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The Impact of Macroeconomic Indicators on Economic Growth in Post-Soviet Union Countries

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ABSTRACT

This study examines the impact of key macroeconomic indicators Foreign Direct Investment (FDI), inflation, and corruption on GDP growth in post-Soviet Union countries during the 2015–2022 period. It is motivated by the region's economic volatility, which is largely driven by dependence on limited sectors such as oil and gas. Using regression and cross-sectional analysis based on data from international sources, the findings reveal that FDI has a positive but statistically insignificant relationship with economic growth, while inflation has a significant negative effect. The Corruption Perception Index (CPI) shows no statistically significant impact on GDP growth. These results highlight the importance of inflation control as a policy priority, alongside institutional reforms to enhance the developmental effect of FDI. The study is limited by data availability in certain countries, suggesting future research should include a broader set of indicators and an extended time frame. Overall, the study contributes to the literature on transitional economies and offers valuable policy insights for governments, businesses, and investors aiming to promote long-term economic stability and growth in the region.

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INTRODUCTION

The global economic landscape continues to undergo significant transformations, with factors such as market globalization, technological change, and institutional shifts shaping national prosperity. A key component of this evolution is modern economic growth, which encapsulates sustained increases in GDP, along with improvements in productivity, living standards, and socio-economic welfare since the Industrial Revolution (Malanima, 2021).

The global economic landscape is a constantly evolving arena shaped by a multitude of factors including geopolitical shifts, technological advancements, institutional developments, and financial market dynamics. Among these, modern economic growth stands as a central pillar of national progress and prosperity. Economic growth not only reflects a country's capacity to increase its output over time but also represents improvements in the standard of living, productivity, innovation, and institutional resilience (Tri, 2022).

Historically, the post-Industrial Revolution period marked a significant inflection point in global economic thinking, with many nations shifting their focus from subsistence and agrarian-based systems to industrial and knowledge-based economies. In this regard, modern economic theory has consistently emphasized the importance of sustained increases in real GDP, productivity per capita, technological innovation, and human capital development as key drivers of long-term prosperity.

However, not all countries have managed to capitalize on these developments evenly. Many of the nations that once formed the Soviet Union have encountered significant structural economic challenges in the post-independence period. Many Post-Soviet countries continue to rely heavily on extractive industries such as oil and gas, with limited diversification into high-value-added sectors such as manufacturing, services, or technology. This overreliance on volatile commodity markets has subjected these economies to boom-and-bust cycles, significantly weakening their capacity for sustainable and inclusive growth (Cavalcanti et al., 2015)

The inherent vulnerability of these economies becomes apparent when global commodity prices fluctuate. For countries whose GDP is heavily linked to oil and gas exports, a decline in international energy prices can result in fiscal deficits, currency depreciation, unemployment, and reduced investor confidence. In such cases, growth becomes inconsistent, and the broader developmental agenda is hampered by fiscal and institutional fragility.

This study is driven by the desire to analyze and understand the macroeconomic variables that influence economic growth in Post-Soviet Union countries. Specifically, the research will examine the impact of Foreign Direct Investment (FDI), inflation, and corruption, as these three variables have emerged as critical indicators of economic performance in developing and transitioning

economies. By analyzing data between 2015 and 2022, this study aims to identify both the challenges and opportunities associated with these variables and provide insights into how growth can be sustained and made more inclusive.

1. Foreign Direct Investment (FDI)

Foreign Direct Investment (FDI) has long been recognized as a key driver of economic development, particularly in developing and emerging economies. FDI refers to a long-term investment made by a firm or individual from one country into productive assets or business operations in another country. This form of investment is distinct from portfolio investment because it implies a significant degree of influence or control over the foreign enterprise. FDI typically involves not only the flow of capital but also the transfer of knowledge, managerial expertise, technological innovation, and international business practices (R. Sijabat, 2023). These elements make FDI a multifaceted vehicle for enhancing the productive capacity of the host economy.

One of the most critical advantages of FDI is its potential to stimulate economic growth through increased capital formation, job creation, and improved access to global markets. However, the magnitude and direction of its impact are far from uniform across different national contexts. The effectiveness of FDI in promoting growth is influenced by several factors, including the type of investment whether it is horizontal (market-seeking) or vertical (efficiency-seeking) and the origin of the investment, particularly whether it comes from developed or developing countries. Furthermore, the sectoral composition of FDI whether it is directed toward manufacturing, natural resources, or services plays a decisive role in determining its developmental impact. For example, FDI in knowledge-intensive sectors like information technology and pharmaceuticals often yields higher long-term benefits through innovation and knowledge spillovers compared to extractive industries.

The institutional quality and regulatory framework of the host country are also decisive in mediating the effects of FDI. A stable macroeconomic environment, transparent legal systems, strong property rights, and low corruption levels are essential to attracting and retaining high-quality FDI. Weak institutions, on the other hand, may lead to the exploitation of local resources without adequate reinvestment, resulting in limited developmental gains.

FDI also generates indirect benefits through spillover effects. These include technology diffusion, the adoption of advanced management practices by domestic firms, increased competition, and improved standards of corporate governance. For instance, local firms that interact with foreign affiliates often gain access to new technologies and quality standards, prompting them to upgrade their capabilities and become more competitive (Nguyen, 2022). The presence of foreign firms can also deepen integration into global value chains, enhancing export potential and diversifying the economic base of the host country.

In the current global economic environment, the nature of FDI is evolving. Investors are increasingly targeting locations that offer not just cost advantages, but also skilled labor, robust infrastructure, and a dynamic innovation ecosystem. Many multinational enterprises now integrate R&D operations into their international strategies, seeking partnerships with universities, research centers, and local tech hubs to harness local talent and co-create innovations (Guo et al., 2021). As a result, countries that invest in education, digital infrastructure, and innovation policy are more likely to attract high-value FDI that contributes to long-term structural transformation.

Moreover, there is a growing emphasis on sustainable and responsible investment practices. Environmental, social, and governance (ESG) criteria are increasingly influencing investor decisions. Multinational corporations and institutional investors are placing greater importance on factors such as carbon footprint, labor rights, and ethical governance. This shift has led to the emergence of green FDI, which supports sustainable infrastructure, renewable energy, and environmentally friendly technologies. In this context, FDI becomes not only a source of capital and innovation but also a tool for advancing the United Nations Sustainable Development Goals (SDGs), especially in resource-constrained developing countries (Tsoy & Heshmati, 2023).

Finally, it is important to acknowledge the risks and challenges associated with FDI. These include potential crowding out of domestic firms, profit repatriation, and the formation of enclaves that fail to integrate with the wider economy. Therefore, while FDI presents significant opportunities, it must be carefully managed through strategic policies that maximize its developmental impact. This includes the formulation of coherent investment promotion strategies, effective regulatory oversight, and proactive capacity-building initiatives to ensure that the benefits of FDI are widely shared across the economy and society.

2. Inflation

Inflation, broadly defined as a sustained increase in the general price level of goods and services, is another key determinant of macroeconomic stability and growth. Global inflationary pressures are expanding beyond food and energy, now encompassing nearly all sectors, including transportation, labor, housing, and manufactured goods. As global supply chains adjust post-pandemic, the structural components of inflation have become more entrenched and persistent. In countries such as the United States, the United Kingdom, and members of the euro area, more than half of the items in the consumer price index have recorded inflation levels above 4%, nearly double the official inflation targets of central banks (Martin, 2024).

One of the critical reasons for this sustained inflation is the existence of tight labor markets in many countries, which, when combined with low unemployment rates, drive up wages. While higher wages may offset some loss of consumer

purchasing power, they also contribute to cost-push inflation, thereby increasing overall price levels. Central banks, particularly in the G20 countries, have responded by tightening monetary policy through interest rate hikes and quantitative tightening. However, headline inflation is projected to remain elevated throughout 2023 and into 2025, especially in countries where energy costs remain high or where policy responses have been delayed. While the United States is making progress in curbing inflation, the euro area and the United Kingdom are still struggling, largely due to energy-related pressures and late monetary tightening (Hall et al., 2022)

For Post-Soviet countries, which often rely on imports for essential goods and raw materials, high inflation can have devastating consequences. It reduces real incomes, erodes savings, discourages investment, and increases the cost of borrowing. Moreover, inflation introduces uncertainty into the economy, making it difficult for businesses to plan for the future, thereby reducing long-term productivity and growth potential.

3. Corruption

Corruption is perhaps the most pervasive structural problem facing many developing and transitional economies today. Defined as the abuse of entrusted power for private gain, corruption distorts markets, undermines public trust, and limits the efficiency of government institutions. In economic terms, corruption acts as a deterrent to both domestic and foreign investment, thus impeding long-term economic development. It fosters unfair competition, rewards inefficiency, and misallocates resources, thereby distorting the economic playing field (Dhingra & Morrow, 2019).

One of the most detrimental impacts of corruption is its effect on public sector efficiency. Funds earmarked for healthcare, education, and infrastructure are often diverted to private pockets through bribery, embezzlement, and patronage systems. This undermines human capital development and severely restricts productivity growth. In addition, corruption weakens the rule of law, eroding confidence in property rights, contract enforcement, and judicial impartiality. This not only discourages entrepreneurial activities but also reduces the attractiveness of the country to foreign investors (Marquis & Qiao, 2018).

Moreover, corruption exacerbates income inequality by allowing political and economic elites to accumulate disproportionate wealth, while the majority of the population suffers from inadequate access to basic services. This contributes to social discontent and political instability, which in turn further discourage investment and growth. In several Post-Soviet countries, such as Kyrgyzstan, Tajikistan, and Belarus, government leaders have used the COVID-19 pandemic as a pretext to restrict civic freedoms, suppress dissent, and curtail anti-corruption efforts (Bethke & Wolff, 2023). Journalists, activists, opposition leaders, and civil society members have

frequently been targets of state-sponsored intimidation and surveillance, further compounding governance challenges.

Transparency International's most recent Corruption Perceptions Index (CPI) shows a sobering picture. Only three countries in the region, Georgia (55), Armenia (49), and Montenegro (46), score above the global average of 43. Meanwhile, Belarus, once above the average, has dropped 6 points, and countries such as Turkmenistan (19), Tajikistan (25), and Kyrgyzstan (27) remain at the bottom of the global rankings. These low scores reflect widespread institutional weaknesses and a lack of accountability in both public and private sectors.

4. Purpose of the Study

Given the structural vulnerabilities outlined above, this study investigates the macroeconomic indicators influencing economic growth in Post-Soviet Union countries, specifically from 2015 to 2022. The main motivation behind this research stems from the region's continued dependence on a narrow set of economic sectors, primarily extractive industries like oil and gas, which exposes these countries to external shocks and prevents them from achieving diversified and inclusive growth. By identifying and analyzing the roles of FDI, inflation, and corruption, this study aims to provide a more nuanced understanding of the forces driving or hindering economic development in these transitional economies.

5. Research Framework

The conceptual framework of this research revolves around the hypothesis that economic growth (as measured by GDP growth) in Post-Soviet countries is significantly influenced by the inflow of Foreign Direct Investment, the stability of price levels (inflation), and the quality of governance (measured by levels of corruption). These three indicators are interrelated and jointly affect economic per

6. Research Hypotheses (continued)

Table 1. *Research Hypotheses*

Hypothesis	Description
H1	Foreign Direct Investment (FDI) has a positive influence on GDP growth in Post-Soviet Union countries.
H2	Inflation has a negative influence on GDP growth in Post-Soviet Union countries.
H3	Corruption has a negative influence on GDP growth in Post-Soviet Union countries.

These hypotheses are formulated based on theoretical foundations and empirical evidence from prior studies. While FDI is generally considered a source of capital, technology, and productivity spillovers that can bolster economic growth, inflation is often associated with macroeconomic instability, reduced purchasing

power, and erosion of real investment returns. Meanwhile, corruption tends to distort the functioning of markets and institutions, deterring both domestic entrepreneurship and foreign investment.

7.   Theoretical and Practical Relevance

This study contributes both theoretically and practically. From a theoretical standpoint, it builds upon endogenous growth theory and institutional economics, integrating investment flows, price stability, and governance quality into a comprehensive model of economic performance. From a practical standpoint, the research provides valuable insights for policymakers in the Post-Soviet region, many of whom are actively engaged in economic reform and diversification strategies. The findings of this study could support efforts to:

1.   Attract more sustainable and strategic FDI,

2.   Strengthen anti-inflationary monetary policies,

3.   Improve institutional quality through anti-corruption frameworks,

4.   Reduce reliance on extractive sectors by creating a more conducive environment for non-resource-based economic activities.

The results of this research are expected to not only clarify the direction and magnitude of relationships between the selected macroeconomic indicators and GDP growth, but also offer tailored policy recommendations for governments aiming to stabilize and grow their economies in a more inclusive, diversified, and resilient manner.

8. Scope and Limitations

The temporal scope of this study covers the period from 2015 to 2022, which encompasses significant economic events such as the aftermath of the global oil price collapse (2014–2016), geopolitical developments in Eastern Europe, the COVID-19 pandemic, and post-pandemic recovery challenges. This range allows for an analysis of economic performance under both normal and crisis conditions, offering a richer and more nuanced understanding of macroeconomic behavior in the Post-Soviet context.

Geographically, the study includes a sample of Post-Soviet Union countries for which consistent and reliable data on GDP, FDI, inflation, and corruption are available. However, it must be noted that the diversity among these countries, both in terms of political systems and economic structures, may influence the strength and significance of relationships observed in the analysis. While some countries like Georgia and Armenia have made strides in institutional reform, others remain

trapped in cycles of rent-seeking and authoritarian governance, which may skew the aggregated results.

Additionally, while this research focuses on quantitative indicators, it acknowledges that qualitative dimensions such as political stability, civil liberties, education quality, and regional integration efforts may also play important roles in shaping long-term growth patterns.

METHODS

This chapter presents a comprehensive account of the methodological framework used to investigate the impact of selected macroeconomic indicators, Foreign Direct Investment (FDI), Inflation, and the Corruption Perception Index (CPI), on the GDP growth rate in countries of the former Soviet Union. The design of this research is grounded in a quantitative tradition, enabling a systematic, objective, and replicable exploration of the statistical relationships between variables over a defined time horizon, namely from 2015 to 2022. The methodological structure is crafted to ensure coherence between the research questions, the operationalization of variables, the data sources utilized, and the analytical techniques applied.

The study adopts a quantitative research paradigm because it facilitates precise measurement and allows for hypothesis testing through inferential statistics. Given that GDP growth rate is a continuous variable and the independent indicators, FDI, inflation, and CPI, are quantifiable and collected across time and countries, a quantitative approach provides a logical and empirically sound basis for uncovering patterns and drawing conclusions that are generalizable across the regional context under investigation (Amoah et al., 2015). Quantitative research is also particularly effective in assessing macroeconomic phenomena, where large datasets and statistical generalizations are commonly employed to explain structural economic outcomes (Kirkby, 2022).

The geographical focus of the study is on the fifteen countries that were formerly part of the Soviet Union, namely Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. These countries form a unique cluster for comparative analysis due to their shared political history, transitional economic experiences, and varied post-Soviet development trajectories. However, inclusion in the final sample is conditional upon the availability and reliability of data across the full time range (2015–2022). Countries with significant gaps in data reporting or inconsistencies in macroeconomic figures have been excluded to preserve the validity and robustness of the regression analysis (Nuijten & Polanin, 2020). The resulting sample, while shaped by pragmatic considerations of data completeness, remains representative of the broader regional trends.

All data used in this study are secondary in nature and sourced from reputable and internationally recognized databases. Foreign Direct Investment (FDI) and Inflation data are obtained from the World Bank Open Data repository and the International Monetary Fund (IMF), which offer harmonized and comparable

statistics across countries and time. The Corruption Perception Index is extracted from Transparency International's annual reports, which measure perceived levels of public sector corruption on a scale from 0 to 100, with higher scores indicating lower perceived corruption. GDP growth rate, the dependent variable of this study, is also retrieved from World Bank datasets and reflects annual percentage changes in real gross domestic product (Tacchella et al., 2018). These data sources are chosen for their credibility, methodological transparency, and global recognition, ensuring that the findings of the study are grounded in verifiable and consistent information.

The analytical strategy for this research centers on multiple linear regression analysis. This technique is selected for its capacity to quantify the extent to which independent variables, in this case, FDI, Inflation, and CPI, influence the dependent variable, GDP growth. The regression model is specified as follows:

$$GDP\ growth\ rate_{i,t} = \beta_0 + \beta_1\ FDI_{i,t} + \beta_2\ INF_{i,t} + \beta_3\ CPI_{i,t} + \varepsilon_{i,t}\ .$$

In this model, iii denotes the country, t denotes the year, β_0 is the intercept, and β_1, β_2, and β_3 represent the coefficients of the respective independent variables. The term $\varepsilon_{i,t}$ captures the stochastic error. By applying this model to the panel dataset, the research aims to isolate the individual and combined effects of the selected macroeconomic indicators on economic growth across the selected countries (Stams & Ashraf, 2023).

Prior to the estimation of the regression model, the data undergo several pre-processing steps, including descriptive statistical analysis to understand the distribution of each variable, normalization (if required) to adjust for scale differences, and correlation analysis to detect initial relationships. Moreover, diagnostic tests for multicollinearity using the Variance Inflation Factor (VIF), as well as tests for heteroskedasticity and autocorrelation, are conducted to ensure that the assumptions of linear regression are not violated. The statistical software packages SPSS and STATA are used to conduct the data analysis, offering robust capabilities for handling panel data and producing interpretable outputs (Park, 2015).

The operational definitions of the key variables are summarized in the following table:

Table 2. *Operationalization of Variables*

Variable	Type	Measurement Scale	Source	Model Role
GDP Growth Rate	Continuous	Annual percentage change in real GDP	World Bank	Dependent Variable
Foreign Direct Investment (FDI)	Continuous	Net inflows as % of GDP	World Bank	Independent Variable
Inflation Rate	Continuous	Annual % change in Consumer Price Index (CPI)	IMF, World Bank	Independent Variable

Corruption Perception Index	Continuous	Scale from 0 (highly corrupt) to 100 (very clean)	Transparency International	Independent Variable

The hypotheses tested in this study are formulated based on prevailing economic theories and existing empirical literature. The first hypothesis posits that higher levels of Foreign Direct Investment are positively associated with higher GDP growth rates. This expectation aligns with the view that FDI brings capital, technology, and managerial expertise, contributing to productivity and output expansion (Makieła et al., 2020). The second hypothesis anticipates a negative relationship between inflation and GDP growth, given that high inflation may erode purchasing power, distort investment planning, and generate macroeconomic instability (Correa, 2023). The third hypothesis suggests a positive relationship between CPI scores and GDP growth, implying that lower levels of perceived corruption enhance the investment climate and institutional effectiveness, which are conducive to economic development (Lubis, 2020).

While the study does not involve human subjects and thus does not raise issues typically associated with participant consent or privacy, ethical considerations remain paramount in ensuring the responsible use and representation of secondary data. All sources of data are properly acknowledged, and analysis is conducted with full adherence to the principles of academic integrity and transparency (Watson & Jackson, 2024).

In summary, the methodological approach outlined in this chapter provides a rigorous and coherent foundation for the empirical analysis to follow. By integrating a robust research design, reliable data sources, and appropriate statistical tools, the study is well-positioned to generate meaningful insights into the macroeconomic dynamics of post-Soviet economies. The next chapter will present the results derived from the regression analysis and interpret them in the context of the theoretical framework and the specific economic conditions of the region.

RESULT

In this section, the author outlines the main findings of the research in a descriptive and systematic manner. All the data discovered are presented objectively, without any interpretation or additional explanation, which will be discussed further in the discussion section. The purpose of writing the results is to provide a clear overview of the research findings through the presentation of relevant data, including figures, statistical values, observed trends, and comparisons between groups or variables being tested.

1. Multicollinearity Test

To ensure the robustness of the regression model and the reliability of coefficient estimates, a multicollinearity diagnostic was conducted among the three independent variables: Foreign Direct Investment (FDI), Inflation, and Corruption Perception Index (CPI). Multicollinearity occurs when two or more independent

variables in a regression model are highly linearly related, potentially inflating the variances of the parameter estimates and making them unstable and difficult to interpret.

To evaluate multicollinearity, this study employed two widely accepted statistical indicators: Tolerance and the Variance Inflation Factor (VIF). According to conventional thresholds, a Tolerance value below 0.1 and a VIF value above 10 would indicate problematic multicollinearity (Marcoulides & Raykov, 2019). Values closer to 1.0 for both indicators are generally favorable and suggest that the variables are not significantly collinear.

The output of the multicollinearity analysis is presented in Table 3 below.

Table 3. *Multicollinearity Test Results*

Variable	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	5.209	1.516	,	3.436	0.001	,	,
FDI (X1)	0.002	0.060	0.003	0.037	0.971	0.990	1.010
Inflation(X2)	0.250	0.068	0.340	3.662	0.000	0.956	1.046
CPI (X3)	0.023	0.031	0.067	0.720	0.473	0.955	1.048

The results clearly indicate that all variables meet the standard thresholds for multicollinearity diagnostics:

1. FDI (X1) has a Tolerance value of 0.990 and a VIF of 1.010, which strongly suggests a lack of multicollinearity and an independent contribution to the model.

2. Inflation (X2) exhibits a Tolerance of 0.956 and a VIF of 1.046, also far from any critical values that would indicate concern.

3. CPI (X3) shows a Tolerance of 0.955 and a VIF of 1.048, confirming its independence from the other variables.

Taken together, these results confirm that multicollinearity is not present in the regression model. This strengthens the validity of subsequent regression estimates and affirms that each macroeconomic variable contributes uniquely to the explanation of GDP growth variations in the observed dataset. Therefore, the model can be interpreted without concern for unstable coefficients due to multicollinearity.

2. **Simple Linear Regression Analysis**

To explore the individual impact of each macroeconomic indicator on the GDP growth rate of ex-Soviet Union countries, a series of simple linear regression models were constructed. Each model isolates one independent variable to evaluate its unique relationship with the dependent variable, GDP growth. The results from these regressions are presented in Table 4.

Table 4. *Simple Linear Regression Results*

Model	Variable	B	Std. Error	Beta	t	Sig.
1	(Constant)	2.576	0.512	,	5.031	0.000
	FDI (X1)	0.018	0.062	0.027	0.283	0.778
2	(Constant)	4.247	0.641	,	6.620	0.000
	Inflation (X2)	-0.241	0.066	-0.327	-3.626	0.000
3	(Constant)	2.620	0.060	,	1.903	0.000
	CPI (X3)	0.000072	0.032	0.000	0.002	0.998

The regression results are interpreted as follows:

1.   **Model 1: FDI and GDP Growth**

The coefficient for FDI (X1) is B = 0.018, with a p-value of 0.778, indicating a non-significant relationship. This suggests that variations in FDI levels do not have a statistically meaningful effect on GDP growth in the countries studied during the 2015–2022 period. The small Beta value (**0.027**) further indicates a negligible standardized effect. The direction of the coefficient is positive, implying that an increase in FDI is nominally associated with higher GDP growth, but the relationship lacks statistical support.

2.   **Model 2: Inflation and GDP Growth**

The coefficient for Inflation (X2) is B = -0.241, with a p-value of 0.000, which is highly statistically significant at the 1% level. The negative sign of the coefficient indicates an inverse relationship, meaning that increases in inflation are associated with reductions in GDP growth. The standardized Beta coefficient of -0.327 also confirms a moderate-to-strong effect size relative to the other variables tested. This result aligns with economic theory that links high inflation with macroeconomic instability, reduced purchasing power, and weakened investor confidence.

3.   **Model 3: CPI and GDP Growth**

The coefficient for CPI (X3) is B = 0.000072, with a p-value of 0.998, indicating a statistically insignificant relationship. The coefficient is extremely close to zero, both in unstandardized and standardized form (Beta = 0.000), suggesting no meaningful association between perceived corruption levels and GDP growth in this dataset. While CPI is conceptually important, this result suggests that its standalone influence on economic growth, at least over the time period and countries studied, is negligible or masked by other intervening factors.

Overall, these regression outcomes suggest that among the three indicators analyzed, only Inflation demonstrates a significant impact on GDP growth, and its influence is negative. Both FDI and CPI, although theoretically relevant, did not show statistically significant effects when examined in isolation. These insights will be discussed in more detail in the following section.

DISCUSSION

The empirical results of this study yield nuanced insights into the relationship between key macroeconomic variables, Foreign Direct Investment (FDI), Inflation, and the Corruption Perception Index (CPI), and GDP growth in ex-Soviet Union countries during the 2015–2022 period. While some findings conform with established macroeconomic theory, others diverge in ways that warrant careful contextual and institutional interpretation.

1. Multicollinearity and Model Integrity

A foundational observation from the analysis is the absence of multicollinearity in the regression models. All Tolerance values exceed 0.95, and all Variance Inflation Factor (VIF) values are well below the conservative threshold of 2.0, far from the conventional cut-off point of 10. This suggests that the independent variables, FDI, Inflation, and CPI, are statistically independent, minimizing distortion in the estimated regression coefficients. As a result, the model's integrity is preserved, and the individual effects of each macroeconomic indicator on GDP growth can be interpreted with greater confidence (Correa, 2023).

2. The Role of Foreign Direct Investment (FDI)

Contrary to classical and neoclassical economic expectations, the regression analysis reveals no statistically significant impact of FDI on GDP growth in the post-Soviet countries during the 2015–2022 period. This finding challenges the dominant view that FDI is a key catalyst for economic development, often credited with transferring capital, technology, and managerial expertise to developing and transitional economies (Salahodjaev & Isaeva, 2021).

One explanation may lie in the composition and destination of FDI within these economies. Much of the foreign investment in ex-Soviet states tends to be funneled into extractive industries, especially oil, gas, and mining, which are capital-intensive but do not necessarily create broad employment or stimulate downstream economic sectors (Rajnoha & Kánová, 2022). Additionally, institutional weaknesses, political instability, and regulatory uncertainty may undermine the efficiency and productivity of FDI in the region. Corruption, bureaucratic red tape, and non-transparent legal systems also contribute to the distortion of investment incentives, resulting in minimal spillover effects to the wider economy (Zhao et al., 2022).

Moreover, FDI inflows in the region may not always be motivated by economic efficiency but rather by geopolitical considerations, especially in countries with close ties to Russia or strategic significance to external powers. These dynamics can

diminish the positive developmental impact traditionally associated with FDI (Shammre & Alshahrani, 2024).

3. Inflation as a Key Determinant

Unlike FDI, inflation emerges as a statistically significant and negative determinant of GDP growth across the countries and years examined. This outcome is consistent with standard macroeconomic theory, which posits that high inflation creates economic inefficiencies by distorting relative prices, discouraging savings, and increasing uncertainty in investment (Álvarez et al., 2018).

For the ex-Soviet countries, persistent inflation may also reflect deeper structural vulnerabilities. Many of these economies depend heavily on commodity exports, particularly hydrocarbons and metals, making them susceptible to global price fluctuations. This reliance introduces fiscal volatility that complicates inflation management. Additionally, some central banks in the region lack operational independence or are influenced by political agendas, limiting their capacity to implement consistent inflation-targeting policies (Qanas & Sawyer, 2023). Exchange rate regimes across these countries vary widely, and in some cases, weak currency stability exacerbates imported inflation.

Inflation in transitional economies also affects household consumption and investment behavior more severely than in more advanced economies, where financial instruments for hedging inflation risks are more readily available. In this regard, inflation not only functions as a macroeconomic variable but also as a barometer of institutional credibility and governance quality (Khan & Hanif, 2018).

4. The Ambiguous Role of the Corruption Perception Index (CPI)

The CPI does not show a statistically significant relationship with GDP growth over the study period, which deviates from a large body of literature that typically associates corruption with negative macroeconomic performance. Previous studies have argued that corruption undermines growth through reduced investor confidence, misallocation of public resources, and weakened institutional trust (Mauro, 1995; Kaufmann & Kraay, 2002).

This lack of significance, however, does not necessarily imply that corruption is economically irrelevant. One plausible explanation lies in the nature of the CPI itself, which is a perception-based index compiled from expert assessments and business surveys. While it is a widely used proxy, it may not accurately capture the operational dimensions of corruption that directly affect economic performance (Zhao et al., 2022).

Furthermore, in some post-Soviet contexts, corruption may be so entrenched in everyday business practices that it becomes an expected cost of operation rather than a deterrent. Firms adapt by incorporating bribery or informal payments into their business models, effectively "internalizing" the cost of corruption and reducing its apparent impact on macroeconomic variables like GDP growth (Cieślik & Goczek, 2021). Additionally, CPI does not differentiate between types of corruption, such as

petty vs. grand corruption or public vs. private sector misconduct, which could obscure its specific growth-related effects.

Another consideration is that corruption's impact may not be linear or direct. It could interact with other factors such as judicial independence, political stability, or fiscal transparency, none of which were explicitly included in this model. Thus, the insignificant coefficient for CPI may reflect omitted variable bias or the need for more fine-grained governance indicators in future models (Seiler, 2020).

5. Summary and Implications

Overall, the findings suggest that Inflation is the most robust and reliable macroeconomic predictor of GDP growth across the post-Soviet region in the 2015–2022 period. The absence of statistically significant effects for FDI and CPI, while surprising in light of economic theory, can be attributed to the region's unique institutional, political, and economic context.

The implications for policymakers are clear. Effective inflation control should remain a top priority for macroeconomic stability. Strengthening the autonomy of central banks, improving fiscal discipline, and diversifying export bases are potential strategies to mitigate inflation's adverse effects. While attracting FDI remains important, its impact will likely remain limited unless accompanied by institutional reforms that enhance transparency, reduce corruption, and ensure rule of law.

Finally, although CPI was statistically insignificant, it remains a critical indicator of governance health. Its ineffectiveness in this study should not be interpreted as justification for complacency but rather as a prompt for more nuanced and granular measurements of corruption in future research.

Future studies could benefit from extending the analysis with dynamic panel models, sector-specific disaggregation of FDI, or alternate corruption measures like the Worldwide Governance Indicators or judicial effectiveness indices. Doing so may offer a clearer picture of how structural and institutional variables interact with macroeconomic growth dynamics in transitional economies.

CONCLUSION

This study has examined the influence of key macroeconomic indicators, namely Foreign Direct Investment (FDI), Inflation, and the Corruption Perception Index (CPI), on GDP growth across ex-Soviet Union countries during the 2015–2022 period, employing both simple and multiple regression analysis. The findings offer nuanced insights into the economic dynamics of these transitional economies and provide an empirical basis for evaluating long-standing theoretical assumptions regarding the determinants of growth.

The analysis concludes that FDI does not have a statistically significant impact on GDP growth over the observed period. This finding leads to the rejection of the first hypothesis (H1), which initially posited a positive influence of FDI on economic growth. The result stands in contrast to conventional economic theories, particularly

those stemming from neoclassical growth models, which argue that FDI serves as an engine of growth through mechanisms such as capital accumulation, employment generation, and technology transfer. One possible explanation for this divergence lies in the specific composition and direction of FDI in ex-Soviet states. Much of the foreign investment in the region has been concentrated in natural resource sectors, particularly oil and gas, which often operate in economic enclaves and contribute little to wider economic development. Additionally, the institutional environment in many of these countries, marked by political instability, regulatory opacity, and corruption, may weaken the positive spillover effects that FDI typically produces in more stable and transparent markets. The findings therefore challenge the universality of the FDI-growth nexus and align with more recent research emphasizing that the developmental impact of FDI is heavily conditioned by local absorptive capacities and governance quality, as highlighted in the work of Adegbite and Ayadi (2010).

In contrast, inflation is found to have a statistically significant and negative effect on GDP growth, thereby supporting the second hypothesis (H2). The data suggest that higher inflation rates, especially in countries such as Azerbaijan, Kazakhstan, and Kyrgyzstan, are associated with slower economic growth. This outcome is consistent with dominant macroeconomic theory, which maintains that inflation erodes purchasing power, increases uncertainty, and discourages long-term investment. In economies where monetary institutions are underdeveloped and central banks lack full autonomy, inflation can easily spiral beyond manageable thresholds, resulting in economic stagnation. In the post-Soviet context, this is further exacerbated by the legacy of centralized economic planning, price rigidities, and over-reliance on commodity exports, which amplify inflationary pressures. Although these results correspond with theoretical expectations, they contrast with the arguments of Umaru and Zubairu (2012), who suggested that under certain conditions, inflation can stimulate productivity and aggregate demand. The contradiction underscores the importance of institutional context and inflation thresholds in determining whether the effects of inflation are growth-enhancing or growth-inhibiting.

The third indicator, the Corruption Perception Index (CPI), does not demonstrate a statistically significant relationship with GDP growth, leading to the rejection of the third hypothesis (H3). While it is widely accepted in both theoretical and empirical literature that corruption undermines economic efficiency and investor confidence, this study finds no observable direct impact of perceived corruption levels on GDP growth in the ex-Soviet region during the study period. This outcome may stem from several factors. First, the CPI is a perception-based measure, which, although widely used, may not accurately capture the actual mechanisms through which corruption affects economic performance. Second, in some post-Soviet economies, corruption has become so institutionalized that its effects may already be internalized by economic agents, thus reducing its measurable impact on growth. Third, it is possible that the relationship between corruption and growth is non-linear or moderated by other institutional variables not included in the model. Therefore, although corruption remains a critical issue in the region, its economic

consequences may not manifest in the form of direct short-term reductions in GDP growth, but rather in more subtle or long-term structural inefficiencies.

Based on these findings, it can be concluded that among the macroeconomic indicators tested, inflation exhibits the most consistent and significant influence on GDP growth in post-Soviet countries between 2015 and 2022. While FDI and corruption perception remain important elements of economic discourse, their direct impact on growth appears to be contingent upon a host of contextual and structural variables that diminish their observable effects in regression models.

In terms of policy implications, governments in the region should prioritize efforts to achieve macroeconomic stability by implementing more effective inflation control mechanisms. This may include enhancing the autonomy of central banks, adopting inflation-targeting monetary policies, and reducing dependence on imported goods that are vulnerable to price shocks. Although FDI was not found to significantly influence growth in this study, creating a more favorable investment climate through regulatory reform and improved political stability may still yield long-term benefits. Similarly, anti-corruption efforts should remain a central focus of governance reform, not merely for the sake of economic efficiency but also for public sector credibility and institutional legitimacy.

Finally, the study suggests avenues for future research. Expanding the model to include additional explanatory variables, such as government spending, exchange rate volatility, interest rates, or labor market indicators, could provide a more holistic understanding of the growth dynamics in post-Soviet economies. Moreover, applying advanced econometric techniques such as fixed-effects or dynamic panel data models may help to account for unobserved heterogeneity and temporal dependencies that are not captured in simple regression frameworks. Extending the time frame or using more granular data at the sectoral level may also uncover deeper patterns that were not visible in this study.

In conclusion, while this research provides important insights into the macroeconomic factors shaping GDP growth in post-Soviet countries, it also highlights the complexity of economic development in transitional contexts, where historical legacies, institutional quality, and external dependencies intertwine to produce outcomes that often defy conventional expectations.

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