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Analysis of the Impact of Economic Growth in South Africa from 2000 to 2022

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Abstract

Purpose: The purpose of this study is to analyze the effect of foreign direct investment (FDI), inflation, average length of schooling, and unemployment rate on economic growth in South Africa from 2000 to 2022.
Methodology: This study uses secondary data sourced from the World Bank from 2000 to 2022. The analysis model used in this study is multiple linear regression using the Partial Adjustment Model (PAM) method.
Results: The analysis shows that there are two influential variables, namely inflation, which has a negative effect, and average length of schooling, which has a positive effect on South Africa's economic growth, while foreign direct investment (FDI) and unemployment rate have no effect on South Africa's economic growth. The F-test results show that FDI, inflation, average length of schooling, and unemployment rate have a combined effect on economic growth; in other words, the model exists.
Applications/Originality/Value: The results of this study are expected to assist key stakeholders, particularly the South African government, in formulating effective and sustainable economic development policies that are adaptive to external shocks, such as global crises and inflationary pressures.

Introduction Section

Sustainable Development Goals (SDGs) are defined as economic growth that meets current needs without compromising the ability of future generations to meet their own needs. (CSHD UNILAG, 2025). The SDGs serve as a comprehensive framework for sustainable development, built upon three fundamental pillars: economic, social, and environmental. This framework consists of 17 interconnected goals, including the eradication of poverty (SDG 1), the provision of quality education (SDG 4), the promotion of inclusive economic growth (SDG 8), and the advancement of industrialization and infrastructure (SDG 9). The interdependence among these goals implies that progress in one area often relies on advancements in others. For instance, achieving sustained economic growth (SDG 8) depends on reducing poverty (SDG 1), expanding access to education (SDG 4), and narrowing inequality (SDG 10). Similarly, industrial development (SDG 9) requires access to reliable energy sources (SDG 7) and the preservation of the environment (SDGs 13–15) (United Nations, 2015).

Development is an instrument for addressing income inequality, unemployment, and limited access to basic services (Todaro & Smith, 2011). South Africa, most of the wealth is controlled by certain groups, while the majority of the population still lives in difficult conditions (OECD, 2025). This inequality not only creates social disparities, but also hinders the equitable distribution of development outcomes. Over the past decade, South Africa's economic growth has been relatively slow and stagnant, with per capita gross domestic product (GDP) growth continuing to weaken as economic growth has not kept pace with population growth. Consequently, poverty has increased and public welfare has declined (World Bank, 2022). This situation is exacerbated by high unemployment, especially among young people, and extreme income inequality, which are major obstacles to high and sustainable economic growth (Statistics South Africa, 2024). Therefore, a development strategy is needed that emphasizes equity through equitable community investment and strengthening government institutions so that economic goals can go hand in hand with the achievement of social justice (United Nations Development Programme, 2022).

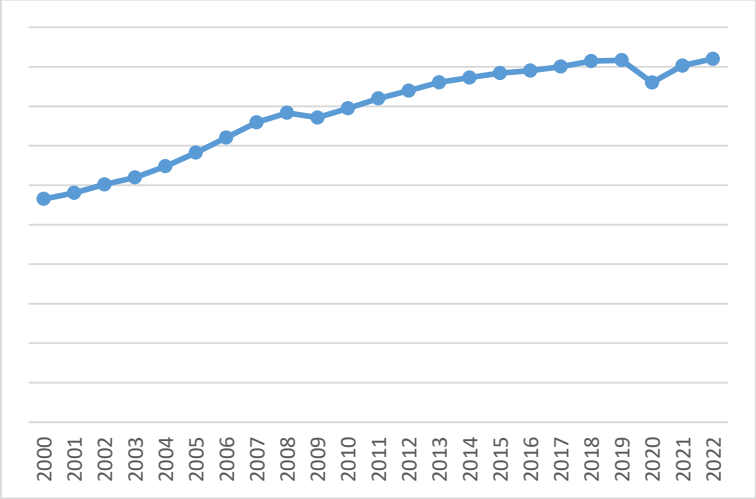

Figure 1. South Africa's Economic Growth from 2000 to 2022.

Based on Figure 1, it appears that South Africa's economic growth in the early 2000s was relatively moderate before accelerating, supported by exports, high commodity prices, and investment inflows (World Bank, 2022). However, the global financial crisis then triggered a sharp slowdown and caused a contraction in the economy (Statistics South Africa, 2022). After that, despite a brief recovery, the growth rate did not return to high levels but entered a phase of stagnation influenced by structural problems such as the energy crisis, political uncertainty, and socio-economic inequality (Macrotrends, 2023; World Bank, 2022).The global pandemic has further exacerbated this situation by causing a significant contraction (Statistics South Africa, 2022). Despite a post-pandemic recovery, growth trends have weakened again. Overall, South Africa's economic growth chart reflects a cycle of expansion and contraction influenced by global and domestic factors, highlighting long-term structural challenges that hinder stable growth (Macrotrends, 2023; World Bank, 2022).

Literature Review and Hypothesis Model

Definition Devolopment Economic

Development is a multidimensional process that encompasses fundamental changes in social structures, community attitudes, and national institutions, as well as accelerated economic growth, addressing income inequality, and poverty alleviation. There are three core values of development: (1) sustenance, (2) self-esteem, and (3) freedom (Todaro & Smith, 2011).

Economic development has three main objectives: (1) Improving the availability and distribution of basic necessities; (2) improving living standards through income, education, and attention to self-esteem; and (3) expanding individual economic and social choices. Thus, development is not just about economic growth, but also about improving overall quality of life. Development is not just about economic growth, but also about improving the quality of life that reflects the overall well-being of humanity (Todaro & Smith, 2011).

Economic Growth vs. Economic Development

Word Economic growth and economic development are two interrelated but distinct concepts. Economic growth focuses on increasing a country's economic output, while economic development focuses on improving the quality of life of the people through increased income, employment opportunities, and quality of life. Economic development reflects structural transformations in society, including improvements in human capital, institutional efficiency, and social inclusiveness. Thus, while economic development may show progress in macroeconomic figures, it places greater emphasis on the real impact on people's well-being (Todaro & Smith, 2011).

Drăgoi (2020) distinguishing clearly between economic growth and development, stating that growth is quantitative in nature and development is qualitative, covering social, educational, and health aspects. Sirous (2024) also highlighted that the success of development is not only measured by gross domestic product (GDP) figures, but can also be seen in economic benefits and increased community capacity. Thus, although economic development may show progress in

macroeconomic figures, economic development places greater emphasis on the real impact on community welfare and sustainable social transformation.

Factors Affecting Economic Growth

There are three important factors in the economic growth of every country, namely: capital accumulation, economic growth, and technological advancement. Capital accumulation occurs when a portion of income is saved and reinvested with the aim of increasing output and income in the future. Population growth will expand the domestic market and the workforce, which will increase labor and expand the productive labor market. Technological advancement allows us to achieve greater results with the same input (Todaro & Smith, 2011). In addition to these three factors, political stability, institutional quality, and the human development index (HDI) are also key determinants of long-term economic growth, particularly in developing countries. Good institutional quality promotes bureaucratic efficiency, transparency, and legal certainty, which in turn increases investor confidence and the effectiveness of public policy. A high HDI indicates an improvement in the quality of life and productive capacity of the community, which is an important foundation for a sustainable economy (Rosiyadi Putri et al., 2025).

In the context of developing countries, particularly in the Sub-Saharan African region, foreign direct investment (FDI) is often regarded as a crucial instrument for promoting economic development. However, the impact of FDI on economic growth is not always consistent and largely depends on domestic conditions.Muyambiri (2025) indicates that in South Africa, FDI provides a short-term boost to growth, but its long-term contribution remains limited unless accompanied by structural reforms and enhanced local production capacity. Sichoongwe (2025) using the ARDL approach, finds that the synergy between FDI and industrialization has a significant effect on economic growth in Sub-Saharan countries. Meanwhile, Kgomo & Zhanje (2024) emphasize that the effectiveness of FDI is strongly influenced by institutional quality, the efficiency of resource distribution, and absorptive capacity such as education and basic infrastructure. These findings underscore that FDI cannot serve as a standalone engine of growth, rather it must be supported by domestic policies that strengthen competitiveness and local economic productivity. The findings of Asafo Agyei et al. (Asafo-Agyei & Kodongo, 2022) in the Sub-Saharan African region also emphasize the importance of absorptive capacity in the form of human capital and basic infrastructure for foreign direct investment (FDI) to effectively drive economic growth.

H_1 : Foreign direct investment (FDI) has a positive and significant effect on economic growth in South Africa.

Inflation is a macroeconomic indicator that reflects the rise in prices of goods and services in a country. High inflation can lead to a decline in people's purchasing power and hamper investment, while controlled inflation can boost economic growth through increased consumption and production. Research by Nur et al. (2022) hows that inflation has a negative and significant effect on economic growth, because rising inflation reduces people's purchasing power and hinders investment and output. Garnero (2020) Study shows that countries with well-coordinated wage and price policies promote more controlled inflation and more stable economic growth.

South Africa, inflation fluctuations are often linked to commodity price changes and monetary policies that are responsive to external pressures. The study explains that cooperation between government policies on spending and money management is crucial to maintaining economic stability, especially when facing uncertain global conditions. Furthermore, the study by Farouq & Sulong (2025) revealed that inflation in African countries, including South Africa, is closely linked to financial efficiency and resource distribution. They found that high inflation can disrupt capital allocation mechanisms and exacerbate economic inequality, especially in countries with institutional weaknesses. Therefore, price stability is not only a matter of controlling inflation rates, but also reflects the effectiveness of monetary policy and the quality of economic governance as a whole.

H_2 : Inflation has a negative and significant effect on economic growth in South Africa.

Research by Hanushek & Woessmann (2021) explains that education plays an important role in improving long-term economic development. Education helps improve the skills and productivity of the workforce, thereby increasing economic output. They show that the quality of education, as reflected in learning ability and length of schooling, greatly influences differences in economic growth between countries. Quality education equips the workforce with the skills necessary to adapt to technological advancements and evolving market demands. Therefore, investment in education is an important step in building a sustaivnable economy and has a broad impact on the economic welfare of society. The study by Spaull (2021) found a causal relationship between education and economic growth in South Africa, emphasizing that improvements in the quality of education have a significant impact on economic output.This is in line with the research by Kardina & Magriasti (2023), which confirms that quality education plays a crucial role in shaping the economic future of a country. Education not only improves technical skills, but also stimulates innovation, critical thinking, and adaptation to technology. In the long term, education that is integrated with development strategies can develop a competitive workforce and promote fair and sustainable economic growth.

H_3 : Average years of schooling has a positive and significant effect on economic growth in South Africa.

Megondaru & Hasmarini (2022) found that unemployment rates have a positive but insignificant effect on economic growth, indicating that the relationship is not statistically consistent and may be influenced by additional factors such as investment and fiscal policy. These findings suggest that, although unemployment is theoretically relevant, it is not always a primary determinant of economic growth particularly in the short term, where the influence of the informal sector and policy interventions may mitigate its impact.

In the context of developing countries such as South Africa, unemployment is structural and chronic, especially among young people. This shows that sustainable economic growth requires an integrated strategy between employment, education, and investment policies. Without proper handling, unemployment can be a major obstacle to achieving national economic development targets. The Growth Lab report from Harvard CID (Center for International Development) compiled by Shah et al. provides an in-depth analysis of high unemployment in South Africa. The report emphasizes that low labor absorption is not merely a cyclical phenomenon, but rather a structural one. South Africa's GDP growth is largely supported by capital-intensive sectors such as mining and finance, which, despite contributing significantly to national output, provide few new jobs. Furthermore, low firm entry rates and entrepreneurial dynamics reduce job creation opportunities, while the mismatch between labor skills and industry needs further exacerbates unemployment. These conditions indicate that although South Africa has recorded economic growth, job creation has not kept pace, reinforcing the phenomenon of jobless growth. Therefore, this analysis provides an important context that the unemployment variable in studies of South Africa's economic growth not only reflects short-term symptoms but also illustrates deep structural problems that require specific policy interventions (Shah, A., Hausmann, R., & Patel, 2022).

H_4 : Unemployment rate has a negative and significant effect on economic growth in South Africa.

Economic Growth vs. Equity

Economic growth and economic equality are two concepts that are interrelated but distinct. Todaro emphasizes that although growth is important as an indicator of economic progress, it does not necessarily guarantee fair and comprehensive development. Income equality is key to ensuring that economic development benefits all segments of society, not just certain groups. Todaro asserts that social dimensions such as poverty reduction, increased employment opportunities, and equitable income distribution must be integral parts of economic development strategies (Todaro & Smith, 2011). This view is similar to that of Ostry et al. (2018), who argue that economic growth without equity can actually increase inequality and hinder sustainable development. They emphasize that economic reforms must consider their impact on income distribution so as not to create social exclusion.

Income equality is very important in order to prevent inequality. Inequality is a condition in which there is a significant gap in the distribution of income, wealth, and opportunities between groups in society. High levels of inequality can have a negative impact on economic and social development, such as increased poverty, social inequality, and social conflict. Inequality can also affect political and economic stability, as well as reduce opportunities for disadvantaged communities to improve their standard of living (Todaro & Smith, 2011).

What are the disadvantages of inequality?

Reducing inequality is crucial in economic development because it can improve people's welfare, reduce poverty, and bring about social and political stability. High levels of inequality can have a negative impact on economic development and social progress, such as increasing poverty, social inequality, and social conflict. Therefore, reducing inequality is an important goal in economic progress to achieve sustainable development and improve people's quality of life. Better income distribution and employment opportunities can increase productivity and the community's contribution to economic growth, so reducing inequality can be a driver for a sustainable economy (Todaro & Smith, 2011).

Economic inequality in South Africa is a structural legacy of apartheid that still lingers in the distribution of assets, education, and employment opportunities. Kgomo & Zhanje (2024) shows that income inequality between provinces in South Africa is closely correlated with poverty levels and economic stagnation. Meanwhile,Francis & Webster (2019) highlighting that although South Africa has a progressive constitution, inequality remains high due to weak implementation of redistributive policies and high unemployment.

Research Method

This study employs the Partial Adjustment Model (PAM) to analyze the relationship between foreign direct investment (FDI), inflation, average years of schooling, and unemployment rate on South Africa's economic growth from 2000 to 2022. PAM is selected over other time-series models such as Ordinary Least Squares (OLS), Autoregressive Distributed Lag (ARDL), Error Correction Model (ECM), or Vector Autoregression (VAR) due to its ability to capture gradual adjustment behavior in macroeconomic variables.

Gujarati (2003) explains that PAM is appropriate when the dependent variable does not instantly respond to changes in the independent variables, but rather adjusts progressively toward its long-run equilibrium. This is particularly relevant for South Africa's economic structure, which is characterized by delayed policy transmission, structural rigidities, and institutional inertia. Unlike OLS, which assumes immediate and full adjustment, PAM allows for the estimation of both short-term and long-term effects through the adjustment coefficient (λ), making it suitable for economies undergoing transitional dynamics.

Furthermore, while ARDL and ECM are commonly used for cointegrated time-series data, PAM is more parsimonious and interpretable when the focus is on behavioral adjustment rather than statistical integration. VAR models, although powerful, require large datasets and impose symmetry in relationships, which may not reflect the asymmetric nature of macroeconomic responses in developing countries. Therefore, PAM offers a theoretically robust and empirically flexible framework for analyzing how South Africa's economic growth responds to changes in macroeconomic indicators over time.

The PAM model is formulated as follows :

$$Y_t - Y_{t-1} = \alpha(Y* + Y_{t-1}) + \beta X_t + \varepsilon_t \quad (1)$$

The parameterization of the short-term equation is as follows :

$$logGDP_t = \alpha_0 + \alpha_1 logFDI_t + \alpha_2 INF_t + \alpha_3 EDUC_t + \alpha_4 UNEMP_t + \lambda logGDP_{t-1} + u_t \quad (2)$$

To determine the long-term coefficient in the model, the short-term regression coefficient is divided by the adjustment coefficient (1-δ), excluding variables Y_{t-1}, so that to obtain the long-term regression equation, the following formula is used (Gujarati, 2003):

$$\beta = \frac{\alpha}{1-\delta} \quad (3)$$

The long term regression equation is as follows :

$$logGDP_t = \beta_0 + \beta_1 logFDI + \beta_2 INF_t + \beta_3 EDUC_t + \beta_4 UNEMP_t + \varepsilon_t \quad (4)$$

Description:

GDP	: Economic Growth (USD)
FDI	: Foregein Direct Invesment (USD)
INF	: Inflation (%)
EDUC	: Average Length of Schooling (Years)
UNEMP	: Unemployment Rate (%)
ln	: Natural logarithm operation
β_0	: Long-term constant
$\beta_1 \dots \beta_4$	: Long-term regression coefficient
ε	: Long-term error term
t	: year to t
λ	: $(1-\delta)$

δ : adjustment coefficient
α_0 : $\delta\beta_0$; short-term constant
$\alpha_1 \cdots \alpha_4$: $\delta\beta_1 \cdots \delta\beta_4$; short-term regression coefficient
υ : $\delta\varepsilon$; short-term error term

Results and Discussion

Data Analysis Results

Koefisien $logGDP_{t-1}$ sebesar 0.6747, with a p-value of 0.0000 and a significance level below the threshold of 0.05. These results confirm the adjustment coefficient $0 < \delta < 1$ and statistically significant. These findings reveal that the proposed econometric model complies with PAM principles, effectively capturing the theoretical long-term relationship between the dependent and independent variables considered in the study. According to the classical assumption test guidelines outlined by Gujarati (Gujarati, 2003), "regression analysis must meet certain criteria to ensure reliable estimates". This includes ensuring the normality of residuals (evaluated using the Jarque-Bera test), the absence of multicollinearity, homoscedasticity (verified with the White test), and the absence of autocorrelation among residuals (Breusch Godfrey).Model suitability assessment aims to evaluate the suitability of statistical models in describing observed data. This evaluation involves statistical tests such as t-tests, F-tests, and interpretation of the coefficient of determination (R^2), to ensure that the model is able to accurately capture the relationships between variables.

The multicollinearity test (VIF) is used to detect multicollinearity. The heteroscedasticity test is performed to determine whether the residual variance is consistent across all observations. The probability value obtained is 0.2549, exceeding the threshold of 0.10, which indicates that the model does not experience heteroscedasticity.Residual normality testing was conducted to identify differences between predicted and actual data values. Residuals are considered to follow a normal distribution if the probability value exceeds ($\alpha = 0.10$). Residual normality testing revealed that the Jarque Bera (JB) statistic had a JB probability value of 0.7740, exceeding the threshold of 0.10, which indicates that the residuals were normally distributed. The autocorrelation test examines whether the residuals reveal serial correlation over time or observation intervals. Probability value of 0.1028, which exceeds the threshold of 0.10, indicates that there is no autocorrelation problem in the model.Heteroscedasticity testing was conducted to determine whether the residual variance was consistent across all observations. The probability value obtained was 0.2549, exceeding the threshold of 0.10, which indicates that the model did not experience heteroscedasticity. The Linearity Test (Ramsey Test) is a test used to detect whether a regression model has specification errors, including incorrect functional forms (non-linearity). Probability value of 0.0509 is below the significance level of 0.10, indicating that the estimated model is inaccurate or non-linear.

The estimated long-term model is calculated by combining constants and coefficients derived from short-term regression analysis.

$$logGDP_t = \underset{}{18.3395} + \underset{(0.5157)}{0.0635}\, logFDI_t - \underset{(0.0659)^{***}}{0.0753} INF_t + \underset{(0.0534)^{***}}{0.3950} EDUC + \underset{(0.15440)}{0.0744} UNEMP_t \quad (5)$$

The adjustment time is obtained as follows :

$$AT = \frac{1}{\delta} = \frac{1}{0.325253} = 3.074 \text{ years} \quad (6)$$

Table 1. Long-term regression calculations

Variable	Parameters	Calculation	Results
	$\delta = 1-\lambda$	1 – 0.674747	0.325253
Constant	$\beta_0 = \frac{\alpha_0}{\delta}$	5.964995/0.325253	18.3395541
FDI	$\beta_1 = \frac{\alpha_1}{\delta}$	0.020646/0.325253	0.0635
Inflation	$\beta_2 = \frac{\alpha_2}{\delta}$	- 0.024487/0.325253	- 0.0753

EDUC	$\beta_3 = \frac{\alpha_3}{\delta}$	0.128480/0.325253	0.3950
UNEMP	$\beta_4 = \frac{\alpha_4}{\delta}$	0.024188/0.325253	0.0744

Source: processed secondary data

Statistical analysis conducted using the t-test method reveals that inflation has a significant effect on economic growth with a p-value of 0.0659, which is lower than the significance threshold of 0.10. Furthermore, average length of schooling has a significant impact on economic growth, with a p-value of 0.0534, which is well below the significance level of 0.10. Conversely, the FDI variable, with a p-value of 0.5157, which exceeds the threshold of 0.10, and the unemployment rate, with a p-value of 0.15440, both exceed the significance level of 0.10, indicating that neither has an effect on economic growth.

Table 2. *t*-test results

Variable	short-term coefficient	long-term coefficient	Sig.t	short-term description	long-term description
FDI	0.0206	0.0635	α= 0.10	no effect	no effect
Inflation	- 0.0245	- 0.0753	α= 0.10	significant negative effect	significant negative effect
EDUC	0.1285	0.3950	α= 0.10	significant positive effect	significant positive effect
UNEMP	0.0242	0.0744	α= 0.10	no effect	no effect

The F-test results produced a value of 0.0000, which is lower than the significance level of α of 0.05. These findings indicate that FDI, inflation, average length of schooling, and unemployment rate all have a significant effect on economic growth; in other words, the model exists.

The coefficient of determination (R^2) of 0.9158 indicates that changes in FDI, inflation, average length of schooling, and unemployment rate explain 91.58% of the fluctuations or ups and downs in economic growth. The remaining 8.42% is caused by other independent variables outside the model.

Table 3. PAM Estimation Results

$$\widehat{logGDP_t} = 0.0206 + 0.0206\ logFDI_t - 0.0245\ INF_t + 0.1285\ EDUC_t$$
$$(0.5157) \quad (0.0659)^{***} \quad (0.0534)^{***}$$
$$+ 0.0242\ UNEMP_t + 0.6747\ logGDP_{t-1}$$
$$(0.1540) \quad (0.0000)^{*}$$

$R^2 = 0.9158$; *DW-Stat.* =1.6679*; F-Stat* =36.9992*; Prob. F-Stat. = 0.0000*

Diagnostic Test

1. Multicollinearity (VIF)
   $logFDI_t = 1.5484$; $INF_t = 1.1229$; $EDUC_t = 7.2073$;
   $UNEMP_t = 4.3345$; $logGDP_{t-1} = 2.9622$
2. Residual Normality (Jarque Bera)
   JB(2) = 0.5124; Prob. JB(2) = 0.7740
3. Autocorrelation (Breusch Godfrey)
   $\chi^2(3) = 6.1892$; $Prob.\chi^2(3) = 0.1028$
4. Heteroscedasticity (White)
   $\chi^2(19) = 22.8073$; $Prob.\chi^2(19) = 0.2549$
5. Linearity (Ramsey Reset)
   $F(1.16) = 4.4527$; $Prob.\chi^2(1.16) = 0.0509$

Source: processed secondary data
Explanation:
* : level (Sig.) at α = 1%
** : level (Sig.) at α = 5%
*** : level (Sig.) at α = 10%
The numbers in parentheses indicate the probability of FDI, inflation, EDUC, UNEMP and adjustment coefficients.

Discussion

Based on the estimation results, inflation and average length of schooling have a significant effect on economic growth, while FDI and unemployment rate have no effect, as the probability value exceeds 0.10. Thus, the interpretation of variables such as FDI, inflation, average length of schooling, and unemployment rate in the context of the Partial Adjustment Model (PAM) can be further elaborated as follows:

The Effect of Inflation on Economic Growth

The short-term inflation regression coefficient is -0.0245, while the long-term coefficient is -0.0753. The t-value of 0.0659 is below the t-table value with α 0.1, indicating an effect on economic growth in both the short and long term. The results of this study are consistent with the previously formulated hypothesis, namely that inflation has a significant negative effect on economic growth. Theoretically, high inflation can reduce consumers' purchasing power, create price uncertainty, and hinder long-term investment. The study by Moodley et al. (2024) revealed that inflation volatility in South Africa after the COVID-19 pandemic was strongly influenced by external commodity price shocks and domestic energy supply disruptions. Their ARDL-based analysis showed that inflation had a persistent negative impact on private investment and household consumption, particularly among low-income groups. Likewise, Bandura & Leshoro (2022) emphasized that inflation in Sub-Saharan Africa has a long-term negative relationship with financial development, which in turn limits the efficiency of financial intermediation and access to productive financing.

These findings indicate that inflation in South Africa is not merely a short-term macroeconomic fluctuation, but rather a structural constraint reflecting deeper challenges in governance and policy coordination. The significant negative coefficient found in this study reinforces the argument that price stability is essential not only for macroeconomic balance but also for inclusive and sustainable growth.

The effect of average length of schooling on economic growth

The average coefficient for short-term schooling is 0.1285, while the long-term coefficient is 0.3950. The t-value of 0.0534 is below the t-table value with α 0.1, which indicates an effect on economic growth in both the short and long term. Higher education improves the quality of human resources, strengthens labor productivity, and encourages innovation and efficiency in various economic sectors. The study by Spaull (2021) shows that improving access to and the quality of primary and secondary education in South Africa directly contributes to increased economic output and the reduction of regional disparities.

Odhiambo (2021) found that education has a strong long-term effect on economic growth, primarily through enhanced efficiency in the real sector and the strengthening of domestic economic structures. These findings are reinforced by World Bank report, which states that transforming the basic education sector is key to promoting inclusive growth in South Africa. The report highlights that despite substantial education spending, learning outcomes remain low relative to the country's development level. Educational reforms that emphasize teaching quality, relevant curricula, and equitable access are urgently needed to strengthen the long-term foundations of the economy. Investment in education, particularly in increasing the average years of schooling, is a development strategy that generates dual benefits both socially and economically, and serves as an important foundation for sustainable growth (World Bank, 2025).

The Effect of Foreign Direct Investment (FDI) on Economic Growth

The short-term regression coefficient for Foreign Direct Investment (FDI) is 0.0206 and the long-term coefficient is 0.0635. The t-value is 0.5157, which is less than the t-table value with α 0.10, indicating that FDI has no effect on South Africa's economic growth, either in the short or long term. Although FDI is often regarded as a key driver of economic growth, its effectiveness in South Africa remains limited. FDI directed toward capital-intensive sectors such as mining and finance does not always significantly impact GDP growth, primarily due to low absorption of local labor and limited technology transfer. Many foreign companies retain their own management systems and technologies without adequate integration into the domestic economic structure, resulting in FDI contributions that tend to be exclusive and fail to diffuse into other productive sectors. Study by Kumo (2020) shows that although there is a long-term relationship between FDI and economic growth in South Africa, its impact largely depends on institutional quality and the local economy's capacity to absorb the benefits of foreign investment. These findings are reinforced by Abdi et al. (2024), who emphasize that institutional strength and trade openness are key determinants of FDI effectiveness in Africa. When governance is weak and administrative capacity is limited, the potential for FDI to promote sustainable economic growth becomes severely constrained.

The Effect of Unemployment Rates on Economic Growth

The short-term unemployment rate coefficient is 0.0242 and the long-term unemployment rate coefficient is 0.074. The t-value of 0.15440 exceeds the t-table value with α 0.10, indicating that the unemployment rate does not affect economic growth, either in the short or long term. The unemployment rate in South Africa does not always have a

significant effect on economic growth, especially in the short term. This can be explained by the country's economic structure, which is highly dependent on formal and capital-intensive sectors, such as mining and finance, which do not absorb large amounts of labor (Ngonidzashe Chiranga et al., 2025). As a result, despite high unemployment rates, these sectors were still able to drive GDP growth without significant contributions from the unemployed workforce. In addition, the high proportion of the informal sector and skills gaps meant that many unemployed people did not have access to productive jobs, so their existence did not directly affect economic output (Khuluvhe et al., 2022).

Conclusion and Recommendation

The results of the study indicate that the econometric model used meets the principles of the Partial Adjustment Model (PAM). Diagnostic tests show no problems with normality, heteroscedasticity, or autocorrelation, although the linearity test indicates inaccuracy in the model's form. Partially, inflation and average years of schooling have a significant effect on economic growth, while FDI and unemployment do not show a significant effect. However, simultaneously, all variables remain significant with an F-test value of 0.0000. The R^2 value of 0.9158 indicates that 91.58% of the variation in economic growth can be explained by the variables in the model. The remaining 8.42% is caused by other independent variables outside the model.

Based on the research findings, foreign direct investment (FDI) does not have a significant impact on South Africa's economic growth, either in the short or long term. This suggests that reliance on foreign investment alone is insufficient to drive sustainable economic development without the support of strong domestic factors. Therefore, the government should shift its policy focus from external dependence toward strengthening internal capacity, such as improving the quality of education, developing productive infrastructure, and creating employment opportunities through labor-intensive sectors. Macroeconomic stability must also be maintained through effective monetary policy, inflation control, and institutional reforms that enhance governance and legal certainty.

This study has several limitations. First, the scope of variables analyzed is limited to four macroeconomic indicators FDI, inflation, average years of schooling, and unemployment rate thus excluding other potentially influential factors such as infrastructure quality, technological innovation, and trade policy. Second, the methodological approach employed, namely the Partial Adjustment Model (PAM) based on annual time-series data, may not fully capture structural dynamics or simultaneous interactions among variables. Third, the use of data only up to 2022 may limit the representation of post-pandemic economic changes and recent policy developments. Future research is recommended to incorporate a broader set of variables, such as infrastructure development indices, trade openness, and institutional quality, to gain a more comprehensive understanding. The use of more dynamic analytical methods, such as panel data models or vector error correction models (VECM), could yield deeper and more robust insights. Further studies may also examine the simultaneous effects of FDI, inflation, education, and unemployment on economic growth, thereby providing a more holistic foundation for formulating effective economic development policies in South Africa.

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