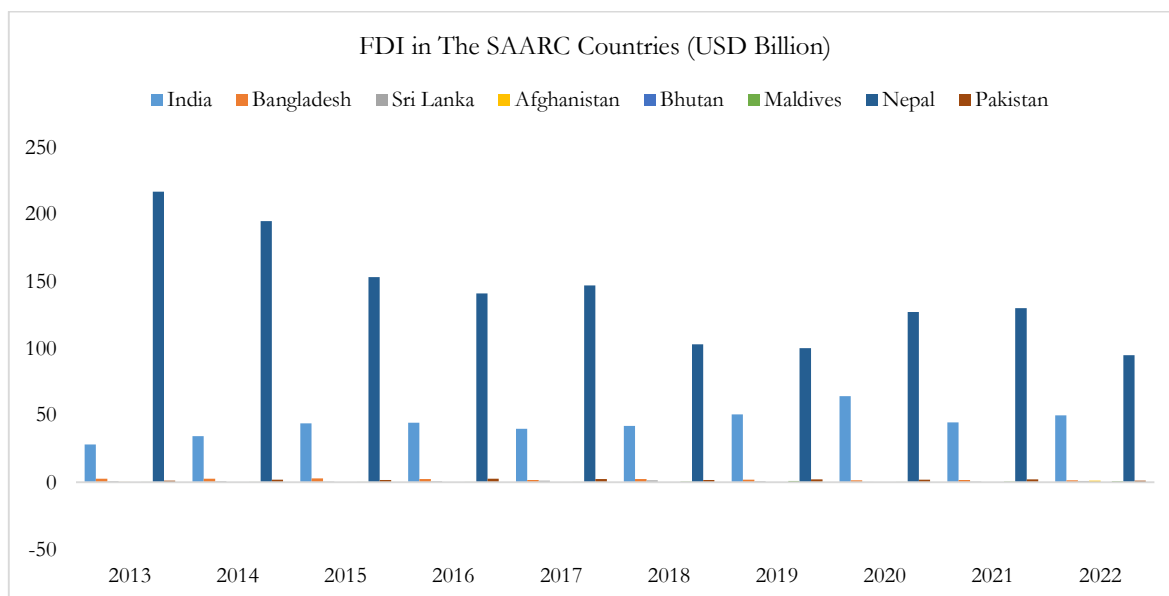


Figure 3-1 FDI in The SAARC Countries

3.2 Current situation of economic growth in the SAARC countries

3.2.1 Economic growth comparison in SAARC countries

As shown in the figure3-2, The economic performance of SAARC countries is indicated by GDP growth rates in this graph which shows a diverse trajectory. India experienced fluctuations in its GDP growth, recording positive growth rates from 2013 to 2018 and there is a peak of 8.26% in 2016. However, the year 2020 showed a downturn with a negative growth rate of -5.83%, followed by a robust recovery at 9.05% in 2021 and a more moderate growth of 7.00% in 2022. Bangladesh consistently experienced positive growth. It gradually increased from 6.01% in 2013 to 7.10% in 2022. Sri Lanka encountered multi-level trends, with positive growth until 2019, followed by a contraction of -4.62% in 2020 and a further decline of -7.82% in 2022. Afghanistan faced economic challenges, such as a severe contraction of -20.70% in 2021. But it recovered to -2.40% in 2022. Bhutan demonstrated steady growth, while the Maldives experienced a notable contraction in 2020 (-33.49%) and subsequent strong recovery in 2021 (41.75%) and 2022 (12.30%). Nepal's GDP reached a low of -2.37% in 2020 and rebounded to 5.61% in 2022. Pakistan also showed consistent positive growth. It ranged from 2.50% in 2019 to 6.49% in 2021 and 6.19% in 2022. Thus, those trends reflect relative economic stability across the years.

During 2022 Bangladesh will have a GDP growth rate of nearly 7.10%. The country has developed different types of mega projects (TBS Report, 2023). Those mega projects have increased flexibility in the transportation system and boosted economic activities (TBS Report, 2023). During 2022 India has achieved of GDP growth rate of around 7% which is slightly lower than that of 2021 (Gautam, 2023). During 2022 Sri Lanka has a negative GDP growth rate because of their different situations and political instability (ITP, 2023). However, the country is recovering very tactfully (ITP, 2023). During 2022 Afghanistan has a GDP growth rate of -2.40%. During 2021 this rate was nearly -20.70% (MacroTrends, 2023). The main reason behind this negative GDP growth rate is political instability (MacroTrends, 2023). Bhutan has been able to achieve a GDP growth rate of 4.30% during 2022 which is slightly higher than that of 2021 (Salas, 2022). The country has taken different projects for flourishing tourism sectors (Salas, 2022). That is why the GDP growth rate is an increasing trend. During 2022 Maldives has been able to achieve a GDP growth rate of 12% which is around two times lower than that of 2021 (Tashic, 2023). The inflationary situation of the country has resulted in lower GDP growth (Tashic, 2023). During 2022 Nepal has been able to achieve a GDP growth rate

of 5.61%. It is slightly greater than that of 2021 (WION, 2023). However, Pakistan has a GDP growth rate of 6.19%. It is slightly lower than that of 2021 because of political instability and lower investment opportunities (WION, 2023).

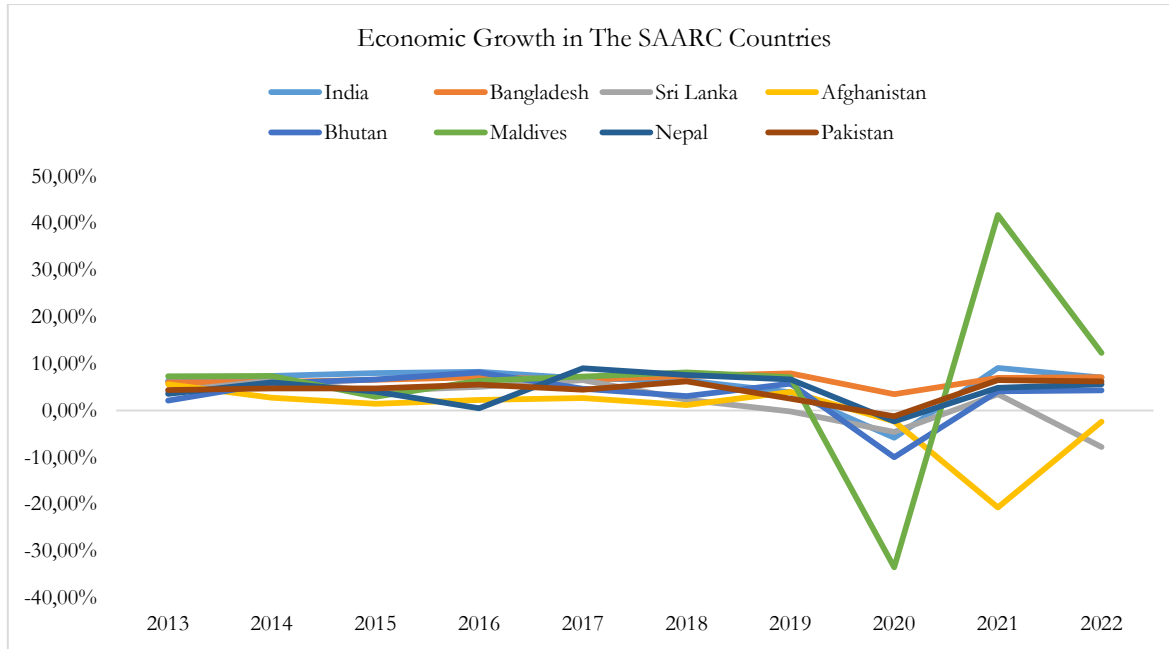


Figure 3-2 Economic Growth in The SAARC Countries

3.2.2 GDP Per Capita Income of SAARC Countries

As shown in the figure3-3, This bar chart illustrates the percentage of gross domestic product (GDP) per capita income of SAARC countries between the years 2022 and 2023 at 2 year intervals.

In Sri Lanka, the percentage of GDP per capita income experienced a significant decline, going from -7.8 in 2022 to -4.3 in 2023, and then remaining positive at 1.2 in 2024. This is something that can be observed. Although the percentage of GDP per capita income remained positive, all SAARC countries, with the exception of Sri Lanka, failed to achieve this. Furthermore, the percentage of GDP per capita income are 6, 0.4 and 2 in 2022, 2023 and 2024 in Pakistan respectively. During the years 2022, 2023, and 2024, the corresponding percentages of GDP per capita income in Nepal were 5.8 percent, 4.1 percent, and 4.9 percent respectively. Comparatively between Bangladesh and India the percentage of GDP per capita income is practically identical in both countries.. The percentage of GDP per capita income in Bhutan is the lowest it has been in the past three years, when compared to the other SAARC countries that have positive per capita incomes. In Afghanistan, the percentage of GDP per capita income is equal in 2022 and 2024 which is 5.9 while in 2023 it was 5.6.

Overall, we can see a clear upward in the percent of GDP per capita income was 12.3 in 2022 in Maldives, while the percent of GDP per capita income in 2023 and 2024 seem to have almost similar with other SAARC countries except Sri Lanka.

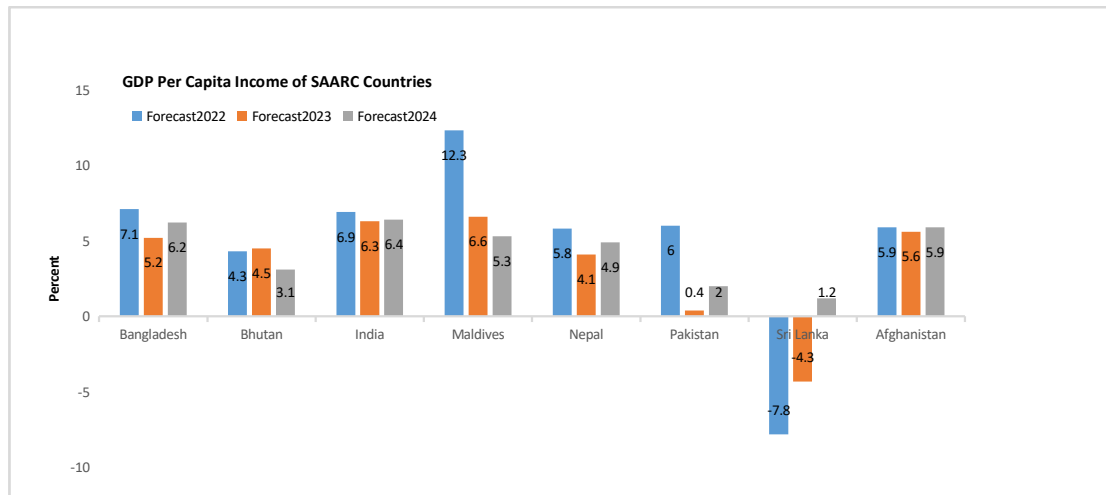


Figure 3-3 GDP Per Capita in SAARC Countries

Source: World Bank

3.2.3 Economic Ranking of SAARC Countries

As shown in the figure3-4, The chart gives information regarding the economic ranking of SAARC countries between the years 2022 and 2023.

The bar chart indicates that Bhutan's economic ranking improved in both of the years, with the country receiving a position of 163 and 160 respectively. As a point of comparison, the economic ranking differential between Pakistan and Sri Lanka in 2022 and 2023 was nearly identical, coming in at 44.50 and 67.62 respectively. In addition, the Maldives has a ranking of 149 and 145 from the year 2020 to the year 2023, which is practically same. However, Bangladesh and Afghanistan had quite different economic rankings in 2022 and 2023. In 2022, Bangladesh was ranked 44th, while Afghanistan was ranked 117th. In 2023, Bangladesh was ranked 25th, and Afghanistan was ranked 107th.

In conclusion, we can observe that India maintained a relatively low economic ranking from 2022 to 2023, with positions of 5 and 3, which are significantly different among all SAARC countries.

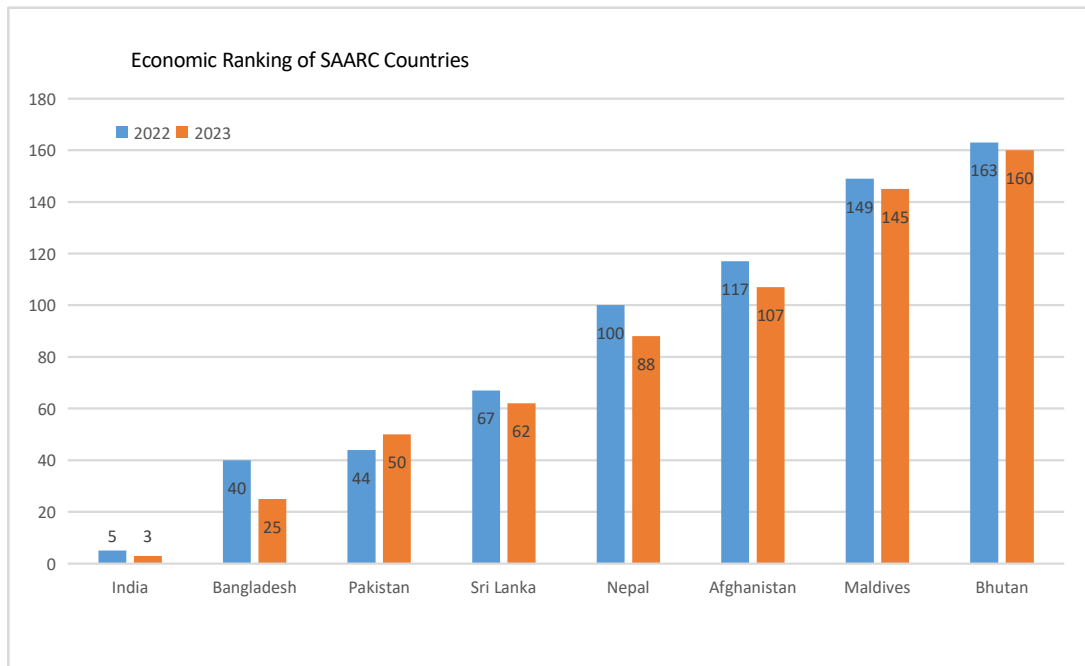


Figure 3-4 Economic Ranking in SAARC Countries

Source: WELT

3.3 Chapter Summary

SAARC countries has diverse trends in Foreign Direct Investment (FDI) and GDP growth. India experienced FDI fluctuations more which peaked at \$64.36B in 2020, followed by a decline in 2021 and 2022. Bangladesh demonstrated steady FDI growth which stands at \$1.56B in 2022. Sri Lanka faced FDI decline to \$1.08B in 2022. Afghanistan had minimal FDI but saw an increase to \$1.30B in 2022 in the new transformation of the economy. Bhutan and the Maldives had minimal FDI comparatively. Nepal's FDI declined to \$95B in 2022, while Pakistan faced consistent decline at \$1.34B in 2022 due to its political instability. The GDP growth varies significantly in different countries which reflected economic challenges and recoveries across the SAARC nations.

Chapter 4 Theoretical Analysis

FDI itself is a complex of capital stock, knowledge, and technology, which can effectively alleviate the scarcity of these economic factors within a country. Therefore, absorbing and utilizing foreign direct investment has become an important component for almost all developing countries to develop their open economy. On the one hand, FDI can directly bring about capital effects, thereby directly affecting the economic growth of the host country; On the other hand, FDI can indirectly affect the economic growth of host countries by influencing other economic factors.

4.1 The direct impact of FDI on economic growth

American scholars Channery and Straw first systematically explained through the "double gap" theory. The study describes the direct capital effects of foreign direct investment, which is a synthesis of the theories of Rosen Statham and McKinnon. Rosen Statham mainly conducts research from the perspective of increasing external investment. He found that in the process of developing a country's economy, insufficient savings may lead to insufficient investment. At this point, the introduction of foreign investment will have a positive impact. It bridges the gap between domestic investment and the funds needed to achieve economic growth goals, and can promote employment. McKinnon et al. conducted research from the perspective of promoting international balance of payments. They believe that the difference in economic strength between developing and developed countries will inevitably lead to external economic imbalances, which are mainly caused by imports and exports. The low ability of developing countries to generate foreign exchange income and relatively high import volumes have led to this imbalance, resulting in a foreign exchange gap. This gap will exacerbate and worsen under natural conditions, leading to a savings gap. At this point, introducing foreign investment will directly or through increasing exports to compensate for the shortage of import funds in developing countries, thereby achieving external economic balance. The inflow of foreign direct investment can simultaneously fill these two gaps, thereby promoting healthy economic growth in developing countries.

4.2 The indirect impact of FDI on economic growth

4.2.1 Technology Spillover Effect

Caves (1975) was the first to propose the technology spillover effect of FDI, which refers to the demonstration effect and competition effect brought about by the entry of foreign enterprises, resulting in technological progress; Blomström et al. (1999) and Zhang Jianhua and Ouyang Yiwen (2003). Proposing the personnel training effect, it is believed that the personnel training effect, demonstration effect, and competition effect are the main manifestations of technology spillover effects within the FDI industry.

The personnel training effect refers to the fact that local employees hired by foreign-funded enterprises in the host country generally receive higher training in both production and management skills than domestic employees in the host country, resulting in significantly higher production efficiency. The outflow of foreign employees and private interactions with domestic employees will to some extent cause technology spillovers, which will help domestic enterprises improve labor productivity. The technological advantages and management experience of foreign-funded enterprises have become role models for domestic enterprises to learn from, and the continuous learning from foreign enterprises by domestic enterprises is a demonstration effect.

The competitive effect is due to the fact that the entry of foreign companies will intensify the competition among companies in the same industry in the host country, forcing local enterprises to increase research and development investment and human capital investment in order to cope with the increasing external competitive pressure, and to update and upgrade production equipment and products. Therefore, this effect is also known as the (Crowding in Effect) (Zhang et al., 2014). The competitive pressure from foreign-funded enterprises on domestic enterprises creates a sense of survival crisis for domestic enterprises and generates motivation for learning and progress; When domestic enterprises narrow the gap through learning, foreign-funded enterprises feel the competitive pressure of domestic enterprises, and accelerate the pace of introducing more advanced technology from their home country, widening the gap and giving domestic enterprises space to continue learning and catching up. Of course, this competitive effect may also bring negative technology spillovers, that is, if the competitive advantage of foreign enterprises entering the market is too obvious, such as their technological capabilities being far stronger than local

enterprises, while also having strong localization experience ability, it may exclude local enterprises from the market or make their operations difficult and productivity decline, The crowding out effect of foreign investment in the market (Chen Yimao and Li Chunyan, 2019; Yang Huan, 2019). However, recently many scholars have pointed out that the existence of this crowding out effect has not been observed in most studies (Cheung and Lin, 2004; Li et al., 2013; Meyer, 2003; Monsteriotis and Alegria, 2011; Perri and Peruffo, 2016).

The main channel for technology spillover effects between FDI industries comes from the forward and backward correlation effects between domestic and foreign enterprises. After entering the host country's market, foreign enterprises, to a greater or lesser extent, engage in certain business transactions with upstream and downstream enterprises in their respective industries for production needs. For upstream raw material supply enterprises, due to the high technical requirements for raw materials, relevant technical standards can be used to promote innovation among upstream enterprises, resulting in a backward correlation effect; In order to promote product sales, foreign-funded enterprises will also provide certain technical guidance to downstream enterprises, so that they can better use the products produced by multinational corporations, and further promote innovation in downstream enterprises through the new products provided by multinational corporations, namely the forward correlation effect.

In summary, the channels through which FDI technology spillover effects are generated mainly include personnel training effects, intra industry demonstration effects, competition effects, and forward and backward correlation effects between industries.

4.2.2 Human capital

Human capital and technology advancements are the two primary drivers of economic development, according to new growth models (Romer, 1986, 1990 and 1994; Lucas, 1988), in contrast to neoclassical models, which hold that technological progress is external. The new endogenous growth models, according to Nair-Reichert and Weinhold (2001), incorporate long-term growth as an indicator of technological progress. This, in turn, allows foreign direct investment (FDI) to permanently boost the host country's economic growth rate through transfer of technologies, transmission, and spillover effects.

In spite of the fact that both the exogenous and endogenous growth theories contend that the accumulation or production of capital is a significant factor in determining economic development, they approach technical advancement in quite different ways. Both the previous and the latter claim that technical development is enhanced endogenously – by the growth in knowledge and invention (Borensztein et al., 1998; de Mello, 1999; Elboiashi, 2011; Al Nasser, 2010). The earlier group considers technological progress to be exogenous to the model, while the latter considers it to be endogenous. It is presumed that foreign direct investment (FDI) from multinational companies (MNCs) would bring about research and development (R&D), in addition to the accumulation of human resources. This will result in either positive or negative impacts, also known as growth spill-overs, which will have an impact on the enterprises and economy of the host country (Barro and Sala-I-Martin, 1995). These growth determinants, also known as foreign direct investment spillovers, are presumed to originate from spending on physical capital, labor capital, or research and development.

Foreign direct investment (FDI) may have both direct and indirect effects on economic development, as seen in the two growth theories and the FDI-economic growth image up top. Accumulating wealth, new goods, and foreign technology (exogenous-growth theory view), and an increase in the host nation's stock of expert knowledge (endogenous growth theory) are two ways in which foreign direct investment (FDI) can theoretically increase the economy of the country receiving the investment (Elboiashi, 2011). Foreign direct investment (FDI) is a key driver of economic development in the host nation, according to Herzer et al. (2008). This is because FDI increases investment capacity and facilitates technical spillovers. The OECD (2002) goes on to say that foreign direct investment (FDI) could be a source of long-term growth and development because of its supposed capacity to do things like (i) create technological spill-overs; (ii) aid in the advancement of labour capital; (iii) facilitate the host country's integration into worldwide economic trade cooperation; and (iv) help create a more favorable business climate and boost the development of companies.

4.2.3 Sustainability

In order to fulfill the UN sustainable development goals (SDGs), it is crucial for foreign direct investment (FDI) to recover in all sectors. However, corporations from sectors that do not have clear connections to the SDGs seem to have a lesser commitment to sustainability. Foreign Direct Investment (FDI) is essential for achieving economic growth and ensuring sustainable development. Various pathways are available for these positive contributions to manifest. Foreign investment frequently enhances economic growth in host economies by increasing both total factor productivity and the efficient allocation of resources, surpassing the impact of domestic investment alone. Moreover, foreign direct investment (FDI) can enhance the integration of host economies into global trade by granting them enhanced entry to international markets, fostering the growth of local export capacities, and integrating them into global value chains. Moreover, multinational enterprises (MNEs) frequently introduce novel technologies in the countries they invest in. As a result, foreign direct investment (FDI) can facilitate the transfer of technology to local industries and stimulate innovation diffusion, particularly by establishing connections with local suppliers. Furthermore, Foreign Direct Investment (FDI) generates employment opportunities both directly and indirectly by establishing connections with small and medium-sized domestic companies, known as backward and forward linkages. Additionally, FDI contributes to the development of human capital by spreading new skills, knowledge, and management techniques. This can be advantageous for both multinational enterprise (MNE) workers and local firms that serve as suppliers to MNEs. Foreign investment can also promote increased competition in the countries where it takes place, resulting in improvements in productivity, reduced pricing, and more effective distribution of resources. FDI has the capacity to provide social and environmental advantages to host nations by spreading responsible business conduct practices, as outlined in the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises.

4.2.4 Income Disparity

Income disparity is a significant economic issue that affects a large number of individuals in society. Various strategies have been devised to address this issue. Furthermore, internal and external policies are implemented in relation to this matter. Previous tax policy modifications have been effectively implemented through internal policies, resulting in favorable consequences. By redistributing wealth from affluent areas to impoverished areas, also can effectively bridge the socioeconomic disparities between them. Furthermore, fiscal policies have the potential to ensure equitable access to education and enhance human capital, so assisting the impoverished in mitigating economic disparity. Other economic elements are deemed accountable for it and have the potential to diminish it. External capital inflows, such as remittances, foreign direct investment (FDI), and foreign aid, are seen as the factors that contribute to the decrease in income disparity.

It is important to give careful consideration to foreign direct investment (FDI) regulations in order to attract investors from other countries and decrease the disparity in income among developing nations in the South Asian Association for Regional Cooperation (SAARC). Foreign Direct Investment (FDI) offers the labor force the chance to be employed by multinational corporations (MNCs), resulting in an increase in job prospects. In addition to external policies, governments are also recommended to provide their citizens with opportunities to enhance human capital by further expanding the level and quality of education. This will help to strengthen the influence of foreign direct investment (FDI) on income disparity. The concept of human capital serves as a catalyst for enhancing the productivity of the labor force, which is the central idea of the endogenous growth theory. The enhanced efficiency of the workforce will further amplify foreign direct investment (FDI) returns, resulting in increased profitability for investors. I posit that the implementation of both external and internal policy coordination will result in a more efficient reduction of income disparity in SAARC countries.

4.2.5 Trade openness

Foreign direct investment (FDI) and trade openness have a substantial impact on technical advances, suggesting that they serve as good indices of technological advancements in SAARC countries. I propose that countries lacking in technological advancements should enhance their foreign direct investment (FDI) in order to enhance innovation, as indicated by the research findings. Policymakers should develop impactful strategies to incentivize increased foreign direct investment (FDI), as it stimulates innovation. In order to foster regional innovation, it is imperative for the government to enhance trade volumes. In order to

promote technological innovation in the SAARC countries, it is necessary to implement stringent guidelines that would lead to an increase in the allocation of funds towards research and development (R&D).

Null hypothesis: There is no positive and significant relationship between FDI and Growth Rate of GDP

Alternative hypothesis: There is a positive and significant relationship between FDI and Growth Rate of GDP.

4.3 Chapter Summary

The researcher used a secondary research strategy to analyse the impact of foreign direct investment on economic growth in SAARC countries. The analysis utilized data from reliable sources such as National Statistical Organisations, SAARC Central Banks, IMF and World Bank. Ethical considerations were university approval, rigorous data evaluation, citation approaches to prevent plagiarism concerns and ensuring privacy or confidentiality issues while handling personal information. Despite the absence of formal consent due to the nature of secondary research, the researcher maintains a commitment to ethical data collection and usage. The study maintains academic integrity, avoids bias and presents findings transparently. This demonstrates the maximum level of professionalism and intellectual honesty while investigating the FDI's effect on economic growth in SAARC countries.

Chapter 5 Empirical Analysis

5.1 Economic model and data

5.1.1 Economic model

Economic Modelling and relationship: In the analysis part, after collecting the quantitative data and information about the FDI, and economic growth-related data, the researcher will run regressions (OLS, Random Effect, Fixed Effect and FGLS) in Stata to show the relationship among the dependent and independent variables within the research. The variables and relationship are shown below:

$$Y_{Git} = b_0 + b_1 * FDI_{it} + b_2 * EXP_{it} + b_3 * IMP_{it} + b_4 * INF_{it} + b_5 * UNEMP_{it} + b_6 * TA_{it} + \varepsilon_{it}$$

Here,

YG = GDP growth

FDI= Foreign direct investment

EXP= Export

IMP= Import

INF= Inflation

UNEMP= Unemployment

TA= Technological Advancement

ε = Error term

Where I represents countries and t is the time. The objective of this statistical method is to examine the connections between the dependent variable GDP growth (Yg) and the following explanatory or independent variables: FDI, exports, imports, inflation, and employment. In the regression model, b0 to b5 are the coefficients to quantify the impact of each independent variable on GDP growth. The researcher has evaluated the importance and strength of the connections among FDI, exports, imports, inflation, employment, and GDP growth using regression analysis. The generated coefficients will quantify the impact of each independent variable on the dependent variable, allowing for the identification of the most influential factors affecting economic growth within the SAARC countries. Stata allowed the researcher to conduct rigorous statistical tests and achieve trustworthy results during the regression analysis. Here, Export, Import, Inflation, and Unemployment are control variables.

5.1.2 Variable Defining and data sources

(1) Dependent variable

GDP growth

The growth rate of the GDP is the main dependent variable in this dissertation. The economic value of a country is measured mainly by the value of gross domestic product (Adegboye et al., 2021). Gross domestic product is calculated by summing up consumption amount, investment amount, government expenditures amount and net export amount during a particular time scale (Faisal et al., 2021). The growth rate of GDP is calculated as the percentage change in the value of the GDP of a country from one period to another period (Khan et al., 2023). In this case, the time scale can be annual quarterly or semi-annually (Magazzino & Mele, 2022).

(2) Core independent variable

Foreign direct investment

Foreign direct investment is the main explanatory variable to be used to measure the impact on the growth rate of GDP across eight countries during the last 10 years. Foreign direct investment is calculated as the net inflow of capital from foreign entities into the local country over a specific time (Pekarčíková et al., 2022). Foreign capital or foreign investments include reinvested earnings, equity investments and intercompany loans. The data on foreign investments have been collected from secondary sources (Saqib & Dincă, 2023). It is expected that foreign direct investment will influence the growth rate of GDP positively because it directly contributes to the national economy by different factors (Wang et al., 2023). For instance, inflows of foreign capital to the national economy increase opportunities for business expansion of local companies (Adegboye et al., 2021). That is why there is ample scope for the creation of different types of employment opportunities as well. This will in turn reduce the unemployment rate of the local economy. It has been identified that often foreign capital comes with technological advancements in the national economy. That is why the inflows of foreign capital to the national economy will improve overall economic activities (Khan et al., 2023). For this reason, the influx of expertise and foreign capital to the national economy will provide a higher level of efficiency in production systems and hence will expand the output of the national economy (Pekarčíková et al., 2022). In this way, foreign direct investments positively influence the growth rate of GDP.

(3) Control variables

Export

If there is a high number of exports every year, then it will add to the gross domestic product of a national country by generating foreign revenue from the sale of operational goods and services to foreign markets (Wang et al., 2023). That is why if there is a strong performance in export management then it will boost economic growth which will also contribute to the expansion of GDP in the national economy (Pekarčíková et al., 2022). For this reason, it is expected that there is a positive relationship between total export size and the growth rate of GDP. When exports are increased in a country, then people will have a higher level of standard of living. That is where there will be more and more business opportunities and hence it will influence the growth rate of GDP positively (Khan et al., 2023). In this way, total export increment will influence the growth rate of the national economy positively. In this research study, total export size is one of the control variables for identifying the true impact of FDI on the growth rate of GDP (Khan et al., 2023).

Import

Total import represents operational goods and services that a country purchases from different types of foreign sources from other countries (Adegboye et al., 2021). Total input size can impact the growth rate of GDP by affecting investment patterns and domestic consumption. It can be stated that if there is a higher level of imports in the domestic country then it will reflect a higher demand for foreign goods as well (Wang et al., 2023). That is why the dynamics will potentially impact domestic production and hence domestic growth. In this way, there exists a negative relationship between total import size and the growth rate of GDP (Magazzino & Mele, 2022). Total import value is calculated as the total value of services and goods a country purchases from foreign countries during a specific time scale.

Inflation

The rate of inflation is the general incremental rate in the price of the basket of goods and services. If there is a high rate of inflation, then it will significantly reduce the purchasing power of individuals (Khan et al., 2023). For this reason, a high rate of inflation will disrupt consumer spending in a natural way which will also influence investment decisions (Khan et al., 2023). That is why there will be a negative consequence on the overall economic growth of the country. In addition, when the rate of inflation increases, the cost of capital also increases (Faisal et al., 2021). That is why business organizations do not take loans from different sources to expand their business opportunities. In this way, the inflation rate increases and hence it negatively impacts the growth rate of the national economy (Faisal et al., 2021). For this reason, it can be stated that there exists a negative

relationship between the rate of inflation and the growth rate of GDP (Magazzino & Mele, 2022). The rate of inflation can be calculated by applying different types of measurements like producer price indices or consumer price indices. Those measurements reflect changes in the prices of goods and services over time. The percentage change in those indices reflects the value of the inflation rate (Magazzino & Mele, 2022).

Unemployment

The rate of unemployment in an economy is calculated as the percentage of the total labour force that is unemployed as well as actively seeking employment opportunities (Wang et al., 2023). The number of unemployed individuals are not currently employed but also actively are looking for a particular job. In addition, the total number of people who are either employed or unemployed elsewhere and less actively seeking job opportunities to become employed is known as the total labour force (Wang et al., 2023). The rate of unemployment has a negative relationship with the growth rate of GDP. If there is a high amount of unemployment rate in the country, then it reflects that there is less scope for business expansion (Saqib & Dincă, 2023). In addition, the economy has become stringent for having a high rate of unemployment. That is why there will be less scope for business opportunities and hence economic activities will not be improved simultaneously (Saqib & Dincă, 2023). In this way, there will be a decreasing rate of GDP for increasing the rate of unemployment in the country. For this reason, it can be stated that the relationship between the rate of unemployment and the growth rate of GDP is negative.

Technological Advancement

Technological advancement is the discovery or generation of new knowledge which can advance the underlying dynamics of technology and sciences in the country. That means it is the improvement as well as innovation of the utility of natural sciences. Technological advancement is the process of developing or identifying new technologies which is driven by different types of factors like economic incentives or scientific discoveries as well as social requirements. Technological advancement is an important control variable for this research study to identify its impact on the GDP growth rate. There exists a positive relationship between GDP growth rate and technology advancement because technological advancement increases operational efficiency and hence national productivity goes up. For this reason, incorporating this control variable is essential to this research. However, it is a fact that there exists no proxy data for identifying technological advancement in SAARC countries. For this reason, in this research study, the researcher has not incorporated technological advancement as a control variable in empirical analysis.

Data source & Research strategy

The researcher used secondary sources to conduct the research project "The impact of foreign direct investment on economic growth (Based on the evidence of SAARC countries)". The National Statistical Organizations, SAARC Central Banks (each countries central banks for GDP growth rate), the International Monetary Fund (IMF) and World Bank (WDI Databank) (for control variables), UNCTADstat (specially for GDP & FDI) and other international research organizations are among these sources. In addition, mentioned specific data aren't taken from their specific sources always, sometimes cross referencing has deployed because of data dissimilarity and updated ones has taken. Economic data and information are available in the secondary sources. The SAARC nations' GDP growth rates show the pace of economic expansion over specific periods, revealing their economic performance. Employment data show job growth and unemployment trends in the labour market. To assess price level changes and their influence on SAARC economies, inflation rates have been examined. To better understand trade trends and these countries' global economic integration, export and import data have been analyzed. The researcher will analyse SAARC countries' economic metrics using secondary data. However, the researcher has been exceedingly diligent in obtaining the data and has examined it to make sure it is authentic and consistent across all sources. This has reduced errors and biases for the researcher. This will be achieved by triangulating information from many reliable sources.

The researcher has chosen a secondary research strategy for assessing the impact of foreign direct investment on economic growth from the context of the SAARC countries.

5.1.3 Descriptive Statistics

GDP Growth Rate

As shown in the table 5-1, From the table of descriptive statistics, it can be observed that the average value of the growth rate of gross domestic product across the SAARC countries is around 4.08% during the last 10 years from 2013 to 2022. The value of standard error is only 0.85%. It means that there does not exist a significant amount of deviation from the mean value based on sampling distribution. The median value of the growth rate of gross domestic product is around 5.57%. It means that 50% of observations in the data set have a value for the growth rate of GDP around more than 5.57%. On the other hand, the rest of the data set has a value for the growth rate of the GDP less than 5.57%. It has also been identified in the data set that the mode value of the growth rate of GDP is 6.01%. That means it has the highest frequency in the collected data set for the growth rate of GDP from the SAARC countries. The standard deviation and the sample variance are very low for the growth rate of GDP. The sample variance is only 1%. It means that the average squared deviation of each data point from the average value is only 8%. The value of kurtosis of the growth rate of GDP is 15.01. It means that the distribution of the growth rate of GDP for eight countries has a very high peak. That is why the distribution based on the value of kurtosis for the growth rate of GDP is leptokurtic. The value of skewness measurement of the growth rate of GDP is negative. That is why it can be stated that the distribution of the growth rate of GDP is negatively skewed. That means the mean value is the lowest of the median value and mode value. It has also been identified that the minimum value of the growth rate of GDP across all the countries is -33.41%, which is the case for Maldives in 2020. On the other hand, the maximum value of the growth rate of GDP is 41.75%. This value has been found for Maldives in 2021.

Inflation

It has been identified from the table of descriptive statistics that the inflation rate across all the countries during the last ten years of 2013 to 2022 has a mean value of 5.45%. The value of standard error is 0.68% for the rate of inflation. This is a very low rate of standard error which reflects that there exists a very lower deviation of the values based on sampling distribution from their average value in the data set. It can be seen from the above tabulation that 5.02% is the median value of the inflation rate. It means that 50% of observations of the entire data set have a value of an inflation rate of more than 5.02% and the rest 50% of values in the data set have an inflation rate of less than 5.02%. In addition, the value which has the highest frequency in the data set for the variable of the inflation rate is around 7.70%. That is why this value is known as the mode value. From the table, it can also be seen that the sample variance value is nearly 0% for the inflation rate in the data set. That means there exists very minimal deviation of each data point from their central value. That is why the average square deviation of each value from their average value is around 6%. That means the data points of the data set for the inflation rate variable are not highly scattered. It can also be seen from the table of descriptive statistics that the value of kurtosis is around 36.09 for the inflation rate. That means there exists a High Peak in that data set for the inflation rate variable. In addition, as the value of kurtosis is positive, is why the distribution of the inflation rate variable leptokurtic. On the other hand, the value of skewness statistics is around 5.01. As the value of skewness is positive, that is why it can be stated that the distribution of the inflation rate variable during the last ten years is positively skewed. For this reason, the mean value will be higher than the mode value and median value. The minimum value of the inflation rate is -5.80% which is the case of deflation, and it was found in Afghanistan in 2021. On the other hand, the maximum value of inflation rate during the last ten years across all the countries is around 49.72% which has been found in Sri Lanka in 2022.

Unemployment

From the table of descriptive statistics, it can be seen that the average value of the unemployment rate across the SAARC countries is around 6.42% during the last 10 years from 2013 to 2022. The value of standard error is only 0.32%. It means that there does not exist a significant amount of deviation based on sampling distribution from the mean value. The median value of the unemployment rate is around 5.30%. It means that 50% of observations in the data set have a value for the unemployment rate of more than 5.30%. On the other hand, the rest of the data set has the value for the unemployment rate less than 5.30%. It has also been identified in the data set that the mode value of the unemployment rate is 7.95%. That means it has the highest

frequency in the collected data set for the unemployment rate from the SAARC countries. The standard deviation and the sample variance are very low for the unemployment rate. The sample variance is less than 1%. It means that the average squared deviation of each data point from the average value is less than 3%. The value of the kurtosis of the unemployment rate is -0.79. It means that the distribution of the unemployment rate for eight countries has a normal peak. That is why the distribution based on the value of kurtosis for the unemployment rate is platykurtic. The value of the skewness measurement of the unemployment rate is positive. That is why it can be stated that the distribution of the unemployment rate is positively skewed. That means the mean value is greater than the median value and the mode value. It has also been identified that the minimum value of the unemployment rate across all the countries is 1.83%, which is the case for Pakistan in 2014. On the other hand, the maximum value of the unemployment rate is 13.08%. This value has been found for Nepal in 2020.

Export

The average value of total export size across eight countries during the last ten years of 2013 to 2022 is nearly USD 74.30 billion. It has been identified from the table of descriptive statistics that the standard error value for export size is around 19.86. It means that there exists a USD 19.86 billion deviation based on sampling distribution regarding their average value across eight countries. Additionally, it has been identified that the median value for export size is nearly USD 2.65 billion. This value reflects that 50% of observations in the data set have a value of export size of more than USD 2.65 billion and the rest 50% of observations of that data set have a value of export size of less than USD 2.65 billion. The value of export size which has the highest amount of frequency is known as the mode value, which is nearly USD 0.20 billion. It can also be seen from the above table that the average squared deviation value of the data points from the average is nearly USD 177 billion. That means it can be stated that the export size across the eight countries is highly scattered based on the nature of different countries. Additionally, the kurtosis measurement has a value of 4.98 for the variable of export size. As the value is positive, that is why it can be stated that the distribution of the variable of export size has a High Peak and hence it is known as leptokurtic distribution. Additionally, it has been identified that the value of skewness measurement is 2.50. That is why it can be stated that the distribution of the variable of export size across eight countries will be positively skewed. That means the average value of the total export size will be greater than the median value and mode value. The minimum amount of export size is around USD 0.10 billion, which is the case of Maldives in 2021. On the other hand, the maximum amount of total export size is around USD 759.93 billion. The maximum value is for India in 2022.

Import

The average value of imports during the last ten years of 2013 to 2022 across eight countries of the SAARC is around USD 87.29 billion. From the table of descriptive statistics, it can be seen that USD 5.45 billion is the value of standard error. The reflects the standard deviation of import variable for different sampling distributions. The median value for the variable of import is USD 11.80 billion. The median value reflects that 50% of observations of import variables across different countries have the value of import size less than USD 11.80 billion. On the other hand, another 50% of observations of import variables across eight countries have a value of import size of more than USD 11.80 billion. In addition, it can be seen from the table that the mode value is USD 26.50 billion which has the highest frequency in the data set of import variables. The standard deviation value of the import variable is USD 192 billion. It means that on average, that is square deviation of the data points of import variable from the average value is USD 192 billion. The value of the kurtosis measurement is 5.18. That is why it can be strongly stated that the distribution of total import size across different countries has a very High Peak because the value of kurtosis is positive. Additionally, the value of skewness is 2.53. For this reason, it can be stated that the distribution of the total import size variable across eight countries will be positively skewed and hence the mean value or the average value will be greater than other statistics of central tendency. The maximum value of total import size is USD 820 billion which is the case of India in 2013. However, the minimum import size across eight different countries during the last ten years is only USD 1.10 billion and it has been found in the data set of Bhutan in 2022.

FDI

The average value of total FDI size across eight countries during the last ten years of 2013 to 2022 is nearly USD 23.86 billion. It has been identified from the table of descriptive statistics that the standard error value for FDI size is around 5.45. It means that there exists a USD 5.45 billion deviation based on sampling distribution regarding their average value across eight countries. Additionally, it has been identified that the median value for FDI size is nearly USD 1.36 billion. This value reflects that 50% of observations in the data set have a value of FDI size of more than USD 1.36 billion and the rest 50% of observations in that data set have a value of FDI size of less than USD 1.36 billion. The value of FDI size which has the highest amount of frequency is known as the mode value, which is nearly USD 0.01 billion. It can also be seen from the above table that the average squared deviation value of the data points from the average is nearly USD 48.75 billion. That means it can be stated that the FDI size across the eight countries is highly scattered based on the nature of different countries. Additionally, the kurtosis measurement has a value of 4.88 for the variable of FDI size. As the value is positive, that is why it can be stated that the distribution of the variable of FDI size has a High Peak and hence it is known as leptokurtic distribution. Additionally, it has been identified that the value of skewness measurement is 2.34. That is why it can be stated that the distribution of the variable of FDI size across eight countries will be positively skewed. That means the average value of the total FDI size will be greater than the median value and mode value. The minimum amount of FDI size is around negative USD 0.02 billion, which was the case in Bhutan in 2017. On the other hand, the maximum amount of total FDI size is around USD 217 billion. The maximum value of total FDI size is for Nepal in 2013.

Table 5-1 Descriptive Statistics

Particulars	GDP Growth Rate	Inflation	Unemployment	Unemployment	Import	FDI
Mean	4.08%	5.45%	6.42%	74.30	87.29	23.86
Standard Error	0.85%	0.68%	0.32%	19.86	21.47	5.45
Median	5.57%	5.02%	5.30%	2.65	11.80	1.36
Mode	6.01%	7.70%	7.95%	0.20	26.50	0.01
Standard Deviation	0.08	0.06	0.03	177.62	192.00	48.75
Sample Variance	0.01	0.00	0.00	31,549.	36,863.	2,376.2
Kurtosis	15.01	36.09	-0.79	34	64	2
Skewness	-0.60	5.01	0.57	4.98	5.18	4.88
Range	0.7524	0.5552	0.1125	2.50	2.53	2.34
Minimum	-	-	-	759.83	819.10	217.02
Maximum	33.49%	-5.80%	1.83%	0.10	1.10	(0.02)
	41.75%	49.72%	13.08%	759.93	820.20	217.00
				5,943.6	6,983.2	1,908.4
Sum	3.265	4.3595	5.135	1	6	2
Count	80	80	80	80.00	80.00	80.00

5.2 Empirical results analysis

Correlation Analysis

The correlation analysis between the growth rate of GDP and other variables is tabulated below as follows –

Table 5-2 Pairwise Correlation Analysis

Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) GDP Growth Rate	1.000					
(2) Inflation	-0.043	1.000				
(3) Unemployment	-0.142	-0.057	1.000			
(4) Export size	0.088	0.140	0.185	1.000		
(5) Import size	0.113	0.181	0.027	0.947	1.000	
(6) FDI size	0.127	0.176	0.438	0.622	0.566	1.000

From the above table of pairwise correlations among different variables used in the data set, it can be seen that the growth rate of GDP across eight countries is negatively correlated with the inflation rate. The correlation coefficient between the GDP growth rate and the inflation rate is -0.043. From this correlation coefficient value, it can be stated that the linear relationship between the inflation rate and the growth rate of GDP is negative. That is why when the inflation rate is increasing in an economy, it will decrease the growth rate of the GDP of that particular economy as well. However, the magnitude of the strength of the linear relationship between the inflation rate and the growth rate of GDP is not very strong or medium.

In addition, from the table of correlation analysis, it can be identified that the linear relationship between the rate of unemployment and the growth rate of GDP across eight countries during the last ten years is -0.142. The value of the correlation coefficient reflects that there exists a negative linear relationship between the rate of unemployment and the growth rate of GDP as the correlation coefficient shows a negative figure. In addition, the correlation coefficient value reflects that the extent of linear association between the rate of unemployment and the growth rate of GDP is very low. For this reason, it can be predicted that if the rate of unemployment increases in the economy, then it will negatively impact the growth rate of GDP in the economy.

The linear relationship between total export size and the growth rate of GDP shows a positive value according to the table of correlation coefficients. The value of the correlation coefficient between the growth rate of GDP and total export size is 0.088. This value of 0.088 reflects that there exists a positively linear relationship between the growth rate of GDP and export size across eight countries during the last ten years from 2013 to 2022. That is why it can be predicted that if the economy can increase its

export value to other countries, then it will be able to increase its growth rate of gross domestic product. However, the value of the correlation coefficient is very near zero. That is why the value of the correlation coefficient reflects that the extent of the linear relationship between the growth rate of GDP and total export size is very low.

From the above table of pairwise correlations, it can be seen that the value of imports across eight countries is positively correlated with the growth rate of GDP during the last 10 years. It has been identified that the correlation coefficient between total import size and the growth rate of GDP is 0.113. That is why it can be predicted that if the country can increase their import value from other countries, then it will positively influence the growth rate of GDP because the standard of living will be increased. However, it can be seen that the magnitude of the linear relationship between total import size and the growth rate of GDP is not very strong because the value of the correlation coefficient is very low.

The table of pairwise correlations provides the highest value of the correlation coefficient between the size of foreign direct investment and the growth rate of GDP. From the above table, it can be seen that the correlation coefficient value is 0.127. This value reflects that there exists a positively linear relationship between the size of foreign direct investment and the growth rate of GDP across eight countries during the last 10 years. From this correlation coefficient, it can be predicted that if there is an increasing amount of foreign direct investment in the economy, then it will increase the growth rate of the GDP of that economy. In addition, the value of the correlation coefficient reflects that there exists a medium level of strength for the linear relationship between the value of foreign direct investment and the growth rate of GDP.

Regression Analysis

Ordinary Least Squares Method (OLS): The ordinary least square method is a widely used and simple method for predicting the parameters of a linear regression model (Goddard & Melville, 2019). This model assumes that the errors of the regression equation will be homoscedastic which means there will be constant variance among the errors. In addition, the errors will be uncorrelated with any independent variables used in the linear regression (Rajkumar, 2021). This model aims to minimize the sum of its squared residuals which are mainly the differences between predicted values and the observed values (Goddard & Melville, 2019). This model is used in this research study because it is very straightforward to implement as well as interpret the regression coefficients (Rajkumar, 2021). Additionally, the formula for estimating parameters is relatively very easy to calculate (Gupta, 2021). When different types of classical assumptions like independence assumption linearity assumption endogeneity assumption and homoscedasticity assumption are made by the regression equation, then the estimates provided by this model will be efficient and unbiased in this research study (Gupta, 2021).

Table 5-3 OLS Model of Regression

Linear regression

GDP Growth Rate	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Log of FDI	.01	.004	2.24	.028	.001	.019	**
Inflation	-.137	.142	-0.97	.338	-.421	.146	
Unempl oyment	-.994	.404	-2.46	.016	-1.799	-.188	**
Log of Export	.001	.012	0.06	.953	-.024	.025	
Log of	-.006	.017	-0.36	.724	-.039	.027	

Import

Constant	.126	.048	2.63	.01	.03	.221	**
Mean dependent var		0.043	SD dependent var			0.076	
R-squared		0.110	Number of obs			77	
F-test		1.747	Prob > F			0.135	
Akaike crit. (AIC)		-176.397	Bayesian crit. (BIC)			-162.334	

*** $p < .01$, ** $p < .05$, * $p < .1$

First of all, the simple ordinary least square method has been applied to identify the causal relationship between the growth rate of GDP and the foreign direct investment size. The main explanatory variable, which is the log of FDI, has a positive coefficient with the growth rate of GDP. The value of the coefficient is 0.01. That is why it can be stated that if there is a 1% increase in FDI, then it will increase the growth rate of GDP by 0.01%. From this analysis, it can be strongly stated that there is a positive and significant impact of foreign direct investment on increasing the growth rate of GDP. In addition, the variable is also statistically significant at the 5% level because the P value is less than 5%. In this model of the ordinary least square method, the control variables are the rate of inflation, the rate of unemployment, export size, and import size. From the above regression table, it can be seen that the rate of inflation has a negative coefficient with the growth rate of GDP across eight countries during the last ten years of 2013 to 2022.

This is consistent with the result of correlation analysis, however, there is a negative linear relationship found between the rate of inflation and the value of the growth rate of GDP. The coefficient of the regression equation for the variable of the rate of inflation is -0.137. That means if there is a 1% increment in the rate of inflation, then it will decrease the growth rate of GDP by 0.137%. However, the variable of inflation rate is not significantly related to the growth rate of GDP because the P value of this variable is not statistically significant at the 5% significance level. In addition, the rate of unemployment has also a negative coefficient in the regression table. The result is also consistent with the result of the previous section because, in the correlation analysis, it has been identified that the unemployment rate is linearly negatively correlated with the growth rate of GDP. The value of the coefficient for the rate of unemployment is -0.994. The value reflects that if there is a 1% increase in the rate of unemployment in the economy, then it will decrease the growth rate of GDP by 0.994%. From the statistics of the P value of the rate of unemployment, it can be seen that the variable is statistically significant at a 5% significance level. That is why it can be strongly stated that the rate of unemployment is truly a predictor for predicting the growth rate of GDP across eight countries during the last 10 years.

Furthermore, it can be seen that the log of exports has a positive coefficient with the growth rate of GDP according to the ordinary least square method. The result is consistent with the correlation analysis because it has been identified that there exists a positive linear association between total export size and the growth rate of GDP. The value of the coefficient is 0.001. The value reflects that if there is a 1% increase in the log of exports to the economy, then it will increase the growth rate of GDP by 0.0001 unit. However, it can be seen from the above table that the variable of log of export is not statistically significant at 5% because the P value of the variable is more than 0.05. Another control variable of the regression model which is a log of import has a negative coefficient. The value of the coefficient is -0.006. This result is not consistent with the correlation analysis because it has been identified that there exists a linear positive correlation between the total size of imports and the growth rate of GDP. The value of the negative coefficient in the regression model reflects that if there is an increment in the log of exports by 1%, then it will decrease the growth rate of the GDP of the economy by 0.00006 units. However, it can also be seen from the regression table that

the variable is not statistically significant at the 5% significance level because the P value is more than 5%. In addition, from the above table of the ordinary least square regression model, it can be seen that the value of R-squared is 11%. The value reflects that 11% variability in the growth rate of GDP can be captured by variability in explanatory variables and other control variables. The value of the F test is 1.747 and the probability value is 0.135. From these statistics, it can be stated strongly that the overall model of ordinary least square regression is not statistically significant at the 5% significance level, because the probability value is more than 5%.

Random Effect Model (RE): Random effect models are used for analysing panel data in which individual level or cross-sectional units have heterogeneity cases (Dipak, 2019). This model resumes that cross-sectional effects are random, and they are randomly correlated with independent variables (Kumar, 2022). The normal structure of a random effect model includes not only random disturbances but also different types of time-invariant cross-sectional effects. The author has applied this because this model accounts for some unobserved cross-sectional characteristics that can affect the dependent variable (Kumar, 2022). That is why by applying this model those characteristics will not be constant over time (Dipak, 2019). When the efficiency is compared to the ordinary least squares method, the researcher will be able to provide a more efficient parameter when cross-sectional effects are present in the regression equation (Manoharan, 2020).

Table 5-4 Random Effect (RE) Model of Regression

Regression results

GDP Growth Rate	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Log of FDI	.01	.004	2.24	.025	.001	.019	**
Inflation	-.137	.142	-0.97	.334	-.416	.141	
Unemployment	-.994	.404	-2.46	.014	-1.786	-.202	**
Log of Export	.001	.012	0.06	.953	-.023	.025	
Log of Import	-.006	.017	-0.36	.722	-.039	.027	
Constant	.126	.048	2.63	.009	.032	.22	***
Mean dependent var		0.043	SD dependent var			0.076	
Overall r-squared		0.110	Number of obs			77	
Chi-square		8.733	Prob > chi2			0.120	
R-squared within		0.054	R-squared between			0.618	

*** $p < .01$, ** $p < .05$, * $p < .1$

Secondly, the random effect method has been applied to identify the causal relationship between the foreign direct investment size and the growth rate of GDP. The log of FDI, a key explanatory variable, has a positive coefficient with the growth rate of GDP. The value of the coefficient is 0.01. For this reason, it can be said that if there is a 1% increase in FDI, then it will increase the growth rate of GDP by 0.01%. From this analysis, it can be strongly stated that there is a positive and significant impact of foreign direct investment on increasing the growth rate of GDP. In addition, the log of the FDI variable is also statistically significant at the 5% level because the P value is less than 5%.

The coefficients of the control variables of the model have the same coefficients and significances as in the case of the OLS model. In addition, from the above table of the random effect method regression model, it can be argued that the value of R-squared is 5.4%, which is lower than the result of the OLS model. The value reflects that only 5.4% variability in the growth rate of GDP can be captured by variability in explanatory variables and other control variables. The value of the F test is 8.733 and the probability value is 0.120. From these statistics, it can be argued strongly that the overall model of random effect method regression is not statistically significant at the 5% significance level, because the probability value is more than 5%.

Fixed Effect Model (FE): When there is a requirement to control for different types of unobserved cross-sectional effects which might be constant over time, then fixed effect models are implicated in the research study (Rajkumar, 2021). This is obtained by including some cross-sectional intercepts in the regression equation (Kumar, 2022). This model uses those intercepts from the observed data by effectively eliminating the influence of different types of time-invariant individual or cross-sectional heterogeneity (Rajkumar, 2021). The model has been chosen because fixed effect models normally capture cross-sectional effects of time-invariant variables (Khan, 2021). That is why it has allowed the researcher to concentrate on individual or cross-sectional units' variations (Rohilla, 2020). In addition, by controlling for cross-sectional effect in regression, this model has enhanced the capability to establish significant causal relationships by eliminating the impact of different types of constant and observed confounding factors (Gupta, 2021).

Table 5-5 Fixed Effect (FE) Model of Regression

Regression results

GDP Growth Rate	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]	Sig
Log of FDI	.008	.016	0.54	.591	-.023 .04	
Inflation	.002	.163	0.01	.989	-.323 .328	
Unemployment	-1.321	.879	-1.50	.138	-3.076 .434	
Log of Export	-.039	.028	-1.40	.165	-.095 .017	
Log of Import	.066	.052	1.27	.207	-.038 .17	
Constant	.008	.156	0.05	.959	-.304 .32	
Mean dependent var			0.043	SD dependent var		0.076

R-squared	0.103	Number of obs	77
F-test	1.467	Prob > F	0.160
Akaike crit. (AIC)	-183.691	Bayesian crit. (BIC)	-169.628
*** $p < .01$, ** $p < .05$, * $p < .1$			

The random effect model does not take into consideration the differences among the panels or the countries in this case. However, every country has different dynamics and nature of economic stances. That is why a fixed effect model has been applied. The log of FDI, a key explanatory variable, has a positive coefficient with the growth rate of GDP. The value of the coefficient is 0.008. For this reason, it can be said that if there is a 1% increase in FDI, then it will increase the growth rate of GDP by 0.008%. From this analysis, it can be argued that there is a positive and significant impact of foreign direct investment on increasing the growth rate of GDP. However, the log of the FDI variable is not statistically significant at the 5% level because the P value is more than 5%. That is why under the fixed effect model, FDI is not a true determinant of GDP growth rate. From the above regression table, it can be said that the rate of inflation has a positive coefficient with the growth rate of GDP across eight countries during the last ten years of 2013 to 2022. This is inconsistent with the result of correlation analysis as there is a negative linear relationship found between the rate of inflation and the value of the growth rate of GDP.

The coefficient of the regression equation for the variable of the rate of inflation is 0.002. That means if there is a 1% increment in the rate of inflation, then it will increase the growth rate of GDP by 0.002%. However, the variable of inflation rate is not significantly related to the growth rate of GDP because the P value of this variable is not statistically significant at the 5% significance level. In addition, the rate of unemployment has also a negative coefficient in the regression table. The result is also consistent with the result of the previous section because, in the correlation analysis, it has been identified that the unemployment rate is linearly negatively correlated with the growth rate of GDP. The value of the coefficient for the rate of unemployment is -1.329. The value reflects that if there is a 1% increase in the rate of unemployment in the economy, then it will decrease the growth rate of GDP by 1.329%. From the statistics of the P value of the rate of unemployment, it can be argued that the variable is statistically insignificant at a 5% significance level. Furthermore, it can be argued that the log of export has a negative coefficient with the growth rate of GDP according to the random effect method. The result is inconsistent with the correlation analysis because it has been identified that there exists a positive linear association between total export size and the growth rate of GDP. The value of the coefficient is -0.039. The value reflects that if there is a 1% increase in the log of exports to the economy, then it will decrease the growth rate of GDP by 0.00039 units. However, it can be argued from the above table that the variable of log of export is not statistically significant at 5% because the P value of the variable is more than 0.05. Another control variable of the regression model which is the log of import has a positive coefficient. The value of the coefficient is 0.066.

This result is consistent with the correlation analysis because it has been identified that there exists a linear positive correlation between the total size of imports and the growth rate of GDP. The value of the positive coefficient in the regression model reflects that if there is an increment in the log of exports by 1%, then it will increase the growth rate of the GDP of the economy by 0.00066 units. However, it can also be argued from the regression table that the variable is not statistically significant at the 5% significance level because the P value is more than 5%. In addition, from the above table of the random effect method regression model, it can be argued that the value of R-squared is 10.3%, which is less than the result of the Random Effect model. The value reflects that 10.3% variability in the growth rate of GDP can be captured by variability in explanatory variables and other control variables. The value of the F test is 1.467 and the probability value is 0.160. From these statistics, it can be argued strongly that the overall model of fixed effect method regression is not statistically significant at the 5% significance level, because the probability value is more than 5%.

Feasible Generalised Least Squares Method (FGLS): This method is used to make corrections for heteroscedasticity problems in the error terms when the variance of the errors changes across different levels of independent variables (Basotia & Sharma, 2020). Additionally, this method assigns appropriate weights or contributions to the observations based on their error variance

(Dhingra & Dhingra, 2022). In this way, this model has helped to eliminate the influence of heteroskedasticity or serial correlation parameter estimation in this research (Basotia & Sharma, 2020). In addition, the researcher has incorporated this model as the model addresses the issues of heteroscedasticity problems by reducing weights on observations that have larger error variants (Dipak, 2019). That means this model gives more emphasis to those observations which have smaller variances (Elsayed, 2019). In this way, the model provides more efficient parameter estimation compared to other models (Goddard & Melville, 2019).

Table 5-6 Feasible Generalised Least Squares Model of Regression

Cross-sectional time-series FGLS regression

GDP Growth Rate	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Log of FDI	.01	.004	2.33	.02	.002	.018	**
Inflation	-.137	.136	-1.01	.315	-.405	.13	
Unemployment	-.994	.388	-2.56	.01	-1.754	-.233	**
Log of Export	.001	.012	0.06	.951	-.022	.024	
Log of Import	-.006	.016	-0.37	.711	-.037	.025	
Constant	.126	.046	2.74	.006	.036	.216	***
Mean dependent var		0.043	SD dependent var			0.076	
Number of obs		77	Chi-square			9.471	
Prob > chi2		.0917	Akaike crit. (AIC)			-176.397	
*** $p < .01$, ** $p < .05$, * $p < .1$							

Lastly, a Feasible generalized least square method for panel regression has been applied. This model has been chosen because it addresses the issues of heteroscedasticity as well as cellular correlation or autocorrelation among the panel data. Additionally, this method is particularly useful for a small number of sample sizes. In addition, the method provides a more efficient coefficient than that of the ordinary least square method as well as a fixed effect and random effect model. The log of FDI, which is the main independent variable, has a positive coefficient with the growth rate of GDP. The value of the coefficient is 0.01. For this reason, it can be said that if there is a 1% increase in FDI, then it will increase the growth rate of GDP by 0.01%.

From this analysis, it can be argued that there is a positive and significant impact of foreign direct investment on increasing the growth rate of GDP. However, the log of the FDI variable is statistically significant at a 5% level because the P value is less than

5%. That is why under the FGLS model, FDI is a true determinant of GDP growth rate. From the above regression table, it can be seen that the rate of inflation has a negative coefficient with the growth rate of GDP across eight countries during the last ten years of 2013 to 2022. This is consistent with the result of correlation analysis, however, there is a negative linear relationship found between the rate of inflation and the value of the growth rate of GDP. The coefficient of the regression equation for the variable of the rate of inflation is -0.137. That means if there is a 1% increment in the rate of inflation, then it will decrease the growth rate of GDP by 0.137%. However, the variable of inflation rate is not significantly related to the growth rate of GDP because the P value of this variable is not statistically significant at the 5% significance level. In addition, the rate of unemployment has also a negative coefficient in the regression table.

The result is also consistent with the result of the previous section because, in the correlation analysis, it has been identified that the unemployment rate is linearly negatively correlated with the growth rate of GDP. The value of the coefficient for the rate of unemployment is -0.994. The value reflects that if there is a 1% increase in the rate of unemployment in the economy, then it will decrease the growth rate of GDP by 0.994%. From the statistics of the P value of the rate of unemployment, it can be seen that the variable is statistically significant at a 5% significance level. That is why it can be strongly stated that the rate of unemployment is truly a predictor for predicting the growth rate of GDP across eight countries during the last 10 years. Furthermore, it can be seen that the log of exports has a positive coefficient with the growth rate of GDP according to the FGLS method. The result is consistent with the correlation analysis because it has been identified that there exists a positive linear association between total export size and the growth rate of GDP. The value of the coefficient is 0.001. The value reflects that if there is a 1% increase in the log of exports to the economy, then it will increase the growth rate of GDP by 0.0001 unit. However, it can be seen from the above table that the variable of log of export is not statistically significant at 5% because the P value of the variable is more than 0.05. Another control variable of the regression model which is a log of import has a negative coefficient. The value of the coefficient is -0.006. This result is not consistent with the correlation analysis because it has been identified that there exists a linear positive correlation between the total size of imports and the growth rate of GDP. The value of the negative coefficient in the regression model reflects that if there is an increment in the log of exports by 1%, then it will decrease the growth rate of GDP of the economy by 0.00006 units.

However, it can also be seen from the regression table that the variable is not statistically significant at the 5% significance level because the P value is more than 5%. By applying the FGLS regression model, panels have become homoscedastic in the data set. In addition, there is now no problem of serial correlation or autocorrelation in the regression analysis. The value of the F test is 9.471 and the probability value is 0.0917. From these statistics, it can be stated strongly that the overall model of FGLS is statistically significant at the 10% significance level because the probability value is less than 10%.

5.3 Robustness Checking

Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

$F(1,7) = 0.293$

Prob > F = 0.6054

The Wooldridge test for autocorrelation in panel data is conducted to determine whether there is serial correlation, or autocorrelation, in the error terms of a panel data model. Panel data models involve both cross-sectional and time-series dimensions, making them susceptible to various types of correlation in the error terms. The Wooldridge test specifically assesses for autocorrelation in panel data models, helping researchers determine whether adjustments need to be made to the modelling approach or if further diagnostics are required to address the issue. The p-value associated with this test statistic is 0.6054, which is greater than the conventional significance level of 0.05. This means that there is insufficient evidence to reject the null hypothesis at the 5% significance level. In other words, the researcher fails to reject the hypothesis of no first-order autocorrelation. Interpreted more plainly, the result suggests that there is no evidence of autocorrelation in the errors of the model at lag 1, based on the given data and significance level in this model.

Testing for Multicollinearity

Testing for multicollinearity using the Variance Inflation Factor (VIF) is a common approach in regression analysis, especially when dealing with multiple independent variables. Multicollinearity occurs when two or more independent variables in a regression model are highly correlated, which can lead to inaccurate estimates of the regression coefficients and reduced precision in the model. A VIF of 5.96 suggests that there is some correlation among the independent variables in the model, but it is not severe enough to cause significant issues with the coefficient estimates.

Table 5-7 Variance inflation factor

	VIF	1/VIF
Lim	12.562	.08
Lex	12.347	.081
Lfdi	2.195	.455
Unempl oyment	1.754	.57
Inflation	1.07	.935
Mean VIF	5.986	.

5.4 Chapter Summary

In Chapter 5, the dissertation showed relevant variables and research hypotheses. It focused on GDP growth as the main dependent variable and foreign direct investment (FDI) as the key explanatory or independent variable. The primary hypothesis (H1) states that a positive and significant relationship between FDI and GDP growth exists. Control variables include Export, Import, Inflation, and Unemployment within the model. Though technological advancement is influential, it is excluded due to data limitations and complexity issues. Model specifications implemented Ordinary Least Squares Method (OLS), Random Effect Model (RE), Fixed Effect Model (FE) and Feasible Generalised Least Squares Method (FGLS). The chapter outlines and analysed the methodology for data modelling in Stata. Moreover, it emphasized the objective of identifying influential factors affecting economic growth in SAARC countries.

Chapter 6 Conclusion and Recommendations

6.1 Conclusions

There exists a positive correlation between foreign direct investment and the growth rate of GDP during the last ten years of 2013 to 2022 in the SAARC countries. In this research study, different types of control variables have been applied along with the main explanatory variable which is foreign direct investment. The control variables include the rate of inflation, export size, import size and the rate of unemployment. By applying the ordinary least square method, it has been revealed that foreign direct investment is a significant predictor of the growth rate of GDP in eight countries. The impact of foreign direct investment has been found statistically significant at the 5% significance level. In addition, the unemployment rate is also a significant factor in explaining the dynamics of the growth rate of GDP in eight countries. However, the overall model of the ordinary least squares method has not been found statistically significant. For panel data in this research study with eight countries and the last 10-year time span, the random effect model and fixed effect model have also been applied. The random effect model provides the result of the significant contribution of the rate of unemployment to explain the growth rate of the GDP across eight countries.

Furthermore, it has been identified that foreign direct investor is another statistically significant factor that can explain the dynamics of the growth rate of GDP. The impact of foreign direct investment in the random effect model for explaining the growth rate of GDP has been found statistically significant at the 5% significance level. However, in the fixed effect model including time fixed effect and firm fixed effect, not even a single variable has been identified as statistically significant to explain the dynamics of the growth rate of GDP.

However, it has been investigated that both the random effect model and the fixed effect model to identify the impact of foreign direct investment on the dynamics of the growth rate of GDP have been found statistically insignificant. Finally, a feasible generalized least squares method has been applied to identify the impact of FDI on the growth rate of GDP. The reason for using this model is to remove any type of heteroscedasticity problems among different panels and serial correlation or autocorrelation found in the data set. After applying the feasible generalized least squares method, it has been identified that foreign direct investment is a statistically significant contributor to the increment of the growth of GDP after taking control of four other variables. Additionally, the rate of unemployment is also another significant factor which can influence the growth rate of GDP. In addition, it has been investigated that the overall significance of applying a feasible generalized least squares method is statistically significant. That is why from this data analysis it can be argued strongly that there exists a positive causal effect relationship between foreign direct investment and the growth rate of GDP among the SAARC countries.

Foreign direct investment can contribute to the increment of the growth rate of the GDP in a particular country through several mechanisms. Foreign investment involves the investment of foreign capital directly into different types of businesses and other operational projects in one country by entities which are from another country. If the business operations and projects can be completed effectively, the inflow of foreign direct investment will lead to a positive and significant impact on the economy of the host country. In this way, it will lead to an increment in the growth rate of the GDP. FDI involves injecting capital into local industries and business operations by foreign investors. That is why the infusion of foreign capital into local businesses will enable the business in corporations to make proper expansion of their current operations.

In addition, local business organizations can be able to invest in new technologies or new manufacturing equipment so that they can upgrade their developmental infrastructure. In this way, local companies will be able to improve their operational productivity and hence make a profit hugely. Those activities will lead to an increased level of economic and production activity which will eventually contribute to a high amount of GDP in the country. In addition, foreign investors usually bring different types of new management practices or upgraded skills as well as some advanced technologies to the host country. This type of technological shift will provide an increased level of job innovation or job efficiency. That is why the local economy will have more and more job productivity to have sustainable economic growth.

Additionally, local firms can learn different types of managerial practices from foreign investors and this type of knowledge will provide them with better processes in production as well as they can be able to offer some high-quality products. Those activities

will impact the growth rate of GDP positively. When there is an inflow of foreign direct investment, it reflects that there will be more and more business opportunities in the future. That is why the inflow of foreign investment results in the creation of new jobs or career opportunities in the host country. When foreign investors expand their business operations, they usually hire local employees which will lead to an increase in the employment rate. In this way, the national economy will be boosted and hence there will be an enormous growth rate of GDP.

Additionally, there will be a high number of exports from the host country which will generate revenue for the national economy. Foreign companies, when they invest foreign capital into the host country, try to establish different types of production facilities. In this way, there will be an increased level of exports to other countries, and this is one of the most contributing factors to the increment of GDP. The presence of foreign investors in the host country acts as the catalyst for the domestic investment environment. Local business organizations try to invest in their growth and innovation so that altogether they will lead to a broader economic expansion. In this way, there will be an increased level of growth rate in GDP. Furthermore, to have foreign capital in the local economy, local business organizations try to gain access to the global market by becoming a part of a multinational supply chain model. By having significant access to other countries, local companies will be able to make their expansion and hence national economy will grow.

6.2 Recommendations and Policy Measures

In this case, host countries need to streamline and simplify different types of regulatory requirements for establishing and operating their business incorporations. That is why there is a requirement from foreign investors to reduce different types of bureaucratic hurdles so that it will ensure transparency in operational procedures. Host countries need to provide consistent and clear investment policies to foreign investors so that they will have a conducive environment to make investments (Adegboye et al., 2021). For this reason, host countries need to avoid changes in their policies frequently which might create uncertainty in the context of foreign investors.

Additionally, local economies need to implement protection measures for foreign investors to address different types of legal concerns and disputes. In this case, local countries can develop special economic zones as well as some industrial parks which will attract foreign investors and encourage export-oriented industries (Amoah, 2019). In addition, local governments need to invest in modern infrastructure development like improving communication networks or having flexibility in transportation and energy systems. This type of infrastructural development will improve connectivity, which will reduce logistics costs.

Furthermore, local countries need to enhance vocational training and proper education to produce an adaptable and expert workforce that will meet the requirements of various foreign industries (Dhingra et al., 2017). In this way, the local unemployment rate will be reduced significantly with the help of foreign investments. Additionally, there is a requirement for effective collaboration between educational institutions and business organizations to bridge the gap in skills. This will increase the proper alignment of education with the requirements of industries. Host countries need to simplify their procedures of customs and reduce different types of trade barriers. This will lead to proper facilitation of the movement of operational goods and services across different borders. For this reason, companies can negotiate trade partnerships and trade agreements with foreign multinationals to expand their market access and attract foreign investors to leverage trade opportunities in the host country (Dhingra et al., 2017).

Furthermore, local countries can provide some tax incentives and tax exemptions to foreign investors for some priority industries like infrastructure or export industries as well as technological firms. Another important recommendation is that local countries need to maintain stability in political dynamics and ensure a reliable and transparent legal system. This will ensure the legality of foreign contracts and protect foreign investors from enjoying their rights (Amoah, 2019). Additionally, local countries need to address corruption immediately to promote good governance practices. This will increase trust with potential foreign investors.

The inflow of foreign investment to the local country is indeed a long-term endeavour. That is why there is a requirement to maintain consistency in the implementation of different types of national policies for business incorporations. In addition, local

countries need to implement effective governance practices as well as focus on ongoing commitments with foreign investors (Adegboye et al., 2021). In this way, there will be sustained success, and this will be reflected in the growth rate of the GDP.

Declarations

Ethical Approval and Consent to Participate

Not applicable. This study did not involve human participants, human data, human tissue, or animals.

Consent for Publication

Not applicable.

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