Md Rokibul Alam

The Impact of Inflation on Foreign Direct investment (FDI): Evidence from Bangladesh

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Author: Md Rokibul Alam
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ABSTRACT:
This study investigates the impact and relationship of inflation on foreign direct investment (FDI) inflows in Bangladesh over the period 1987–2024. To do so, the study adopts a quantitative, time-series design using annual data from the World Bank, Bangladesh Bank, and IMF. Furthermore, the analysis employs econometric techniques, including the Augmented Dickey–Fuller and Phillips–Perron tests, Johansen cointegration, Vector Error Correction Model (VECM), and Ordinary Least Squares (OLS) regression to determine both short- and long-run dynamics among FDI, inflation, GDP growth, and interest rates.

The finding of the study confirms the existence of a long-run equilibrium relationship among the variables, implying that FDI, inflation, and growth move together over time. The normalized cointegrating equation reveals that GDP growth, inflation rate and interest rates exert positive effects on FDI in the long run. In addition, the VECM results show that approximately 14.8 % of disequilibrium in FDI is corrected annually toward long-run equilibrium, indicating a moderate speed of adjustment. The findings of the study also ensured that in the short run, inflation and interest rate fluctuations are statistically insignificant, suggesting that investors respond more to long-term macroeconomic stability than to temporary price changes. The OLS robustness test further supports that GDP growth is the strongest determinant of FDI inflows, while moderate inflation does not significantly deter investment as long as it remains predictable.

Overall, the findings emphasize that Bangladesh's ability to sustain FDI depends on maintaining price stability, credible monetary policy, and consistent economic growth. Policy recommendations include strengthening inflation-targeting frameworks, improving central-bank transparency, and fostering GDP-driven productivity growth to enhance investor confidence and ensure resilient capital inflows.

KEYWORDS: Inflation rate, Exchange rate, Monetary policy, Regression analysis, Cointegration, Foreign Direct Investment, Growth rate.

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1 Introduction

1.1 Background of the Study

The concept of Foreign Direct Investment (FDI) is generally seen as one of the foundations of economic growth and development, especially among emerging economies that seek to be more integrated into the global financial system. With the increasing globalisation that has been transforming international flows of goods, services, and capital, developing countries like Bangladesh are now more dependent on FDI as an external source of finance, as it complements domestic savings, increases technological capacity, and increases managerial efficiency. FDI is considered an investment made by a foreign party according to the United Nations Conference on Trade and Development (UNCTAD, 2017), which demands the creation of an enduring interest and control, usually with a considerable ten per cent ownership, of a business in a host nation. In addition to the capital inflows, FDI also leads to the transfer of technology, development of human capital, creation of employment, as well as increased exportation. Therefore, the appeal and maintenance of FDI inflows have become essential pointers of the credibility of a country in its economic policy and macro-economic well-being.

Inflation has a very ambivalent place among the macroeconomic factors influencing the choice of FDI. Inflation is an overall increase in the prices of an economy in the long run, and it is an indicator of financial and fiscal stability. Literature on the theoretical front has offered inconsistent views on the impact of inflation on the conduct of investment. The neoclassical school views inflation as a capital accumulation tax, where increasing prices lead to an increase in the nominal interest rate, uncertainty, and real returns, hence deterring domestic and foreign investment. Conversely, Keynesian and Mundell-Tobin theories indicated that having moderate inflation might stimulate investment by lowering the real interest rates, thus motivating companies to use the money as an investment instead of holding monetary reserves as capital. These opposite views indicate the non-linear and context-specific relations between inflation and FDI, which

are determined by the institutional quality, credibility of policy and macro-economic stability (Sayek, 2009; Tapsoba, 2012; Mason and Vracheva, 2017; Khan, 2021).

The fact that empirical research on different territories supports the idea that price stability, but not the absolute amount of inflation, is a significant determinant of letting foreign investment flow in. An example will be as illustrated by Tapsoba (2012), whereby developing countries that have adopted inflation-targeting regimes registered statistically significant growth in FDI inflows, which could be attributed to the improvement of monetary credibility and transparency. Equally, Mason and Vracheva (2017) and Vasileva (2018) discovered that plausible monetary systems in developed economies decreased the uncertainty in policies and decreased the perceived risks in investment. On the other hand, long-term capital commitments in the countries associated with poor institutional frameworks or unstable macro-economic conditions are often discouraged because of high inflation (Sekmen and Gokirmak, 2020; Teh and Ali, 2020). Such results emphasise the fact that long-term FDI inflows cannot be divorced from the long-term macro-economic management and good governance.

The laws of inflation and FDI are quite heterogeneous within the South Asian framework. An example of threshold effects was found by Mehak and Waqas (2023) in Pakistan, whereby FDI inflows rose below 2.8 per cent but fell above that point. Chronic or volatile inflation, as shown by similar evidence in Malaysia, Iran, and Turkey, negatively affects investor confidence by increasing uncertainty and the cost of conducting transactions (Teh and Ali, 2020; Sekmen and Gokirmak, 2020). Mostafa (2020) obtained an inverse long-run relationship between inflation and FDI, where short-term coefficients are non-significant in Bangladesh. These findings imply that despite the fact that Bangladesh has managed over the last thirty years to draw an increasing amount of foreign capital, the sustainability of these inflows is directly dependent on its ability to sustain macroeconomic stability.

Throughout the last thirty years, Bangladesh has changed from an economy that is agro-based economy to a fast-growing, industrial and export-based country in South Asia.

Having a GDP growth rate of more than 6 per cent on average since the 2000s and a growing manufacturing base, with the ready-made garments industry taking the lead, the country has become a good investment destination for global investors. However, the macroeconomic environment in Bangladesh is susceptible to inflationary shocks, exchange-rate volatility, as well as institutional inefficiencies. The delicate balance between monetary discipline and growth ambitions is often in the inflation rate, which has been both two and eleven per cent since the late 1980s. The ratio of FDI inflows to the GDP has been fluctuating around, reaching a peak of more than 1.6 per cent in 2014 and declining to below 0.4 per cent in 2020, therefore highlighting a continued tendency of investment to macro-economic shocks. It is thus essential to understand the mechanisms by which inflation has an impact on FDI in order to achieve sustainable capital inflows and long-term economic resilience in Bangladesh.

In this regard, the current research aims at the empirical study of the effects of inflation on FDI inflows in Bangladesh between 1987 and 2024 by using such highly developed econometric tools as the Johansen co-integration test, the Vector Error Correction Model (VECM), and the multiple regression analysis. The study will seek to offer some evidence-based suggestions to policy-makers to improve the state of macro-economic stability, institutional credibility, and investment climate by connecting theoretical findings in the world literature with data specific to a country.

1.2 Problem Statement

Although foreign direct investment (FDI) is widely recognised to drive the process of economic development, its sensitivity to inflation is an empirical issue that has not been resolved, especially in the case of economies in the developing world, which have unstable macroeconomic conditions. This is the case of Bangladesh. The country has witnessed a high level of economic growth in recent decades, but the inflows of FDI have not been on an upward trend. Mediocre inflation has been associated with an increase in foreign investment, but bouts of inflationary price levels and monetary instability have often caused sudden falls in FDI. Such a discrepancy indicates that the relationship

between inflation and FDI in Bangladesh is multifaceted and might be influenced by other macroeconomic variables like GDP growth and interest rates.

The earlier studies have been very insightful, although inconclusive. Research by Mostafa (2020) and Afzalur (2015) found the existence of a statistically significant negative relationship between the long-run of inflation and FDI in Bangladesh, and this is to suggests that the inflationary pressure has an adverse effect on diminishing the confidence of foreign investors. Still, such analyses were usually based on small datasets or could not take into consideration short-term dynamics and mechanisms of adjustment. On the other hand, regional research in Pakistan and India has indicated that mild inflation could go hand in hand with an increase in FDI with the backing of sound macroeconomic policies (Mehak and Waqas, 2023; Mostafa, 2020). There is an essential gap in empirical terms because of the lack of a global, current and methodologically sound evaluation of Bangladesh.

Besides, structural factors, which include exchange-rate shifts, fiscal imbalances and commodity price shocks, influence inflation in Bangladesh, which has made matters further complicated in trying to implement the policies. In the absence of a clear picture of how inflation influences FDI, in the cost-push channels, through the uncertainty channel or consideration of real returns, policy interventions can be useless or even counterproductive. To this end, the main research issue that is to be solved is the determination of the short and long-run effects of inflation on FDI inflows in Bangladesh and the belief that keeping inflation low and stable could be a viable tool for attracting sustainable foreign investment.

1.3 Research Objectives

The general aim of the study is to assess the influence of inflation on inflows of foreign direct investment in Bangladesh in the period 1987 -2024.

In particular, the research aims at:

i. Examine the presence of a long-run equilibrium relationship between inflation and FDI inflows in Bangladesh and describe the nature of this relationship.
ii. Analyse the short-run relationship between inflation, GDP growth, interest rates, and FDI using the Vector Error Correction Model (VECM).
iii. Determine the orientation and strength of cause-and-effect relationships between the key macroeconomic variables that affect FDI.
iv. Provide policy suggestions that are aimed at stabilising inflation to create a favourable climate in which to invest.

1.4 Research Questions

The following are the main questions that this research aims to address:

i. How much does inflation play a significant role in FDI inflows in Bangladesh in the long run?
ii. How do inflation, growth in the GDP, and interest rate interrelate to affect FDI inflows in the short run?
iii. Does the causality in the relationship between inflation and FDI inflows work in one way or another, does inflation cause changes in investment, or are the investment dynamics responsible for the changes in inflation?
iv. What can be done to make Bangladesh more appealing to foreign investors through macroeconomic stability and dealing with inflationary pressures?

1.5 Significance of the Study

This study is critical because it contributed to academic and policy development. On the educational front, the study adds to the body of evidence on the importance of the inflation nexus and FDI in the past since it introduces a novel econometric model of the inflation nexus to a developing-country setting and makes use of a rich and modern time-series design to cover the period between 1987 and 2024. Compared to the earlier studies, which often relied on shorter timeframes or cross-sectional studies, this analysis

reflects how the economy of Bangladesh has developed over almost forty years, and it provides a more profound insight into the structural changes and the macroeconomic patterns.

Policymaking: The research provides practical recommendations to the Bangladesh Bank, the Ministry of Finance, as well as other regulatory bodies. By determining how inflation and FDI relate, the policymaker is able to gauge better the cost of inflationary instability, as well as the utility of maintaining price stability. The results can also be used to construct inflation-targeting models, which a number of emerging economies have effectively implemented to increase credibility of the monetary policies and investor confidence. Additionally, the findings may be used to guide fiscal and economic coordination, which would make sure that the inflation management process does not impair investment growth, but, on the contrary, facilitates it. To the international investors and the development partners, the study offers evidence on the effect of the macroeconomic environment of Bangladesh on the perceptions of risk and investment decisions, which enhances transparency and predictability in the investment environment.

1.6 Scope and Limitations

This paper is confined to the analysis of the macroeconomic nexus between inflation and inflows of foreign direct investment (FDI) in Bangladesh in the years 1987-2024. International and national agencies were also used to get annual time-series observations, such as the World Development Indicators, the Bangladesh Bank and the International Monetary Fund. The three significant explanatory variables included in the empirical model are the growth rate of the gross domestic product, the inflation rate, along with interest rate, to achieve the main macroeconomic variables that determine FDI inflows.

However, the analysis is also limited in various ways, which need to be mentioned. The data factors do not permit a direct measure of non-quantitative factors, which include but are not limited to political stability, institutional quality, and governance factors, into

the econometric specification; yet such variables can give an indirect impact on investment flows. The specification supposes a linear relationship between variables; in fact, the relationship between the variables inflation and FDI might be nonlinear, and threshold effects may be involved, where the relationship designation can be changed to negative. The model does not directly factor in external shocks, such as world financial crises, disruption in trade, and the COVID-19 pandemic, despite their possible impact on short-term results. Lastly, the findings apply specifically in Bangladesh and might not be easily extrapolated to other economies with different monetary regimes or institutional settings. Irrespective of these limitations, the study provides a substantive basis for future studies and the crafting of policy interventions.

1.7 Organization of the Thesis

The thesis has been divided into seven chapters, all of which are part of the smooth story that links the conceptualisation of the research question to its policy implications. Chapter One develops the research problem, reports the objectives, explains the importance of the study, and puts the investigation in its theoretical framework. Chapters Two & three provide an in-depth coverage of available literature and theoretical frameworks, which cover the correlation of inflation and foreign direct investment, based on the research of global, regional and Bangladesh-specific situations to highlight any deficiencies in current knowledge. Chapter Four gives the methodology covering the data used in the study, the econometric models (Johansen cointegration and vector error correction models (VECM)) and diagnosis tests used to check the robustness. Chapters Five & Six present and reflect the empirical results by analysing the long Although long-run and short-run correlations between the variables. Lastly, Chapter Seven summarises the significant findings and policy implications and highlights measures to ensure it can attract FDI inflows by enhancing macroeconomic stability and competent management of inflation.

2 Theoretical and Analytical Framework

2.1 Foreign Direct Investment

According to the United Nations Conference on Trade and Development (UNCTAD, 2017), a foreign direct investment (FDI) refers to the type of investment that grants a foreign investor a durable ownership interest in a resident enterprise, which is at least ten percent. Besides financial resources FDI also involves the movement of intangible resources, such as technology, management skills and market access. In the emerging economies, this kind of investment is used to counter the limited domestic savings as well as accelerate the industrialisation process (Mehak & Waqas, 2023). The magnitude and continuity of FDI inflows also depend on host-country variables, including political stability, openness, infrastructure, exchange-rate policy and inflation control (Mostafa, 2020).

2.2 Inflation and Macroeconomic Stability

Inflation can be described as the continuous increase in the overall level of prices of goods and services. Though the moderate rates of inflation can accompany economic growth, high or volatile inflationary trends undermine the real returns, as well as disrupt the effectiveness of price information (Abdurrahmani and Tmava, 2024). Inflation is, therefore, understood by the investors as a sign of poor macroeconomic management, and, thus, leads to increased instability in the capital flows of countries that have chronic inflation.

2.3 Inflation Targeting as a Policy Framework

Inflation targeting (IT) is a monetary policy framework introduced in the 1990s and is a rule-based monetary policy. This framework requires central banks to implement a publicly declared inflation target, hence facilitating transparency and accountability. Tapsoba (2012) and Mason and Vracheva (2017) agree that IT enhances the credibility

of monetary policy and reduces macro-economic uncertainty, thus facilitating the environment to be foreign direct investment is facilitated.Khan (2021) and Vasileva (2018) support the fact that in developed economies, the use of IT is linked with a sharp increase in foreign direct investment, but the impact in middle-income nations is ambiguous.

2.4 Neoclassical View

According to the neoclassical theory, inflation will increase the nominal interest rates, thus making the cost of capital high and therefore deterring investment. Sekmen & Gokirmak (2020) illustrate that with the Fisher effect, an increased expected inflation increases the nominal interest rates and decreases the real investment. As a result, the inflows of FDI reduce as investors are pursuing real returns that are stable.

2.5 Keynesian and Mundell Tobin Hypothesis

Contrary to the pessimism of neoclassical models, Mundell (1965) and Tobin (1965) assume that moderate inflation would rejuvenate the investment process. Inflation lowers the real interest rates, which have the effect of making firms forego monetary holdings in favour of capital investments, thus increasing the rate of capital formation. However, this positive relationship will only be achieved assuming inflation has a foreseeable and moderate profile.

2.6 Stability in the Macroeconomy and Investor Trust

The dimension of monetary credibility is built into the investment behaviour dynamics in the macroeconomic stability hypothesis (Tapsoba, 2012). It claims that the risk of unpredictable profits and the changes in exchange rates are mitigated by continuous and low inflation rates, which, in turn, improve the risk-reward balance of long-term capital investments.

2.7 Portfolio Diversification and OLI Paradigm

Sayek (2009) applies the ownership-location-internalisation (OLI) paradigm in explaining the portfolio changes that are made by multinational enterprises in their reaction to inflation risk. Where the inflationary divergence between the domestic and foreign markets depreciates the amount of anticipated profit contraction, the firms can rearrange the foreign direct investment geographically. Therefore, FDI is a tool that cushions exposure to inflation-based taxation, but its use is reduced in a situation where there is an increase in the volatility of inflation.

3 Literature Review

3.1 Introduction

Foreign direct investment (FDI) has become one of the most vibrant channels through which the developing economies have become part of the global financial and production nexus. It does not only bring in capital but also managerial skills, technological transfer and job creation, among others, which accelerate economic growth. However, these capital flows are highly sensitive to macroeconomic stability especially to inflation. Inflation represents financial discipline in a country and general credibility of the economic policy base. Higher inflation creates confusion, kills purchasing power, and is an indicator of policy weakness thus scaring away investors but low, stable inflation sends a message of predictability and wise stewardship thus attracting investment.

The relationship between inflation and investment has been a long debate among economists in the world. Classical and neoclassical theories treat inflation as a capital accumulation tax whereas Keynesian theory accepts mild inflation as a by-product of growth. In developing economies like Bangladesh, where the macroeconomic management is faced with the issue of the unending external and internal forces, the inflation-FDI nexus is particularly acute. This has seen the FDI inflows in Bangladesh rise over the past decades accompanied by periods of moderate to high inflation. The impact of the inflation processes on blocking or facilitating these inflows is an empirical question and a policy issue.

This chapter provides a survey of theoretical and empirical literature regarding the relationship between inflation and FDI with a special focus on the role played by monetary frameworks (in particular inflation-targeting regimes) that mediate the relationship. The discussion takes a thematic structure: the first section to be dedicated to a definition of concepts and theoretical connections; the second part to the literature review of the evidence on the topic globally; the third part to the review of regional and

Bangladesh-specific literature; and the last section to the synthesis of the findings to outline the research gap that the current study addresses.

3.2 Empirical insights

3.2.1 Sayek (2009): Theoretical and empirical connection

Sayek (2009) creates a theoretical framework whereby inflation has an impact on foreign direct investment (FDI), through its effects on the real interest rates and capital returns, which are capitalised. Cross-country data analysis results reveal that companies can absorb small inflation in the operating cost, but high inflation over the long term reduces FDI inflows. The central hypothesis that inflation volatility destroys multinational investment is a conceptual foundation of future empirical research.

3.2.2 Tapsoba (2012): FDI and Inflation Targeting in the developing countries

News headlines related to Bitcoin and Ethereum for the same date range were compiled from financial media sources. These were analyzed with two transformer-based NLP models: FinBERT, a financial domain adaptation of BERT trained for sentiment classification, and CryptoBERT, a cryptocurrency-specific model capturing the linguistic nuances of digital asset reporting.

For each headline, the models generated probabilities for positive, negative, and neutral tone. Neutral outputs were excluded to reduce noise. The positive and negative scores were retained for aggregation into daily sentiment indicators.

3.2.3 Mason and Vracheva (2017): Credibility and Transparency

Mason and Vracheva (2017) compared 27 countries that were above 1990-2013 in terms of inflation-targeting (IT) regimes and non-IT regimes. They also showed that at the macro-economic level, IT enhances macro-economic credibility, hence increasing investor confidence, using a panel regression model. Their hypothesis, that higher levels of

transparency mean lower perceived investment risk, was strongly supported on empirical grounds, especially in high-income economies.

3.2.4 Vasileva (2018): Inflation targeting in the developing economies

The difference in differences design allowed Vasileva (2018) to extend the analysis to 71 developing countries. The central hypothesis, which holds that the adoption of IT raises FDI by an approximation of one percentage point of GDP, was supported. Results show that IT-inducing nations received more steady inflows of FDI particularly in case of financial crises where credit functions as an anchor.

3.2.5 Khan (2021): Comparing results by income group

The most detailed evaluation of the impact of IT on FDI was done by Khan (2021) based on the 90 countries with the range of 1996 to 2013 using matching estimators. The hypothesis of the study was that the adoption of IT increases FDI by reducing uncertainty and improving governance. Findings were mixed: The biggest increase in FDI inflows after IT adoption was experienced in OECD member countries, where it was 31.5 to 41.5 percentage points, and in middle-income countries (MICs), where FDI inflows decreased by 2-3 percentage points. Khan explains this split by the fact that institutional quality is a problem that weak governance and lack of credibility of policy removes investor confidence in IT regimes. His conclusion which is that IT benefits would be dependent on institutional readiness carries a heavy weight on Bangladesh which is not yet using such a regime.

3.2.6 Mostafa (2020): FDI in Bangladesh and Inflation.

Mostafa (2020) studies the impact of the annual inflation and exchange rate volatility on the foreign direct investment (FDI) inflows in Bangladesh using the annual time-series

data between 1980 and 2017. It is seen that inflation has a statistically significant negative influence on FDI in the long run but has a statistically insignificant influence in the short run. Conversely, the exchange rate shows a strong positive relationship with FDI in both the short-term and the long run, and this means that a weakening domestic currency can be an enticing factor to foreign capital.

3.2.7 Ai-Juna et al. (2024): Crowding Effect of FDI

The article by Ai-Juna et al. (2024) examines the crowding-in impact of FDI on domestic investment in Bangladesh. Their quantitative findings indicate that FDI has a positive effect on domestic investment both in the short and long run, hence implying that FDI can serve as a source of local process of capital formation, especially in the areas of agriculture, textiles and energy.

3.2.8 Menesah et al. (2024): Sub-Saharan Africa FDI and Inflation Thresholds

Through a threshold analysis of the FDI-growth nexus according to inflation in inflation-targeting economies of Sub-Saharan Africa, Menesah et al. (2024) investigate the threshold effect of inflation on the nexus. The researchers conclude that the positive growth effect of FDI is only significant when inflation does not surpass an optimal level of 7.26%. A second threshold of 16.49 per cent would result in the reduction of the positive effect of FDI on growth, hence the important need to ensure that inflation is at the optimal level in order to benefit maximally from FDI.

3.2.9 Grosse and Trevino (2005): Inflation and FDI in Developing Countries

A comprehensive review by Grosse and Trevino (2005) on FDI inflows into transitional economies concluded that inflation often discourages FDI, especially when inflation rates are high and volatile. This is consistent with the findings of other studies that link inflation stability with increased FDI inflows. For instance, high inflation creates economic instability, which increases uncertainty, discouraging foreign investors.

3.3 Country-wise empirical evidence

The nexus of inflation and FDI is especially complicated in emerging markets, where macro-economic volatility, weak institutions, and limited monetary independence make it difficult. The authors Teh and Ali (2020) used Vector Error Correction Models (VECM), in the case of Malaysia and Iran, from 1986 to 2016, where high inflation rates are theorised to decrease investor confidence and alter FDI inflows. They find that there is an adverse long-run impact of inflation on FDI in both countries, and it is statistically significant; a steady inflation situation in Malaysia increased investment, but chronic inflation and poor management of the exchange rate in Iran decreased it. The paper stresses that fiscal restraint, coupled with political stability, is combined to creates conditions of sustainable inflows of FDI. Likewise, Sekmen and Gokirmak (2020) examined Turkey (1974-2018) with the Johansen cointegration approach and VECM and assumed a two-way causal connection between inflation and FDI, and expected a short-run aversion of FDI to inflation. Their empirical study did not show any short-run causality but indicated that there was a strong relation in the long whereby, whereby growth in FDI had a negligible effect on increasing the inflationary pressures by increasing the demand and credit growth. This fact proves a feedback process in which inflation has an impact on FDI; FDI, in its turn, can contribute to inflationary processes. The Turkish example is also an example of the significance of sequence in policy reform: Liberalisation without price stability puts foreign investors at risk of losing money because of exchange-rate fluctuations. In line with that, the authors conclude that capital-account openness cannot give positive results until the price stability is stable in the long term.

3.3.1 Evidence from Africa

In his study, Kunofiwa Tsaurai (2018) considered 15 Southern African economies between 1990 and 2016 through the lens of the panel data and assumed that inflation would affect FDI negatively and that the impact of this may be reduced by financial development. Using fixed-effects, random-effects, and pooled effects specifications,

Tsaurai found mixed effects of inflation; in the former case, the effect is weak with a statistically insignificant positive impact, whereas in the latter case, the effect is statistically significant with a negative impact. The interaction between inflation and the financial development term was not significant. The study, therefore, finds that the relationship between inflation and FDI depends on the current stage of institutional and economic maturity, which means that Southern African states ought to be encouraged to follow inflation-reduction policies when enhancing their financial infrastructures.

Abdurrahmani and Tmava (2024) tested similar hypotheses in 2008-2022 in the Western Balkans in a dynamic Generalised Method of Moments (GMM) estimator. They find that there is a positive but a long-run negative relationship between inflation and FDI, indicating that moderate inflation can be taken as an indicator of economic growth or expansion, but higher inflation can destroy the confidence of the investors. According to them, price stability leads to better credibility of the macro-economic policy, which is a requirement to entice long-term capital.

Taken together, the African and the Balkan evidence suggests that the relationship between inflation and FDI is not linear and is highly dependent on the quality of institutions: low inflation can be accompanied by investment when there is a strong rule of law, and that gains are quickly destroyed by volatility.

3.3.2 South Asian evidence

In the study, Mehak and Waqas (2023) used the Johansen cointegration technique to conduct a panel analysis of Pakistan in the period between 1973 and 2020. Their central assumption is that foreign direct investment (FDI) boosts economic growth in case the inflation is below a certain level. In response to this, empirical evidence supported a long-run, positive relationship between inflation, FDI inflows and GDP growth, when the inflation rate was kept below 2.8 0; however, the relationship became negative when it exceeded the same. The authors thus came up with a threshold framework whereby inflation within a comfort zone is the driver of growth, whereas inflation out of this range discourages investment and destroys real returns. Considering these findings, the

authors recommend that macroeconomic stability should be maintained in Pakistan as a precondition to the maximisation of the developmental advantages of FDI.

Though it is not explicitly discussed in the uploaded papers, several works, which are located in the region and mentioned in these articles as Mehak and Waqas (2023), and Mostafa (2020), have noted that Indian inflation management and liberalisation reforms since the 1990s have drawn large-scale FDI. The case of India has shown that monetary discipline, rather than very low inflation per se, is the ultimate contributor to investor confidence.

The case of Bangladesh is unique, whereby inflows of foreign direct investment (FDI) have been growing in tandem with moderate inflation. Muhammad Mahmud Mostafa (2020) analysed data between 1980 and 2017 using the Augmented Dickey-Fuller tests, Johansen cointegration analysis and the use of the vector error-correction models. The hypothesis of the study was that FDI inflows are determined by both inflation and exchange-rate movements. The empirical results found a significant negative relation between inflation and FDI in the long run, but the short-term effect was not significant. On the other hand, the overvaluation of the domestic currency had a substantial positive impact, which indicates that a weak taka can spur an export-oriented investor as long as the rate of inflation is kept at a low level. Mostafa came to the conclusion that it is essential to curb inflation in order to sustain the FDI growth and that Bangladesh needs to consolidate the macroeconomic management to increase investor confidence.

To complement this, Afzalur (2015) compared the South Asian economies, including Bangladesh, and established that inflation volatility is degrading FDI inflows. Unpredictable levels of prices and unpredictability of the policies were identified to overrule the possible gains due to low labour costs. All these studies point in the same direction, that the attraction of foreign investors to Bangladesh is more on the stability of the prices and the credibility of the government than the fiscal stimulus.

3.4 Comparative Insights on Inflation Targeting and FDI

The experience of inflation targeting (IT) has informative differences across borders. Tapsoba (2012), Mason and Vracheva (2017), Vasileva (2018), and Khan (2021) also always assume that the use of IT improves the credibility of monetary policy and, consequently, leads to foreign direct investment. This relationship has been supported by empirical evidence, especially in high-income-based economies.

However, a comparative study conducted by Khan (2021) indicates that there is a substantial gap between high-income and middle-income adopters. Introduced in OECD countries, IT enhanced FDI inflows by 3.55 percentage points, thus supporting the hypothesis that transparent and accountable monetary regimes reduce perceived risk. On the other hand, in the middle-income economies, IT implementation was related to the fall of FDI inflows by 2-3 percentage points. Khan explains this negative impact by a weak institutional capacity and rapid implementation of complex sets of policies without corresponding fiscal and governance changes.

The institutional-quality hypothesis becomes relevant especially in the case of Bangladesh. Despite the expected stabilisation of the expectations and improved monetary transparency through IT, the lack of strong central-bank independence and fiscal discipline might eliminate the benefits associated with IT. The existing system of Bangladesh, which is founded more on monetary targeting than on inflation targeting, has provided fairly average macro-economic stability but still lack in transparency. Therefore, the long-run FDI gains associated with IT might only be attained in cases where the implementation is accompanied by extensive institutional changes.

3.5 Emerging Themes and Synthesis

In a variety of settings, some standard themes occur:

1. The volatility of inflation discourages foreign direct investment.

The majority of the literature (Sayek 2009; Teh and Ali 2020; Sekmen and Gokirmak 2020; Mostafa 2020) agrees with the observation that price instability destroys the confidence of the investors, increasing the uncertainty about the future costs and returns.

2. Moderate inflation is acceptable - and at times desirable.

In line with the Mundell Tobin argument, medium inflation can be an indicator of dynamism in the economy (Abdurrahmani and Tmava 2024; Mehak and Waqas 2023), but it has only positive impacts within a limited range.

3. Results are mediated by institutional quality and governance.

Khan (2021) and Tapsoba (2012) reveal that countries that are blessed with strong institutions and clearly defined monetary systems enjoy the most benefits of inflation targeting, and states with poor governance will have little or no impact of the same.

4. When there is credibility, then inflation targeting improves foreign direct investment.

The empirical data of OECD economies (Mason and Vracheva 2017; Vasileva 2018; Khan 2021) confirms that the credible targeting regimes reduce the policy uncertainty and draw long-term investment. Middle-income nations which do not have central bank independence, on the other hand, do not replicate those gains.

5. Bangladesh is a profile of the transitional economy.

The inflation is moderate and volatile, there is a change in the governance structures and institutional independence, and the exchange-rate stability partially subsidises inflationary risk. Based on this, the long-run relationship between inflation and FDI is expected to be negative, whereas the relationship between them in the short term may be neutral.

6. Methodological evolution.

Initial studies had been based on plain regressions, but later studies deployed panel cointegration, propensity-score matching and difference-in-differences designs. Such

methodological improvements have refined causal inference, and it has been found that the relationship between inflation and FDI is complex, non-linear and most environment-specific.

3.6 Summary of Key Studies and Hypotheses

Sayek (2009) hypothesized that inflation volatility impacts negatively on foreign direct investment (FDI) because it increases the risk that is perceived, a fact that was later observed to be supported by empirical evidence. Similarly, Tapsoba (2012) also found out that inflation targeting leads to an increase in FDI inflows in the developing economies by alleviating policy credibility. In addition to that, Mason and Vracheva (2017) and Vasileva (2018) furthered the argument that inflation targeting encourages transparency, which consequently is a driving force of FDI. Conversely, Khan (2021) argued that the effects of inflation targeting would depend on income types and found that there is a positive relationship with FDI in the OECD economies and a negative association in middle-income countries. The adverse effect of inflation on FDI in Malaysia, Iran, and Turkey was stated to be long-term (Teh and Ali, 2020 and Sekmen and Gokirmak, 2020), whereas Tsaurai (2018) and Abdurrahmani and Tmava (2024) depicted them as local and subject to conditionally based changes depending on the level of financial development. Mehak and Waqas (2023) found an 2.8 percent inflation threshold above which FDI declined and Mostafa (2020) found that in Bangladesh the long-run relationship between inflation and FDI was a negative one, but not statistically significant. All these results combined point to the fact that it is not the absolute amount of inflation that is the key factor that determines FDI but the stability of inflation which is the key determinant of foreign direct investment

3.7 Hypotheses of the study

This study investigates the association and impact of inflation on foreign direct investment inflow to Bangladesh. It contributes to the growing body of literature on investment, particularly in foreign direct investment, by examining how the price level

influences investment in Bangladesh. Moreover, the study explores the short-run relationship between the considered variables. The hypotheses are as follows:

Hypothesis 1: There is a significant long-run relationship between inflation and foreign direct investment inflow in Bangladesh. The existence of the association between inflation and foreign direct investment inflow indicates that the price level of a country might have a strong influential power in a country's investment as well as growth.

Hypothesis 2: Macroeconomic factors influence the foreign direct investment of a country. This hypothesis highlights the fact that there might be other factors that should be considered in the estimation of foreign direct investment of a country.

Hypothesis 3: Inflation is negatively related to foreign direct investment. Any increase in the price level of Bangladesh will lead to lower foreign direct investment.

Hypothesis 4: GDP growth rate is positively associated with foreign direct investment. This hypothesis indicates that the good economic condition of a country always attract foreign investors.

3.8 Conclusion

There is an intense but inconclusive debate over the effect of inflation on foreign direct investment (FDI), as can be seen by reviewing the available literature. There are differences in theory: to the neoclassicals, inflation is a distortion of investment, and to the people who hold the MundellTobin hypothesis, it is possible that slight inflation may stimulate capital accumulation. Cross-country evidence mainly supports the negative perspective, and it shows that long-term or volatile inflation dilutes the foreign investment. These adverse consequences are generally limited to those economies that are described as having credible monetary policy, institutional transparency, as well as little political risk.

The concept of inflation targeting has become one of the most effective tools that connect price stability and the attraction of investments. The empirical research by Tapsoba (2012), Mason and Vracheva (2017), Vasileva (2018), and Khan (2021) illustrates the effective increase in FDI in developed economies when inflation targeting is implemented because of better credibility and governance.

However, the issue of inflation targeting in the middle-income and developing economies is still subject to adoption based on strong institutional quality. In weak governance or central banks that are not independent, the straightforward implementation of inflation targeting does not bring about macroeconomic stability. In the case of Bangladesh, empirical research (Mostafa, 2020; Afzalur, 2015) suggests that the volatility of inflation remains a serious discouraging factor to FDI. A relatively low-to-moderate inflation in the country, when further curbed by the use of credible policy reforms, would perhaps make the country appeal to a more diversified profile of FDI inflows. However, before Bangladesh can embrace inflation targeting, it has to initially strengthen institutional independence, improve fiscal prudence and provide more financial-sector clarity.

The evidence around the world and in the region has led to convergence around three propositions:

- Constant FDI needs predictable and steady inflation.
- Under the condition of policy credibility and institutional quality, inflation management is successful.
- In the case of Bangladesh, moderate inflation coupled with a plausible administration can make FDI inflows a sustainable growth engine.

4 Methodology

4.1 Research Design

The study will use the econometric time-series approach to quantitative research to examine the dynamic, long-run relationship between inflation and foreign direct investment (FDI) inflows in Bangladesh between 1987 and 2024. The quantitative modelling will enable an objective determination of the sensitivity ranging across macroeconomic variables over time. The methodological process has six stages sequentially, which are:

(1) Identification and transformation of data;

(2) Descriptive and diagnostic analysis;

(3) Stationarity tests (Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests);

(4) Johansen cointegration analysis;

(5) A Vector Error Correction Model (VECM); and

(6) Ordinary Least Squares (OLS) regression to check robustness.

This hybrid time-series model provides both long-run and short-run solutions that are consistent with the macro-financial theory.

4.2 Data Source and Variables Description

The validity and international comparability were ensured by acquiring secondary annual data in the database of the World Bank World Development Indicators (WDI), the Bangladesh Bank and the International Monetary Fund (IMF). It had chosen 4 macro financial indicators:

I. FDI = net foreign direct investment inflows (% of GDP) - dependent variable;

II. GGR = GDP growth rate (%) - proxy for economic performance;

III. IFR = inflation rate (%) - price instability measure; and

IV. INR = lending interest rate (%) - monetary-policy channel.

The time period 1987-2024 was selected to capture structural changes, liberalisation of trade and post-pandemic changes. Annual frequency decreases the short-term volatility and increases the persistent cycles that are common in developing economies.

4.3 Empirical Strategy

The empirical model creates a connection between descriptively diagnostics and the inferential estimation process. The preliminary descriptive statistics (mean, median, kurtosis, skewness, and Jarque-Bera test), and graphical analysis are used to illuminate the patterns existing behind the data. Correlation matrices are used to determine provisional correlations before getting down to formal model specification. Subsequently, the econometric estimation is performed sequentially to induce both stochastic features and causal dependencies effectively.

4.4 Stationarity and Unit-Root Testing

The evaluation of stationarity is essential to avoid misleading regression outcomes. Augmented Dickey Fuller (ADF) and Phillips Perron (PP) tests are used to determine the order of integration of individual variables. The ADF model is stated as:

$$\Delta Y_t = \alpha + \beta t + \gamma Y_{t-1} + \sum_{i=1}^{p} \delta_i \Delta Y_{t-i} + \varepsilon_t \quad \text{.....(1)}$$

In equation 1, Y_t denotes the value of the time series at time t, ΔY_t indicates the first difference, α represents the constant, βt highlights the deterministic trend, γ coefficient tested for unit root, δ_i symbolises the coefficients of lagged differences, p indicates the number of lagged differences added to eliminate autocorrelation, and ε_t denotes the error term. If the t-statistic for γ is less than the corresponding critical value, then the null hypothesis (H_0) of the presence of a unit root is rejected. This indicates that the time series is stationary.

4.5 Lag Order Selection

Before the cointegration testing, the best lag length of the vector autoregressive system is determined using the Akaike Information Criterion (AIC), Schwarz Criterion (SC), Hannan-Quinn Criterion (HQ), Final Prediction Error (FPE) and Likelihood Ratio (LR) tests. A one-step consensus minimises the values of these information criteria, thus parsimony and minimising residual autocorrelation.

4.6 Johansen Cointegration Approach

Engle and Granger were the first to introduce the concept of cointegration in 1987 with the aim of determining long-run relationships between variables. The use of cointegration tests depends on the variables being integrated of the same order. The paper uses the Johansen cointegration technique (Johansen, 1988) to test long-run equilibrium relationships between variables. The method allows for determining all cointegrating vectors in a given set of variables simultaneously. In addition, the approach has better asymptotic properties, which provide more credible results. The Johansen-Juselius test is stated as follows**:**

$$\lambda_{\text{trace}}(r) = -T\sum_{i=r+1}^{n} \ln\left(1-\hat{\lambda}_i\right) \tag{2}$$

In equation 2, λ_{trace} denotes trace statistics, r indicates the number of cointegrating vectors, T represents the sample size, and $\hat{\lambda}_i$ highlights the estimated eigenvalue. The null hypothesis of the test is: the number of cointegrating vectors is less than or equal to r, and the alternative hypothesis is: the number of cointegrating vectors is more than r

$$\lambda_{max}(r, r+1) = -T\ln\left(1-\hat{\lambda}_{r+1}\right) \tag{3}$$

In equation 3, λ_max indicates max statistics, r indicates the number of cointegrating vectors, and λ̂_(r+1) represents the estimated eigenvalue. The null hypothesis of the

test is: the number of cointegrating vectors is equal to r, and the alternative hypothesis is: the number of cointegrating vectors is equal to (r + 1).

4.7 Vector Error Correction Model (VECM)

In order to deal with cointegrated time-series data, S. Johansen (1988, 1991) proposed the Vector Error Correction Model (VECM) as a further development of the Vector Autoregressive (VAR) model. VECM is widely used in econometrics to model both short-run adjustments and long-run equilibrium relationships between integrated variables. The model can only be applied when all the variables are first order (I(1)) and at least one of the variables is cointegrated with the others. In the current research, we aim to use the VECM to explain the impact of short-run volatility of inflation on FDI inflows, thus maintaining the long-run equilibrium relationship between the variables under consideration. The VECM may be defined as:

$$\Delta \mathrm{FDI}_t = \alpha_1(\mathrm{FDI}_{t-1} - \beta_1 \mathrm{IFR}_{t-1} - \beta_2 \mathrm{GGR}_{t-1} - \beta_3 \mathrm{INR}_{t-1}) + \sum_{i=1}^{p-1} \gamma_i \Delta \mathbf{Y}_{t-i} + \varepsilon_t \quad (4)$$

In equation 4, ΔFDI_t shows the first difference of Foreign Direct Investment, which shows the short-run change in FDI inflows over time, 1 is the adjustment coefficient, which shows how FDI inflows will revert to the long-run equilibrium after a shock, $(\mathrm{FDI}_{t-1} - \beta_1 \mathrm{IFR}_{t-1} - \beta_2 \mathrm{GGR}_{t-1} - \beta_3 \mathrm{INR}_{t-1})$ highlights the Error Correction Term (ECT), β_1, β_2, β_3 the long-term impacts of inflation, GDP growth and interest rates on FDI inflows respectively. $\sum_{i=1}^{p-1} \gamma_i \Delta \mathbf{Y}_{t-i}$indicates the short-run dynamic terms, and ε_t denotes the error term.

4.8 Ordinary Least Squares Regression (Robustness Check)

The research uses the Ordinary Least Squares (OLS) estimation technique to explain the interrelationships between the variables being studied. This methodological decision is common in econometric investigations due to its methodological simplicity and computational effectiveness in the event that the classical conditions of linear regression are met. Before estimating the model, a set of diagnostic tests is conducted to evaluate

the stationarity, multicollinearity, and autocorrelation with the view of protecting the statistical reliability and validity of the subsequent estimates.

The multiple regression model is designed in the following way:

$$FDI_t = \beta_0 + \beta_1 GDPG_t + \beta_2 INF_t + \beta_3 INT_t + \epsilon_t \quad (5)$$

In equation 5, FDI_t denotes Foreign Direct Investment inflows at time t, $GDPG_t$ represents the GDP growth rate at time t, INF_t highlights the inflation rate at time t, INT_t indicates the interest rate at time t, and ϵ_t. β_0 denotes the intercept term, and $\beta 1$, $\beta 2$, and $\beta 3$ represent the coefficients of independent variables that represent the sensitivity of FDI to each independent variable.

4.9 Ordinary Least Squares Regression including inflation volatility

$$\mathrm{INF}_t = \mu + \phi \mathrm{INF}_{t-1} + u_t, u_t \sim (0, h_t)$$

$$h_t = \omega + \alpha u_{t-1}^2 + \beta h_{t-1}$$

$$FDI_t = \beta_0 + \beta_1 GDPG_t + \beta_2 INF_t + \beta_3 INT_t + \beta_4 h_t + \epsilon_t \quad (6)$$

In the above equation h_t indicates inflation volatility, β_2 denotes the effect of the actual inflation level and $\beta_4 < 0$ highlights higher uncertainty about inflation makes planning, contracts, and long-horizon investment riskier than lower FDI

4.10 Model Validation and Reliability

To assess the stability of the model, the CUSUM and CUSUM-of-Squares diagnostics were used, and both of them were within the 5% confidence limits, which supports the consistency of the estimated parameters. The Jarque-Bera test of residual normality gave p>0.05 across specifications. Collectively, these diagnostics confirm that the estimated models are statistically sound, dynamically stable, and economically meaningful

5 DATA AND DESCRIPTIVE STATISTICS

5.1 Data

This is an empirical study that examines inflows of foreign direct investment (measured in percentage of GDP) and the GDP growth and the inflation rates in Bangladesh and the interest rates. The dataset contains annual observations of 1987 through 2024, a period that was chosen as it of such nature, the data are available. The annual frequency is desirable owing to its ability to capture both long-term trends and short-term fluctuations whereby the researcher is able to identify the long-term trends, short-term fluctuations and even cycles among variables of interest. Furthermore, time-series data help to analyze the impact of inflation on FDI inflows during a continuous horizon the consideration of which has special significance in the context of analyzing the macroeconomy. The research aims to address the questions as to whether inflation has a long-term or short-lasting impact on the FDI inflows, whether it causes and effects the inflows, and the direction and the strength of the association between the two. Also, the annual observations can be used to predict the future dynamics of investments in different inflationary conditions and hence provide useful information to the policy makers and the market players. The sources of data were the World Development Indicators database, Bangladesh bank and the international monetary fund (IMF).

5.2 Descriptive statistics

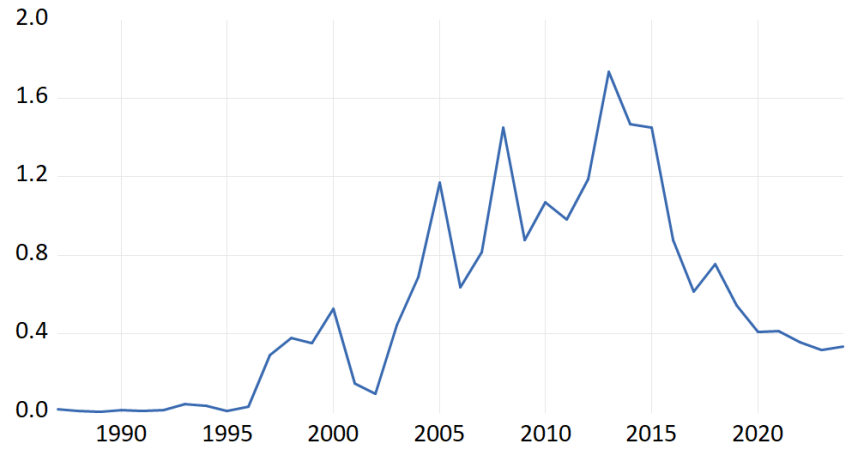

Figure 1: Trend line of foreign direct investment (inflow as a percentage)

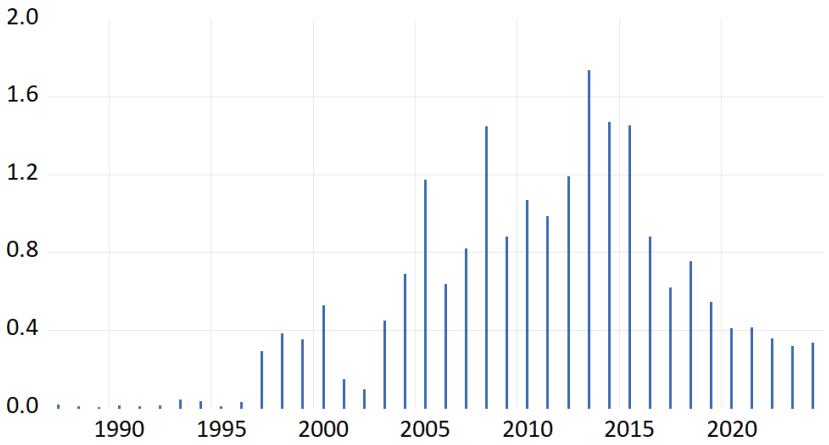

Figure 2: Trend spike of foreign direct investment (inflow as a percentage)

Figures 1 and 2 present a directional line of the trend of the foreign direct investment (FDI) inflow, translated to a percentage, starting in the year 1987 up to the year 2023. The information plotted on the y-axis indicates the percentage of FDI inflow that runs

between 0.0 to almost 2.0. The trend may be generally conceptualised into three different stages that include the relative stability at low levels, the marked growth and volatility, and the stabilisation at a middle level.

It was in the late 1980s and early to mid 1990s that the FDI inflow as a percentage was very low and stable with an average of 0.0 percent. Minimal, slow growth started off at around 1995 when the percentage started deviating off zero indicating the start of the intensive international economic involvement or liberalization activities. The inflow started recording its first significant growth which was above 0.2 percent in 1997.

Since the late 1990s, an obvious upward trend can be observed in the trend, but with steep ups and downs. The inflow peaked briefly (around 2000) to an approximation of 0.5 percent, then declined, indicating, either, a temporary slowdown in the world economy or particular national policy adjustments. Nonetheless, the progressive trend regained its strength during the mid-2000s, and reached a sharp increase that reached its heights in circa 2007 with rates of about 1.1 to 1.2%. A drop follows which may have been caused by the world financial meltdown that occurred in 2008 dragging the number back to 0.8%. More importantly, the trend subsequently reverted, reaching an absolute maximum series attaining FDI inflow in the area of 2014, at a figure of 1.6 by far up to 1.7.

After the high in 2014, the FDI inflow percentage went into a strong decline. As of 2018, it had declined significantly, declining to below 0.8%. This phase indicates a structural change which may be associated with the changing economic conditions in the world, changes in domestic policy or an augmentation of geopolitical risks. The decline rate was decreasing at a slower pace after around 2018, and the inflow became stable within the range of 0.3% to 0.4% around the year 2020 till the end of the data series. The latter period demonstrates that FDI inflow has subsided to become similar to that at the beginning of the 2000 period though is now held at a more stable, although lesser, level in the economy, compared to the very turbulent middle period.

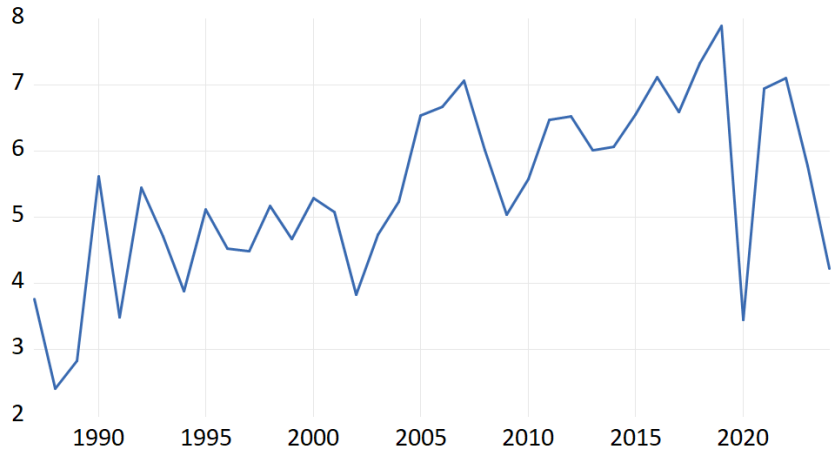

Figure 3 : Trend line of the GDP growth rate of Bangladesh

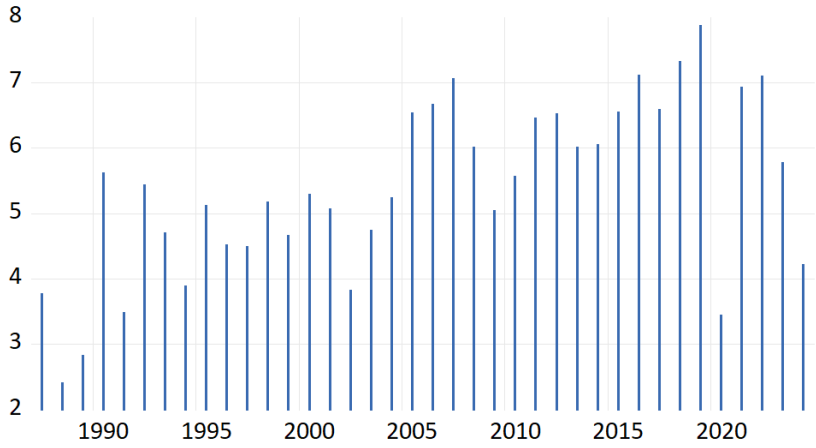

Figure 4: Trend spike of the GDP growth rate of Bangladesh

The time series in Figures 3 and 4 explains how the gross domestic production (GDP) growth rate of Bangladesh has been evolving since the late 1980s to early 2020s. Intense swings characterise the series, as they reflect the series of economic stages that are pursued by Bangladesh. The rate began to increase in the late 1980s, only at about 2.5%. Since then, there was a steady increase until the mid-1990s, where there were minor fluctuations before settling at around 5 percent. In the following rounds, the growth rate

followed a rising pattern, reaching a high of more than 6 per cent in the last years of the decade of 2000s. This growth can be attributed to a convergence of forces that are wide-scale economic reforms, increased foreign direct investment, and a more stable macro-political environment. Secondly, the development of sectors, especially within the textile industry and services, was of great help as it strengthened this positive economic performance.

Bangladesh entered the 2010s with the growth rate of its GDP at unprecedented amounts, often exceeding 7 per cent. This period also saw significant economic returns that were primarily led by the active export market, in the form of the garment industry, and secondly, an inflow of remittances through the employment of the Bangladesh citizens in other countries. Despite the fact that there have been intermittent contractions in terms of responding to the global financial instabilities, the general trend has been the ascendancy, which has reached soaring heights of over 8 per cent at the end of the decade. However, this is exceedingly apparent that the growth rate is decreasing as the coming decade nears the 2020s, alongside such theatrics like the COVID-19 pandemic around the world. The shrinking is thus an indication of the economic misfortunes that were faced by Bangladesh at this time, repressed across industries, both manufacturing and services.

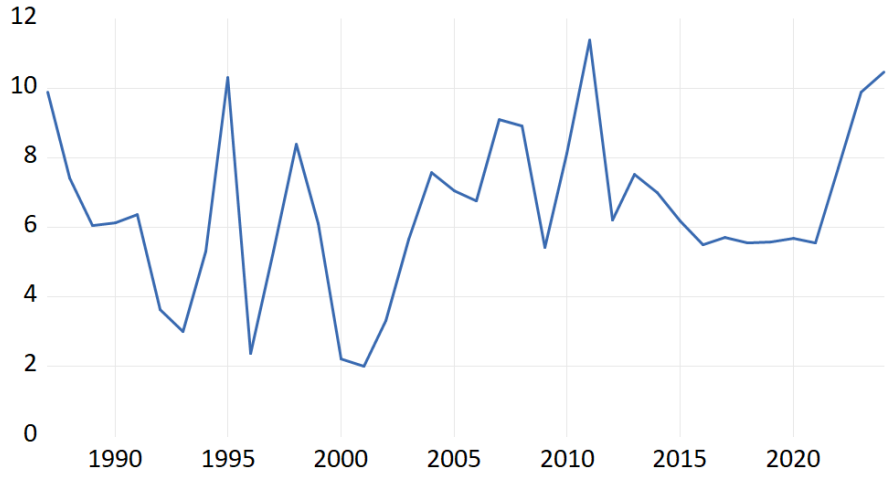

Figure 5: Trend line of the inflation rate in Bangladesh

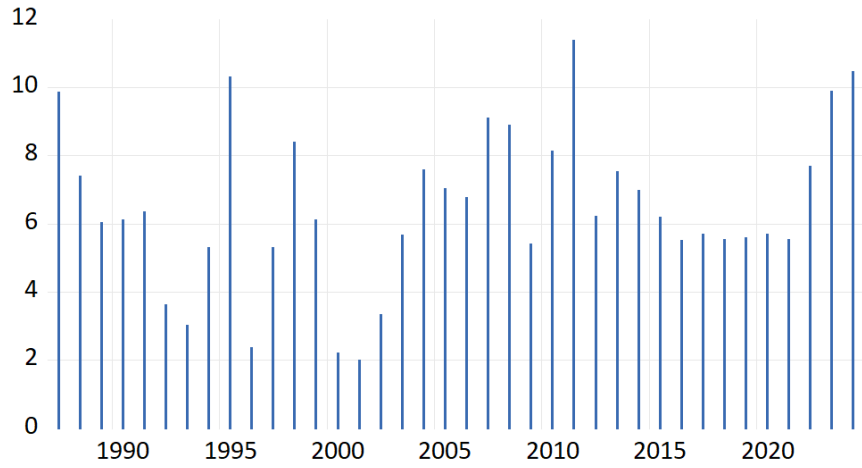

Figure 6: Trend spike of the inflation rate in Bangladesh

The graphs beneath (Figures 5 and 6) map the curve of the inflation rate in Bangladesh since the late 1980s to the start of the 2020s, thus highlighting the fluctuation and the problems that have been associated with this time period. The statistics demonstrate strong oscillations of further decades and show the compounding effects of macroeconomic shocks on the price changes of the country.

However, in the late 1980s, the inflation rate was significantly high, reaching an excess of 10 per cent. This period is a manifestation of economic instability, which could probably be explained by the structural changes and adjustments within the governmental policy. The significant rate of inflation within this period is an indicator of the susceptibility of the economy to shocks, which are caused by policies.

The inflationary trend has been very volatile in the 1990s. The first half of the decade was followed by a significant drop, followed by drastic growth, which is an indication of extreme economic volatility. The frequency of these oscillations can be associated with a multiplicity of determinants, such as changes in fiscal policy, changes in agricultural productivity, and external macroeconomic factors. The mid-1990s were, however,

characterised by a deflation in inflation, and this was an indication of a tentative restoration of better support for the fight against inflation by the enhancement of sound policy implementation and sound management of monetary policies.

The following decades of the 2000s are characterised by the fact that inflation decreases in the early decade and reaches about 2 per cent. This was subsequently neutralised by increasing patterns indicating the everywhere occurrences of increases in food and commodity prices across the globe. The growth that has been witnessed during the second half of the decade suggests broader macro-systemic issues, including supply-chain shocks and tension in demand, which are historically one of the most significant sources of inflationary processes.

This instability continued into the early 2010s, where the inflation rates reached up to 10 or more, and then reduced again. This trend is being used as a measure of the additional sensitivity of the economy to changes in domestic policies as well as exogenous shocks. The establishment of a stabilised rate became tedious, though a very vigorous measure in the form of policy interventions was taken with an aim of restraining inflation.

The statistics indicate a relatively stable but slowly rising inflation trend at the beginning of the 2020s. Possibly attributed to less specific factors in the economy of the whole world, such as trade dynamics and energy prices, and to more traditional concerns like supply-chain pressures. The supposedly less radical change of the movement in the later part of it provides hints at possible post-crisis changes in the economic governance, though it still has to struggle with the existing challenges. Therefore, the trend in question highlights the multidimensional dynamics between the domestic economic processes and effects of the global market that have been shaping the inflationary environment in Bangladesh over the years.

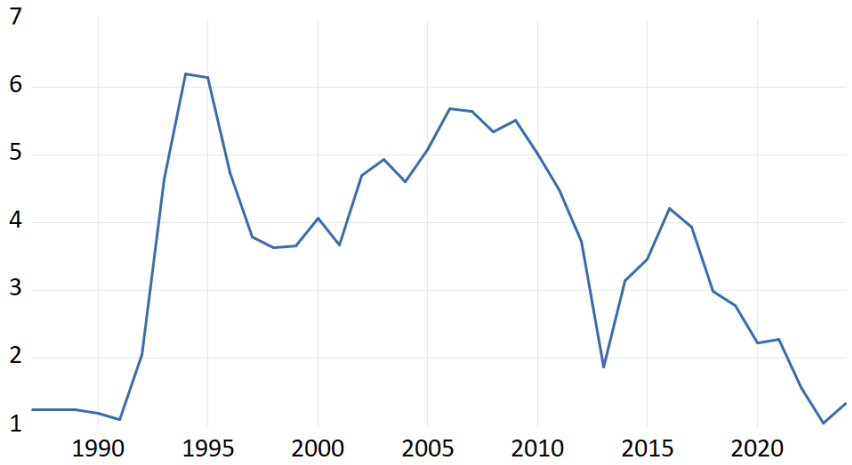

Figure 7: Trend line of interest rate in Bangladesh

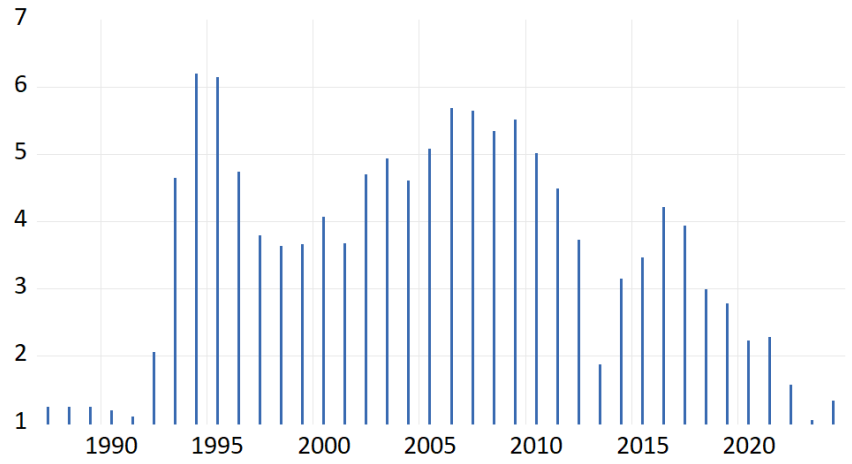

Figure 8: Trend spike of interest rate in Bangladesh

Figures 7 and 8 outline the trend of interest rates in Bangladesh since the late 1980s until the beginning of the 2020s, and the graph exhibits a strong cyclic nature of growth and decline due to rising and falling trends in sequential decades. During the late 1980s, the rates were close to 1% indicating that there was an economic environment where the monetary policy aimed at bolstering growth by keeping the cost of borrowing low to encourage investment and lending. In the early 1990s, there was a sharp increase to extend this to more than 6 per cent. This drastic rise is probably due to the intervention of the central bank to curb inflation, curb the overheating of the economies or adjust to

the exogenous economic forces. High rates can also The average of the FDI data analysis indicates that the median value is slightly above 0.54, meaning that there is a moderate degree of foreign investor interest over the period being analysed shows a decrease as the g, indicating that there are more observations lower than the median, but only are is some room to be found in fluctuations. Such a contraction could also reflect some stage of economic corrections and stabilisation, whereby policies might have been implemented to encourage growth, as well as to support the fight against inflation better. The relatively moderate rates that describe this time may be attributed to the compromise between stimulating the growth of the economy and maintaining the stability of prices. Interest rates show a stable, downward trend in the late 2000s and early 2010s, interrupted by short bursts of upwards movements, which is likely to indicate the responses to the global financial situation and attempts to keep the domestic economic activity stable amid the global uncertainties. Reduced rates in this period may have been meant to increase the amount of credit by businesses and consumers, thus stimulating investment and consumption.

Going into the 2020s, the rates are nearing historic lows, in line with a global directive, which in turn is low rates, especially in the face of exigencies such as the COVID-19 pandemic. Other central banks in the world stated low rates in order to enable economic recovery, encourage spending and also to support financial market stability, as seen in Bangladesh. The last part of the graph captures a slight increase, which means that there are some positive signs of policy normalisation or that its efforts are underway to restrain inflation without excessive restraint against economic growth. This general trend influences the strategic use of interest rates by the monetary authorities of Bangladesh to manoeuvre complex economic forces both in the local and global environment.

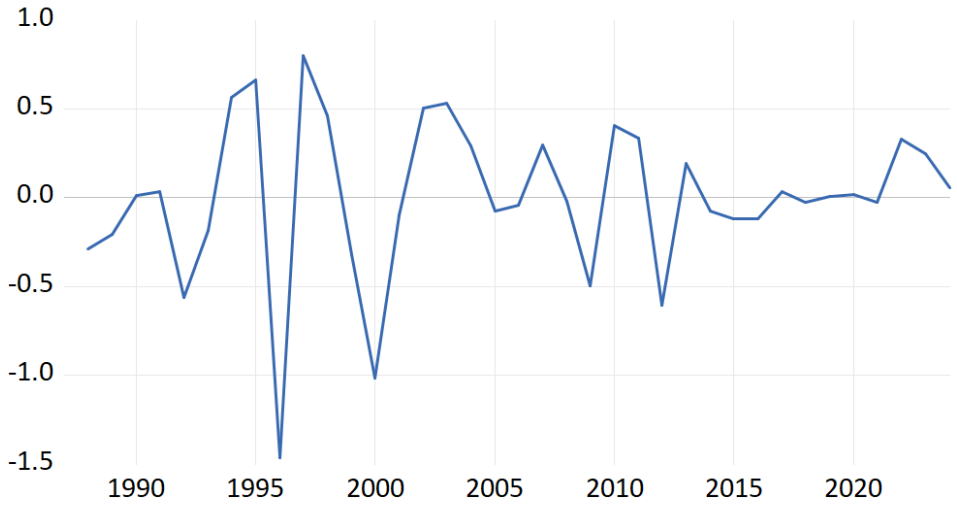

Figure 9: Trend spike of interest rate in Bangladesh

The graph shows the volatility of inflation over time, measured as fluctuations around the mean inflation rate from the late 1980s to the early 2020s. The sharp peaks and troughs during the 1990s and early 2000s indicate periods of high instability, where inflation rates were more unpredictable—likely reflecting macroeconomic shocks, policy changes, or external crises. After 2010, the volatility visibly declined and stabilized, suggesting that inflation became more predictable and well-managed through improved monetary and fiscal policies. Overall, the trend demonstrates a shift from a highly volatile inflation environment in the early years to a more stable and controlled inflation regime in the later decades.

Table 1: Descriptive statistics

	FDI	GGR	IFR	INR
Mean	0.540753	5.401090	6.484407	3.530407
Median	0.410989	5.367990	6.160499	3.697500
Maximum	1.735320	7.881915	11.39517	6.193213
Minimum	0.000861	2.416257	2.007174	1.051667
Standard Deviation	0.494035	1.329474	2.308500	1.602613

Skewness	0.731044	-0.270101	0.047518	-0.149059
Kurtosis	2.548547	2.361180	2.695352	1.798633
Jarque-Bera	3.707391	1.108188	0.161250	2.425917
Probability	0.156657	0.574592	0.922540	0.297316

Table 1 provides an exhaustive summary of four financial variables in Bangladesh, such as Foreign Direct Investment (FDI), Gross Growth Rate (GGR), Inflation rate (IFR) and Interest rate (INR) with descriptive statistics. These indicators can give us helpful information about the economic performance of the country and financial stability of the country during the period in question.

Average of the FDI data analysis indicates that the median value is slightly above 0.54 meaning that there is a moderate degree of foreign investor average over the period being analyzed. The median, which is about 0.41 indicates that there are more observations lower than the median but only some few instances showed low or insignificant investment. Its high score of approximately 1.74 brings into focus instances of peak investment in foreign direct inve, which could have been en as a result of good investment policies or economic reforms. The standard deviation value of about 0.49 indicates the degree of variability that is moderate, and the skewness value is 0.73, which shows that the distribution is slightly right-deviated, that is, greater values pull the mean higher by a slight margin. The value of kurtosis of approximately 2.55 means that the tail is less extreme than in the case of a normal distribution, that is, there are fewer extreme values.

On the Gross Growth Rate (GGR), both the mean and median are about 5.4 and 5.37, respectively, and it is observed that there is a smooth trend of economic growth. The top, which is close to 7.88, indicates the existence of times of rapid economic growth, which may have been driven by significant sectors of the economy, including the textile and manufacturing industries. The lowest point of 2.42 indicates that growth has not significantly decreased below the mean, whereas the standard deviation of 1.33

illustrates that fluctuations are moderate around the mean. The skewness is negative but with a relatively small value of around -0.27; this is an indication of a slight skewness to the left, hence the uncommon appearance of lower growth rates, but with the effect that they have towards the mean is inclined towards the downward direction. The post-hoc of 2.36 indicates a distribution with less weight at the ends; therefore, no extreme downturns.

The mean of the Inflation rate (IFR) is approximately 6.48, which shows that there is a high inflation rate in Bangladesh, and a median which is closely alike at approximately 6.16. The peak inflation of 11.40 is so high that there can be substantial price growth, possibly in cases of economic shocks or disruptions in supply chains. The lowest inflation of about 2.01, on the other hand, shows periods of low inflation or deflationary forces. The standard deviation of around 2.31 shows significant variability in the inflation. The skewness of the distribution is nearly 0, at approximately 0.05, which indicates the distribution to be roughly symmetric, and the kurtosis is approximately 2.69, indicating the distribution to be of light tails, i.e. extreme cases of inflation are relatively uncommon.

Lastly, the Interest rate (INR) average is around 3.53, the median is around 3.70, indicating that the normal interest rates in Bangladesh are around 3.53. The highest interest rate of almost 6.19 is indicative of the monetary tightening or increasing the borrowing expenses, whereas the lowest is close to 1.05, showing instances of monetary easing. The standard deviation of 1.60 indicates that there was moderate variation during the period. It carries a negative skew of about -0.15, which shows that it has a slight inclination towards a lower interest rate. The fact that the kurtosis is almost equal to 1.80 shows that there are lighter tails to the interest rate distribution, as opposed to having a normal distribution, which means that extreme changes in interest rates are rare.

Table 2: Unit root tests of the variables

	FDI		GGR		IFR		INR	
	Level	1st diff	Level	1st diff	Level	1st diff	Level	1st diff
ADF	-1.835	-7.03***	-3.65***	-7.18***	-3.97***	-7.43***	-1.617	-4.06***
PP	-1.725	-7.04***	-3.55***	-12.27***	-4.02***	-9.43***	-1.950	-3.76***

Notes: The asterisks, *, ** and *** denote statistically significant at 10%, 5% and 1% level of significance, respectiveLy.

Table 2 shows the outcome of the unit root test of the key economic variables of the subject matter (Foreign Direct Investment, GDP Growth rate, Inflation rate and Interest rate (INR). These tests will be done to investigate the stationarity of the variables. The Augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) tests are used to establish the characteristics of the variables under consideration of stationarity. These two test outcomes indicate that all the variables lie at their first difference, that is, the integrated order of one, I(1). This plays a vital role in modelling and forecasting because non-stationary data should not be used in regression analysis to obtain unreliable and spurious results. Moreover, the reason that these variables are I(1) allows one to test a cointegration hypothesis that would assist in determining the long-run equilibrium relationships between them..

6 RESULTS AND DISCUSSION

Now, the study discusses the in-sample estimation findings of the models to find out the relationship among the considered variables.

Table 3: VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-212.6054	NA	2.789900	12.37745	12.55521	12.43881
1	-161.4090	87.76529*	0.376285*	10.36623*	11.25500*	10.67303*
2	-151.4180	14.84376	0.551740	10.70960	12.30939	11.26185
3	-140.7620	13.39615	0.829168	11.01497	13.32577	11.81266

Note: * indicates lag order selected by the criterion

The first step of the co-integration test is the selection of the lag order. Several methods can be used to determine the optimal lag period for the VAR model. From Table 3, it is evident that all five methods suggest a lag of 1. So, the optimal lag order for the VAR model is 1.

Table 4 Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.501670	53.66102	47.85613	0.0129
At most 1	0.399070	28.58728	29.79707	0.0684
At most 2	0.180854	10.25333	15.49471	0.2617
At most 3	0.081784	3.071609	3.841465	0.0797

Note: Trace test indicates 1 cointegrating equation(s) at the 0.05 level, * denotes rejection of the hypothesis at the 0.05 level.

Table 5 Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.501670	25.07374	27.58434	0.1014
At most 1	0.399070	18.33395	21.13162	0.1178
At most 2	0.180854	7.181724	14.26460	0.4679
At most 3	0.081784	3.071609	3.841465	0.0797

Note: Max-eigenvalue test indicates no cointegrating equation(s) at the 0.05 level, * denotes rejection of the hypothesis at the 0.05 level.

The Johansen cointegration framework was utilised to assess the relationship between foreign direct investment (FDI) inflows and inflation in the long run in Bangladesh based on Trace and Maximum Eigenvalue tests. These steps will aid in arriving at the conclusion of either a long-term association or not between the variables during the time period under study.

The Unrestricted Cointegration Rank Test (Trace) has been summarised in Table 4. Trace of the null hypothesis of no cointegration is 53.66, which is above the 5 per cent critical value of 47.85 and the p -value p-value of 0.0129. The null hypothesis of no cointegrating vector is therefore rejected at the 5% level of significance, meaning that there must be at least one cointegrating relationship. The Trace statistics of the subsequent nullized congruence at most one, two and three cointegrating equations are 28.59, 10.25 and 3.07, respectively, which are lower than the corresponding critical value (29.80, 15.49 and 3.84). The results cause failure to reject the null hypothesis and prove the presence of a single cointegrating equation to the Trace test, at 5： %.

Table 5 shows the outcomes of the Unrestricted Cointegration Rank Test (Maximum Eigenvalue). Statistics of test of none, at most one, at most two and at most three

cointegrating equations are 25.07, 18.33, 7.18 and 3.07, respectively. The values of all these are less than the corresponding 5% critical values (27.58, 21.13, 14.26 and 3.84), and the p -p-values are found to be more than 0.05. To this end, therefore, the null hypothesis that there is no cointegration is not rejected under the Maximum Eigenvalue test.

The results combined have a mixed effect. Although the Trace test suggests that there is one long-run cointegrating relationship between the variables, the Maximum Eigenvalue test fails to support the finding at the 5% level of significance. In the empirical practice, the solution to such divergence is usually to give preference to the Trace test, which is deemed more effective in establishing the existence of several cointegrating vectors. Therefore, according to the Trace test, the research has concluded that there is an equilibrium relationship that exists between inflation and FDI inflows in Bangladesh in the long run.

The findings generally confirm the fact that there was a single co-integrating equation at the 5 per cent level. This implies that there exists a long-run balance between inflation and inflows of FDI and that the equilibrium balances other than the deviations, which are not permanent and will decline over the long period. The inflationary effects can, therefore, be said to have a long-term impact on the FDI inflows, thus highlighting the significance of macroeconomic stability in attracting foreign investment to the country.

Table 6: Cointegrating Equation

Normalised cointegrating coefficients (standard error in parentheses)			
FDI	GGR	IFR	INR
1.000000	-0.177054 (0.11041)	-0.324523 (0.06538)	-0.227608 (0.07368)

Source Eviews

Table 6 demonstrates the cointegrating equation that will exist between the dependent variable FDI. In the long-run regime, the indicators of the coefficients are reversed. The model shows that higher GGR has a positive effect on FDI, meaning that the higher the

GGR will cause an increase in FDI. On similar lines, the equation assumes that the positive long-run impacts of both IFR and INR on FDI are positive, such that an increase in IFR would create a rise in FDI..

Table 7: Vector error correction model

Coin equ:	CointEq1			
FDI (-1)	1.000000			
GGR (-1)	-0.177054			
IFR (-1)	-0.0324523			
INR (-1)	-0.227608			
C	3.278773			
Error correction	DFDI	DGGR	DIFR	DINR
CointEq1	-0.147815	0.366762	1.544510	0.631023
DFDI (-1)	-0.175726	0.368974	-1.041271	0.570960
DGGR (-1)	-0.023869	-0.404369	0.077127	-0.041235
DIFR (-1)	-0.022672	0.072346	0.090782	0.111276
DINR (-1)	-0.030745	0.092718	0.279862	0.384027
C	0.011759	0.070044	0.090726	0.002075

Source: EViews output

The Vector Error Correction Model (VECM) of the foreign direct investment (FDI), gross growth rate (GGR), inflation rate (IFR), and interest rate (INR) of Bangladesh can be seen in Table 7. A long-run equilibrium relationship between these variables is defined by the equation of cointegration (CointEq1). The coefficient attached with GGR (-0.177054) suggests that the higher economic growths are correlated with a reduction in FDI inflows in the long run, which can be explained by a localisation effect or policy limitations—similarly, negative values of the coefficients of IFR (−0.0324523) and the network.INR (−0.227608) indicates that high rates of inflation and interest rates discourage FDI inflows. The constant value (3.278773) will represent a long-run equilibrium level of FDI that will take place when other factors are held constant.

Under the DFDI, the error-correction term of (CointEq1) is -0.147815, which is negative, and this absolute value is Taylor was less than one; this is to verify the existence of a stable adjustment mechanism. This coefficient suggests that about 14.78% of the disequilibrium in FDI is recreated every period to the long-run equilibrium level, which shows the coefficient to have a moderate adjustment pace. DFDI (−1) (−0.175726), DGGR (−1) (−0.023869), DIFR (−1), and DINR (−1) one-period lagged coefficients are the direct effects of the former changes in these variables on the present FDI. The coefficients of past FDI and growth rate are relatively low, whereas the impact of inflation and interest-rate change is relatively weak. The terms C that come with each equation of the difference are not large-scale, and it is observed to have few autonomous shocks. Overall, this study has shown that despite the fact that FDI in Bangladesh still goes into a long-run equilibrium relationship with the variables of growth, inflation, and interest rates, the process of short-run adjustment is slow, and the macroeconomic stability is also of vital importance in supporting short-run inflows of FDI.

Table 8: Results of Regression Analysis

Variables	Coefficients	Std. Error	t- Statistics	Prob.
C	-0.977167***	0.335336	-2.913994	0.0063
GGR	0.194083***	0.051151	3.794290	0.0006
IFR	0.045512	0.028956	1.571759	0.1253
INR	0.049441	0.042412	1.165720	0.2518
R-squared	0.397180			
Adj R-squared	0.343990			
F statistic	7.467190***			0.000572

Source Eviews output

Table 8 presents the findings of a multiple regression model used to determine the impact of the gross growth rate (GGR), inflation rate (IFR), and interest rate (INR) on the foreign direct investment (FDI) in Bangladesh. The R-square of 0.3971 is an indication that approximately 39.7 per cent of the movement of the FDI inflows may be explained

by the independent variables, and the adjusted R-square of 0.3439, which implies that there is a moderate ability to clarify when the number of predictors is considered. The F-value of 7.46719 is very significant (p=.000572, alpha=.01), which means that the general fitting model gives sufficient evidence, and the overall explanatory variables significantly impact the FDI.

The independent variables (GGR) contain a positive and statistically significant coefficient (0.194083) of 0.0006, which means that a positive correlation exists between increasing the level of economic growth and the inflows of FDI. This outcome can be linked to the growth-led investment hypothesis, according to which good economic performance increases the confidence of the investors. Conversely, the IFR value at 0.045512 (p = 0.1253) is positive but indeed statistically non-significant and therefore the impact of moderate inflation on FDI is only minor in the short-term. The coefficient of the INR is found to be 0.049441 (p=0.2518), which is also positive but not significant, meaning that changes in the domestic interest rate did not have a substantial impact on the FDI inflows during the period in question. The value of the intercept of -0.977167 is significant at the 1 per cent level, which indicates the existence of other structural factors that are not included in the model and that could have adverse effects on FDI.

On the whole, the result of regression indicates that economic growth is the key variable of the inflow of FDI into Bangladesh, with the effects of inflation and interest rates being relatively weak and statistically unimportant. These results highlight the importance of maintaining constant growth policies in an attempt to maintain investor confidence and encourage long-term foreign investment.

Table 9: Results of the extended regression model including inflation volatility

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.946197	0.415848	-2.275346	0.0300
GR	0.188195	0.061844	3.043086	0.0047
IF	0.049254	0.031750	1.551303	0.1310
IRS	0.047447	0.046678	1.016483	0.3173
GARCH01	-0.052579	0.350833	-0.149868	0.8818

R-squared	0.364941	Mean dependent var	0.570236
Adjusted R-squared	0.282997	S.D. dependent var	0.490947
S.E. of regression	0.415715	Akaike info criterion	1.210611
Sum squared resid	5.357379	Schwarz criterion	1.430544
Log likelihood	-16.79099	Hannan-Quinn criter.	1.287373
F-statistic	4.453581	Durbin-Watson stat	0.955429
Prob(F-statistic)	0.005846		

Table 9 presents the results of the extended regression model that incorporates inflation volatility (GARCH term). The results show that economic growth (GR) has a positive and statistically significant effect on the dependent variable (p = 0.0047), while inflation (IF) and interest rate spread (IRS) have positive but insignificant effects. The GARCH(01**)** coefficient, representing inflation volatility, is negative (–0.0526) but statistically insignificant (p = 0.8818), indicating that although higher inflation uncertainty slightly reduces the dependent variable—consistent with theoretical expectations—its impact is not strong enough to be conclusive. Overall, the results suggest that while growth remains a key driver, inflation volatility does not exert a significant influence in this model specification.

7 Conclusion and Recommendations

7.1 Conclusion

The study empirically tested the influences of inflation on foreign direct investment (FDI) inflows in Bangladesh on a 1987- 2024 time frame by using the Johansen cointegration analysis, a Vector Error-Correction Model (VECM), and Ordinary Least Squares (OLS) regression. Its main objective was to explore an equilibrium of the long-run and short-run dynamic associations of inflation and FDI, considering the GDP growth rate as well as the lending interest rate.

The existence of the relationship between FDI, inflation, GDP growth and interest rate through cointegration was confirmed by the presence of the long-run equilibrium relationship. The Trace statistic showed that there was one cointegrating vector moving at the 5 per cent level of significance, implying that the macroeconomic variables chosen to be used in the analysis move together across time. This observation supports the hypothesis that macroeconomic stability, especially price stability, must be significant in supporting long-term foreign investment. Even though the same evidence was not produced in the Maximum Eigenvalue test, the Trace test value is both theoretically and empirically plausible because they are usually more consistent when there are many long-run equilibria, which can be present.

Normalized cointegrating coefficients showed that there are positive long-run effects of GDP growth, inflation, and interest rate on FDI. The adverse signs of inflation and the interest rate suggest that the increase in domestic prices and the increased cost of borrowing encourage foreign inflow into the country. However, on the flip side, the long-term positive contribution of GDP growth speaks of the high importance of a strong and growing domestic market as the key magnet of foreign investors. These findings resonate with the hypothetical hypotheses of neoclassical and macro stability theories, which postulate that incessant inflation affects investment planning, generates uncertainty, and reduces competitiveness.

Those relations could also be explained by VECM analysis, which also differentiated between short-run and long-run dynamics. The significantly negative error-correction coefficient of -.1478 shows that the system is correcting about 14.8 per cent disequilibrium annually and thus the system is moderately adjusting to the long-run equilibrium. This indicates that though the FDI inflows in Bangladesh respond to the shocks in inflation and interest rate, there is a slow nature of convergence to the process (structural rigidities and delayed policies). In the short term, changes in inflation and interest rates are weak yet statistically non-significant changes in FDI, which means that foreign investors react more effectively to long-term stability expectations rather than short-term prices.

These results were further strengthened by the one-way regression model of OLS. The model as a whole showed a statistically significant value (F 7.467, $p < 0.01$) with R 2 equal to 0.397, which implies that about 40 per cent of the variation in FDI inflows is equally explained by inflation, GDP growth, and interest rate. Among them, GDP growth was the only predictor that had a positive and statistically significant effect (=0.194, $p = 0.01$), supported by the growth-led FDI hypothesis. Inflation and interest rate coefficients were positive but not significant, indicating that moderate inflation might not necessarily discourage FDI as long as it is within predictable limits and the economy keeps growing.

Comprehensively, all these empirical results indicate the existence of long-run, non-linear, stability-dependent relationships between inflation and FDI in Bangladesh. Constant economic growth and reliable macro-policy models will attract foreign capital, and inflation volatility puts investors out. The findings support the previous evidence of the region (Mostafa 2020; Mehak and Waqas 2023), according to which price stability and not low inflation per se are the most important determinants of foreign investment. The Bangladesh experience in attracting FDI within the last thirty years has thus been supported by its slow taming of inflation and stable GDP rate, but still, the instances of

double-digit inflation and fluctuating exchange rates are playing a role in deterring sustained inflows.

7.2 Policy Implications and Recommendations

According to the empirical evidence, it is possible to recommend some policy directions that can be implemented to improve the situation in Bangladesh in terms of the investment environment and overall macroeconomic resilience. To begin with, there is a need to ensure that inflation is kept low and predictable by using a credible monetary policy. The Bangladesh Bank ought to strengthen the mechanisms of inflation-targeting and enhance transparency of the policy to anchor the expectations of the investors. The results of this paper suggest that the volatility of inflation, as opposed to the level of inflation per se, is likely to deter foreign investment. Thus, inflationary uncertainty may be reduced by guaranteeing the credibility and independence of central banks to strengthen investor confidence.

Second, the government needs to maintain the growth of GDP as the most powerful long-term driver of FDI. The favourable attitude towards diversification of exports, development of infrastructure and modernisation of industries remains crucial to boost the productivity of the economy. The indirect effect of increasing stable and long-term capital inflows will be through policies that enhance efficiency and competitiveness in manufacturing and service industries, as the returns on investments increase. Simultaneously, there is a necessity to guarantee the consistency of interest-rate policy and build the domestic capital market. Unstable or artificially high lending rates put domestic and foreign investors off. A slow transition to market-based rates, accompanied by the further development of financial markets, would enable the financing costs to mirror the actual economic factors and facilitate the further efficient distribution of capital resources.

In addition, institutional quality and governance are also essential to be strengthened. Macroeconomic discipline should be complemented with transparent regulatory

frameworks, effective enforcement of contracts and less bureaucratic delays. Good institutions and predictability of regulations contribute towards the conversion of price stability into actual investor confidence, which is essential in maintaining FDI. Moreover, Bangladesh needs to combine inflation targeting and fiscal coordination to achieve a coherent stabilisation policy. Price stability cannot be achieved by monetary control in the face of an expansionary fiscal policy. The recurring budget deficits funded by domestic borrowing can spark inflationary pressures, which will destroy the credibility of monetary actions. Therefore, a coordinated fiscal-monetary model, which may be a medium-term spending plan, is required to maintain stability.

Furthermore, the nation might slowly transition to some early type of inflation-targeting regime, with the experience of other successful developing economies. A flexible inflation-targeting strategy would enable the central bank to act on the changing macroeconomic environment and still be transparent in its policies. Nevertheless, the approach must be after the institutional reforms in central-bank independence, data transparency, and fiscal responsibility. Lastly, Bangladesh needs to be more resilient to external shocks; the inflows of FDI are usually affected by the global financial volatility, fluctuations in commodity prices, and uncertainties in geopolitics. Having sufficient foreign-exchange reserves, setting up hedging instruments, and diversification of the export base can assist the economy to absorb external shocks and maintain investor confidence.

To recap it all, the FDI inflows in Bangladesh cannot be sustained without regular macroeconomic management, which is anchored by inflation, good growth, sound financial institutions and good governance. The concerted actions of the fiscal authorities, the central bank, as well as the regulatory bodies, will not only draw in long-term investment but also protect the economic strength of the country in an environment that is becoming more uncertain globally.

7.3 Limitations and Future Research.

Although the current research provides strong quantitative data, a number of limitations would indicate the need to conduct further research. First, the model does not take into account institutional and political factors, e.g. the quality of governance, corruption perception, as they may have an indirect effect on foreign direct investment. Secondly, linear specification might not allow the possibility of nonlinear threshold effects, where a moderate inflation rate might trigger investment, and unaffordable high inflation might discourage it. Thirdly, external factors, such as the variation in the prices of global commodities or shocks in exchange rates, were not necessarily factored into the model. The present study can be further elaborated by future studies utilizing non-linear autoregressive distributed lag (NARDL) models or structural-break analysis to look at asymmetries and regime changes.

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9 Appendices

	A	B	C	D	E	F
1	Y	IF	GR	IRS	FDI	
2	1987	9.8747	3.7724	1.23896	0.01319	
3	1988	7.41277	2.41626	1.23896	0.00692	
4	1989	6.04548	2.83658	1.23896	0.00086	
5	1990	6.12672	5.62226	1.1936	0.01025	
6	1991	6.35736	3.48523	1.10494	0.00449	
7	1992	3.63408	5.44269	2.05069	0.01174	
8	1993	3.01482	4.71156	4.64448	0.04236	
9	1994	5.31374	3.89013	6.19321	0.03301	
10	1995	10.2978	5.12128	6.13749	0.005	
11	1996	2.37713	4.52292	4.73051	0.02913	
12	1997	5.3056	4.4899	3.78938	0.2889	
13	1998	8.40224	5.17703	3.63083	0.38024	
14	1999	6.1067	4.67016	3.66167	0.3503	
15	2000	2.20826	5.29329	4.06833	0.52536	

16	2001	2.00717	5.07729	3.66667	0.14544	
17	2002	3.33256	3.83312	4.70167	0.09558	
18	2003	5.66871	4.73957	4.9325	0.44596	
19	2004	7.58754	5.23953	4.5975	0.68947	
20	2005	7.04662	6.53594	5.08083	1.17065	
21	2006	6.76526	6.6719	5.67917	0.63586	
22	2007	9.10698	7.0586	5.64167	0.81776	
23	2008	8.90194	6.01379	5.3425	1.44966	
24	2009	5.42347	5.04512	5.5125	0.87952	
25	2010	8.12668	5.57179	5.00833	1.06897	
26	2011	11.3952	6.46438	4.48417	0.9834	
27	2012	6.2175	6.52146	3.72833	1.1885	
28	2013	7.53041	6.01361	1.87167	1.73532	
29	2014	6.99164	6.06106	3.145	1.4687	
30	2015	6.19428	6.55264	3.465	1.45078	
31	2016	5.51353	7.11348	4.21	0.87953	
32	2017	5.70207	6.59025	3.93417	0.61634	
33	2018	5.54362	7.31941	2.99333	0.75355	
34	2019	5.592	7.88192	2.78083	0.54324	
35	2020	5.69107	3.44802	2.2275	0.40786	
36	2021	5.54565	6.93868	2.27917	0.41412	
37	2022	7.69695	7.09983	1.56586	0.35531	
38	2023	9.8835	5.77511	1.05167	0.31667	
39	2024	10.4657	4.22326	1.33342	0.33465	