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Inflation Threshold and Economic Growth of Ethiopia

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Abstract

This study examines the causality between inflation and economic growth in Ethiopia using threshold regression analysis on time series data from 1982 to 2020. The analysis identifies an inflation threshold of 16.46%, below which inflation has no significant impact on GDP. However, once inflation exceeds the threshold, GDP experiences a decline, indicating a negative relationship between the two variables. The model reveals the existence of two distinct regimes - one characterized by low inflation and high GDP, and the other characterized by high inflation and lower but still positive GDP. Various factors such as trade, foreign direct investment (FDI), unemployment, exchange rate, and government spending affect GDP differently depending on whether they operate below or above the inflation threshold. The findings of this study emphasize that inflation levels exceeding 16.46% hamper economic growth. Therefore, maintaining inflation lower or equal to 16.4.6% is crucial for fostering sound decision-making and instilling confidence. Therefore, creating a strong monitoring system to assess policy effectiveness, enabling timely adjustments, and addressing key economic indicators will foster sustained, inclusive growth; tackling challenges should be carefully done. Therefore, monetary policy ought to keep inflation below the estimated threshold in order to promote sustainable economic growth.

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INTRODUCTION

Regarding the relationship between inflation and economic growth, several theories and perspectives exist. One prevailing theory posits that moderate inflation can foster economic growth up to a certain point, beyond which it can have adverse effects. The Threshold Effect Theory, for instance, suggests that there is a specific level of inflation where economic -growth starts to decline. Below this threshold, moderate inflation can stimulate economic activity by reducing real wages, encouraging investment, and facilitating adjustments in relative prices. However, once inflation surpasses a certain level, it can undermine confidence, distort price signals, and impede efficient resource allocation, ultimately

impeding economic growth. This investigation explores the concept of financial repression and its impact on economic growth, shedding light on the threshold effect and various economic policies, (Roubini, & Sala-i-Martin, 1992).

Conversely, Neo-Keynesian economists argue that there may be a short-term trade-off between inflation and unemployment, known as the Phillips Curve. However, in the long run, they posit that this trade-off may vanish, and higher inflation rates could hinder economic growth by disrupting price stability, reducing real incomes, and distorting investment decisions. This perspective offers a comprehensive overview of advanced macroeconomic theories, including the Neo-Keynesian viewpoint on inflation and its implications for economic growth. It explores how inflation can impact long-term growth prospects and the factors that determine the existence of an inflation threshold (Blanchard & Fischer, 1989).

In the field of econometrics, threshold regression models are utilized to capture nonlinear relationships between variables. These models are particularly useful when the relationship between variables changes at specific thresholds or breakpoints. An example of such a model is the Threshold Autoregressive (TAR) Model, which takes into account the value of a threshold variable to determine the relationship between variables. TAR models are commonly employed in time series analysis to identify nonlinearities in the data. On the other hand, Smooth Transition Regression (STR) Models are an extension of TAR models that allow for smoother transitions between regimes, rather than abrupt changes at the threshold. These models offer greater flexibility in capturing nonlinearities and find applications in various fields. Additionally, STR models can be adapted to panel data settings, as demonstrated by the work of Gonzalez et al. (2005).

Another important class of models is Threshold Cointegration Models, which expand upon traditional cointegration analysis by incorporating nonlinear adjustment processes between integrated variables. These models are particularly useful for capturing long-run relationships that may exhibit regime-dependent behavior. Hansen and Seo (2002) propose a testing procedure for two-regime threshold cointegration in vector error-correction models, discussing the theoretical foundation of threshold cointegration and providing empirical illustrations using macroeconomic data. Threshold regression models in econometrics are used to capture nonlinear relationships between variables, where the relationship may change at certain thresholds or breakpoints. For instance, Threshold Autoregressive (TAR) Models are used when the relationship between variables changes depending on the value of a threshold variable. These models are commonly applied in time series analysis to capture nonlinearities in the data (Tsay, 1989).

The other is Smooth Transition Regression (STR) Models generalize TAR models by allowing for smoother transitions between regimes rather than abrupt changes at the threshold. These models are flexible in capturing nonlinearities and have applications in various fields. It extends STR models to panel data settings (Gonzalez et al., 2005).

Threshold Cointegration Models extend traditional cointegration analysis by allowing for nonlinear adjustment processes between integrated variables. They are useful for capturing long-run relationships that may exhibit regime-dependent behavior. This proposes a testing procedure for two-regime threshold cointegration in vector error-

correction models. It discusses the theoretical foundation of threshold cointegration and provides empirical illustrations using macroeconomic data (Hansen & Seo, 2002).

Inflation occurs when prices continuously rise across the economy. There are three main types of inflation. Demand-pull inflation happens when demand outpaces supply. When people want to purchase more goods and services than the economy can produce, prices are driven up (Kahssay, 2017; Todorova, 2012). Demand-pull inflation can be caused by increasing government spending, transfer payments, or the money supply via lower interest rates or security purchases. It can be reduced through contractionary fiscal policies like higher taxes or lower spending and transfers. A contractionary monetary policy like higher interest rates, reserve requirements, or security sales also curbs demand.

Cost-push inflation results when supply constraints drive up production costs and prices. This often occurs due to higher commodity prices, labor costs, or import prices. Structural inflation arises from economic bottlenecks that restrict supply. For example, depleted energy resources can inflate prices. High inflation harms economies in several ways. It undermines investor and business confidence in future monetary policy. This hampers growth-driving factors like investment and productivity. Frequent price changes complicate planning and forecasting. Inflation distorts price signals, leading to poor allocation of resources. A high inflation rate indicates macroeconomic instability and policy uncertainty, which deters investment (Schwarzer, 2018). Therefore, keeping inflation low and stable fosters growth by supporting sound decision-making and confidence in the future.

For the reason that inflation was not a problem in pre-World War II, economic theories did not focus on the real effects of inflation.

Researchers often disagree on the determinants of inflation. Some view it as cyclical, rising in booms and falling in recessions as demand fluctuates (Kahssay, 2017). When resources are plentiful, inflation stays low. But as employment rises and factors become scarce, firms bid up prices, fueling inflation. Others see inflation as a monetary phenomenon—when money supply exceeds demand, inflation results. Both cyclical factors like resource constraints and monetary factors like money growth are seen as potential drivers. The determinants and effects of inflation remain debated, with no consensus among competing theories (Khan, 2015; Semeneh, 2015). Cost-push inflation occurs when supply constraints, like higher input prices, raise production costs and push up prices. Key drivers include rising raw materials, labor, and other input costs, as well as higher indirect taxes.

A vicious cycle of rising wages and prices can also drive cost-push inflation. As inflation expectations rise, workers demand higher pay, fueling more inflation. Currency devaluation that increases import prices can contribute as well. Structural inflation occurs when producers struggle to adapt supply to changes in demand or production technologies. This inability to adjust supply to new economic realities fuels price hikes. (Kahssay, 2017; Todorova, 2012). To reduce cost-push inflation, policies aim to increase aggregate supply by lowering input costs. Examples include limiting wage growth, utility costs, import prices through exchange rate appreciation, and other production expenses. Easing supply-side constraints helps temper inflation resulting from cost pressures.

According to the beliefs of monetarists, inflation is caused by the expansion of the money supply exceeding the growth of real output. However, inflation can also occur due to an increase in aggregate demand or a decrease in aggregate supply, as stated by Kahssay (2017).

The balance of payment, inflation, unemployment, and various macroeconomic variables such as interest rate, remittance, foreign direct investment, money supply, tourism, and government operations are all influenced by the exchange rate. When the exchange rate appreciates, it directly impacts the consumer price index by lowering the prices of imported goods and services. However, this can also lead to inflation in certain countries, which in turn affects economic growth (Priyatharsiny, 2017).

The impact of government expenditures on inflation and growth has been a topic of discussion among scholars. Some authors have confirmed the direct relationship between public expenditures and inflation, stating that excessive spending can worsen excess demand, crowd out investment, and increase overall prices (Jeffrey, 2012). Sidrauski's super-neutrality of money on capital accumulation is another perspective (Khan, 2015; Tenaw & Demeke, 2020).

Smuggling plays a significant role in the irregular pricing of imports and exports (Buehn & Farzanegan, 2012). There are several reasons for shadow economies. These include the Tariff burden, Unemployment, and Rule of Law. Moreover, corruption and shadow economy are considered twins which means they are either complements or substitutes and in any case, they lead to higher inflation (Buehn & Farzanegan, 2012; Wajid et al., 2018). Illegal foreign trade is also associated with the evasion of tariffs or other trade and exchange restrictions. This implies that a higher inflation rate may lead to a black market economy. Generally, smuggling leads to higher inflation and affects growth in different ways.

For the last couple of years, the Ethiopian economy has grown by more than ten percent per year, which is rare in Africa. Contrary to this fact, the price is increasing at a fast rate. Based on these facts people have been confused about the economic growth in Ethiopia. In Ethiopia, the major factors affecting growth are investment, human capital formation, foreign aid, and rainfall-based agriculture(Fikadu, Mitiku, and Regasa, 2020). Besides, peace instability, unemployment rate, inflation, population growth, terms of trade, exchange rate, debt financing, and government expenditure, fiscal and monetary policy are the other factors that affect economic growth (Adeyemi et al., 2009).

Ethiopia's food inflation has grown considerably in the last five years. The secrete behind the country's double-digit growth rate puzzled scholars that require investigating the root cases with caution (Haji & Gelaw, 2012). Coming to the relationship between inflation and growth, the two macroeconomic variables are viewed differently by different academics. Some believe there is no strong association between these two factors, while others argue there is a positive relationship. Still, others believe there is a negative relationship between these two variables (Khan, 2015; Tenaw & Demeke, 2020). The debate motivates the researchers to navigate the clear relationship between inflation and economic growth using the ideas of the inflation threshold approach.

The amount of resources available for domestic investment can be reduced because of high inflation. Higher inflation decreases both the amount of investment and the effectiveness with which productive resources are used. The

advantages of reducing inflation to its optimal level are significant to economic growth. The main subject of macroeconomics policy is the pace of economic growth and inflation. The economic growth and inflation relationship is debatable. According to several authors, there is no agreement, on how economic growth and inflation relate to one another. At this time, inflation levels that shift its impact from a positive to a negative have received a lot of attention from scholars (Mubarik, 2005).

In Sub-Saharan Africa (SSA) countries physical capital formation, export sector, human capital formation, foreign direct investment, debt financing, inflation, HIV/AIDS, government expenditure, inflation, government institutions, internal conflicts, unemployment, and many other factors significantly affect the economic growth in general (Senadza et al., 2018).

Ethiopia's contemporary economic growth is characterized by a macroeconomic with excessive inflation. This unexpected degree of inflation has been made worse due to the political unrest that led to conflict and disputes in many parts of the country.

In the case of the Ethiopian economy Russia- Ukraine war, internal conflicts, and the Covied-19 have contributed a lot in obstructing growth. The study by Kassu et al. (2014) in Ethiopia revealed that public debt has a negative and significant effect on economic growth in the long run but has no effect in the short run. The same study revealed that while external debt has a positive and significant effect on real GDP in the long- run it has no effect in the short run. In addition, investment and saving as a percentage of GDP have a positive and significant effect on real GDP in the short and long run.

The common universal effect of inflation is eroding the purchasing power of consumers. Purchasing power in this context would mean, the value of a currency expressed in terms of the number of goods or services that one unit of money can buy. Such an overall rise in prices over time reduces the purchasing power of consumers. SSA faces one of the most challenging economic environments expressed by rising food and energy prices, and high levels of public debt. Since food and energy account for more than half of household consumption in SSA, living costs across the region have risen extremely. Therefore, the most important issue is to tackle these high levels of inflation which are devastating incomes and food security. To do so it is recommended to give attention to factors that affect inflation in a specific country. In addition to this, since 2007, the new Ethiopian millennium Ethiopia has faced a continuous increase in the price of goods and services. This has been a critical problem for policymakers and unable to stabilize the price level in a manner that could not negatively affect the living standard of the majority of the citizens.

Previous studies have shown different views about the relationship between inflation and growth (Kahssay, 2017). Some scholars, in favor of the Structural and Keynesian perspectives, believe that inflation is not harmful to economic growth whereas other scholars particularly those in favor of monetarist views, argue that inflation is harmful to economic growth. Fikirte (2012) & Uddin (2021) investigated that there is a significant short-run relationship but not in the long-run.

The relationship between inflation and economic growth is an important issue in macroeconomics and monetary policy. Even though the relationship between the inflation rate and economic growth has been studied extensively, the exact relationship is not

conclusive. The findings of empirical studies about the impacts of inflation on economic growth vary across countries and over time (Akinsola & Odhiambo, 2017).

The empirical studies undertaken in the Ethiopian context have shown conflicting results on the inflation-growth relationship. In addition to these concerning the threshold level, these studies suggested a threshold level of 9-10 percent. However, the findings in Ashagrie (2015) did not support the existence of the inflation threshold effect in the Ethiopian case (Tenaw & Demeke, 2020).

This study examines the responsiveness of Ethiopian economic growth to inflation. It uses time series data and macroeconomic parameters spanning the period from 1982 to 2023. Economic growth and inflation are among the most debated topics globally, particularly in developing countries like Ethiopia.

To the best of the researcher's knowledge, this study will contribute to the existing body of knowledge by identifying the level of inflation that supports GDP growth in Ethiopia. Determining the optimal inflation rate is crucial for informing policy decisions in the country. Therefore, the primary objective of this research is to examine the level of inflation that positively impacts Ethiopia's economic growth.

METHODOLOGY

Types, Sources of Data, and Method of Data Collection

The research was conducted using secondary data obtained from the National Bank of Ethiopia and the World Bank. The data covered a time period from 1982 to 2023 and was acquired through email communication with the organizations and website sources. These organizations were deliberately selected due to their substantial contributions to macroeconomic variables, rendering them indispensable sources for this type of data (Pickett et al., 2005).

Model Specifications

Threshold regression models are employed in examining the relationship between economic growth and inflation in Ethiopia, specifically focusing on the optimal inflation threshold. These models incorporate a threshold parameter, or change point, which allows for the identification of nonlinear interactions between predictors and the outcome. Utilizing threshold regression models can result from a better understanding of the responsiveness of economic growth to inflation in a clear and interpretable manner (Fong et al., 2017).

This study examines various factors such as the growth rate of real GDP, inflation as a measure of price change in the economy, the growth rate of terms of trade, total foreign direct investment, unemployment rate, exchange rate, and government expenditure. The inclusion of terms of trade aims to address the issue of a negative relationship between inflation and growth rates, as highlighted by (Mubarik, 2014).

Therefore our model becomes;' GDP_t = f(INF, INV, and TOT)……(1)

Based on the linear regression model the equation can be rewritten as;

$$GDPR_t = B_0 + B_1 NTRAD_t + B_2 INF_t + B_3 FDI_t + B_4 UNEMP_t + B_5 EXCH_t + B_6 GOVEXP_t \ldots\ldots (2)$$

The following model shows the effect of each independent variable on economic growth (GDP) based on our results using a simple regression model. So we found the following model;

$$GDPR_t = B_0 + B_1 NTRAD_t + B_2 INF_t + B_3 FDI_t + B_4 UNEMP_t + B_5 EXCH_t + B_2 * D_t(INF_t - K) + B_6 GOVEXP_t + \varepsilon_t \quad -----(3)$$

Where, $GDPR_t$ growth rate of GDP,

NTRAD is Net trade in goods is the difference between exports and imports of

goods. Trade-in services are not included. Data are in current U.S. dollars.

INF_t is the inflation rate,

FDI is Foreign direct investment,

UNEMP is Unemployment refers to the share of the labor force that is without work but available for and seeking employment,

EXCH is Official exchange rate, and

GOVEXP is Government Expenditure

K is arbitrary number k= 1,2,……N that represents the level of inflation.

D is the dummy variable, which is defined as follows:

$$D_t = \begin{cases} 1, \text{ if } 100 * D\ GDP_t > k \\ 0, \text{ if } 100 * D\ GDP_t \leq k \end{cases}$$

The parameter *k* represents the threshold inflation level with the property that the relationship between output growth and inflation. While the optimal k is determined by finding the value that minimizes the residual sum of squares, the value of k is chosen randomly for the estimation (RSS). As a result, the best threshold level is the one that reduces the sequence of residual sum of squares (RSS). At this level, inflation has a major impact on economic growth. The threshold values were determined at random (Leshoro, 2014).

RESULTS AND DISCUSSION

Results

Before commencing the analysis, the average values of the unemployment and exchange rate variables were utilized to replace the missing data points. As it is seen from Table 1, the data is divided into two regions, Region 1 and Region 2, by the threshold regression model. Region 1 refers to the low inflation regime, where inflation is equal to or below the threshold value of 16.46%. On the other hand, Region 2 represents the high inflation regime, where inflation exceeds the threshold value. In Region 1, inflation has a neutral effect on GDP growth when it is below the threshold. The significant constant term in this region indicates that there is high GDP growth at low inflation levels. The model suggests that factors other than inflation drive GDP growth in this region. Therefore, maintaining inflation below 16.4647% is considered optimal for the economy, and the central bank should aim to keep inflation within Region 1. In Region 2, the constant term is smaller than in Region 1, signifying diminished GDP growth when inflation exceeds the threshold. In this region, inflation exhibits a negative influence on GDP growth, with an escalating inflation rate corresponding to a decline in growth. The threshold serves as the pivotal point at which the association between inflation and growth shifts from a neutral to a negative trajectory. To safeguard against a downturn in economic growth, it is imperative for the central bank to proactively curtail inflation from entering Region 2. In conclusion, the two regions, Region 1 and Region 2, explain the low and high inflation regions. Region 1 is the optimal zone where inflation does not significantly affect growth, while Region 2 represents high inflation that starts to hinder growth. The threshold serves as the boundary that separates these two regions.

Discussion

If there is a consistent pattern of imports exceeding exports for an extended duration, it has a detrimental effect on the growth of GDP through net trade. Throughout its history, Ethiopia has consistently experienced trade deficits, where the value of imports exceeds that of exports. This ongoing situation has had a negative impact on the overall growth of the country's GDP. Additionally, Ethiopia heavily relies on imported capital goods, fuel, and even food items, further exacerbating the trade deficits. The growth rate of these imported goods surpassing that of exports contributes to the persistent trade imbalances. Notably, Ethiopia's exports are heavily concentrated in a few primary commodities such as coffee, gold, and spices, which make the trade balance susceptible to price fluctuations. When the prices of these commodities decline, it leads to reduced export revenues. Furthermore,

currency appreciation reduces the competitiveness of exports, while depreciation increases the cost of imports, both of which have adverse effects on net trade.

Table 1

Threshold Regression

Threshold regression						
					Number of obs	42
Full sample: 1982 - 2023					AIC	1763.1672
Number of thresholds = 1					BIC	1774.9894
Threshold variable: inf					HQIC	1767.4417
Order	Threshold	SSR				
1	16.4647	3.921e+20				
GDP grwoth rate	.	Coef	Std. Err	z	P>z	[95% Conf. Interval]
GDPgrwothrate						
Net trade		-2.37	0.50	-4.73	0.000	-3.35 -1.39
FDI		-7.63	4.05	-1.88	0.060	-1.56 3.13
Unemployment		-4.28	2.23	-1.92	0.054	-8.64 8.25
Exchange rate		-6.21	2.62	-2.37	0.018	-1.13 -1.07
Government Expenditure		0.15	0.012	13.00	0.000	0.13 0.178
Region1	_cons	5.27	4.89	10.79	0.000	4.32 6.23
Region2	_cons	5.14	4.54	11.34	0.000	4.25 6.03

Source: Model result

The Ethiopian currency, the Birr, has experienced periods of volatility, making it susceptible to external events like the global financial crisis and recessions in key trading partners. These events further impact export demand and trade balances negatively. The finding revealed that factors such as persistent trade imbalances, a limited range of exports, dependence on imports, and fluctuations in exchange rates, have collectively contributed to net trade acting as a hindrance to Ethiopia's long-term GDP growth. Addressing trade deficits could potentially stimulate growth.

Ethiopia has historically struggled to attract significant amounts of foreign direct investment (FDI) in comparison to other developing nations, resulting in limited impact. The majority of FDI in Ethiopia is directed towards capital-intensive sectors such as manufacturing, real estate, and energy, which hinders its potential spillover effects on the broader economy. Additionally, the lack of integration between foreign and local firms restricts the transfer of knowledge and technology from FDI. Moreover, factors such as periods of high inflation, foreign exchange shortages, and political unrest contribute to

investor attention, discouraging long-term, productivity-enhancing FDI. Ethiopia's relatively small domestic market also poses a challenge for market-seeking FDI, while infrastructure gaps, including inadequate power, transport, and telecom networks, increase investment costs and risks. Furthermore, the dominance of state-owned enterprises limits opportunities for private foreign investors. Overall, the low volume of FDI inflows has hindered Ethiopia's growth over the past four decades. Addressing these constraints is crucial to strengthen FDI's role in driving GDP growth in the future.

Ethiopia's GDP growth has been largely driven by capital-intensive sectors, which unfortunately generate limited employment opportunities. This is due to the rigidities in the labor market that restrict movement between sectors, leading to limited job creation during upswings. As a result, a significant portion of the labor force remains in low-productivity agriculture. Despite having a rapidly growing young population seeking jobs, employment growth has not kept pace with the expanding labor force. This is partly due to the education system's failure to produce skills aligned with private sector demands, contributing to higher unemployment despite growth. Additionally, the large public sector crowds out private investment that could create more diverse job opportunities.

External factors such as oil price spikes, global recessions, and commodity price crashes have also repeatedly stifled job creation during periods of otherwise strong growth. Furthermore, an uncompetitive business environment has constrained the emergence of vibrant private enterprise that generates employment. Deficiencies in power, transport, and information infrastructure have also increased business costs and hampered job creation. In summary, the structure of economic growth, labor market rigidities, demographic trends, and other institutional factors have prevented rising GDP from translating into job creation, keeping unemployment high despite growth. Addressing these constraints could strengthen the growth-employment linkage and lead to more inclusive economic growth in Ethiopia.

The depreciation of the Birr against major currencies had both positive and negative effects on Ethiopia's economy. On one hand, it made exports cheaper and more competitive internationally, which could potentially boost economic growth. However, on the other hand, it also made imports more expensive in local currency terms, leading to inflationary pressures. This was particularly problematic for critical imports such as capital goods and fuel, which are essential for Ethiopia's development. As a result, growth was dampened.

The government made significant investments in various sectors such as roads, energy, and telecoms, which resulted in improved infrastructure and connectivity. This, in turn, supported economic activity and fostered growth. Additionally, public spending on education and healthcare played a crucial role in building human capital, leading to enhanced productivity and further economic growth. Notably, during periods of weak private demand, increased government spending served as a fiscal stimulus to boost overall growth. Furthermore, public programs provided subsidies for inputs, expanded extension services and invested in rural infrastructure to enhance agricultural productivity, thereby increasing the productivity of small-scale farmers. Moreover, the government's initiatives, such as industrial parks, export subsidies, and domestic

procurement policies, supported both import-substituting and export-oriented manufacturing. On the other hand, the expansion of social safety nets ensured that income was distributed to the poor, resulting in increased consumer spending. Additionally, the presence of a large state enterprise sector meant that public investment directly contributed to measured economic output and growth. Overall, the significant government expenditures in Ethiopia over the years have played a pivotal role in driving GDP growth through direct contributions and economy-wide linkages.

CONCLUSIONS

A study on inflation threshold and economic growth has been carried out by dividing the data into two distinct regions: Region 1, characterized by low inflation, and Region 2, characterized by high inflation. These divisions were determined using a threshold regression model, with a high threshold value of 16.46%.

Within Region 1, it was observed that low inflation has a neutral impact on GDP growth, with high levels of GDP growth occurring at low inflation levels. However, in Region 2, high inflation was found to have a negative influence on GDP growth, with a decline in growth as inflation surpasses the threshold value. It is widely considered that maintaining inflation below the threshold of 16.4647% is best for promoting economic growth. This highlights the importance of central bank intervention in order to prevent inflation from entering Region 2, as it can hinder economic growth.

Ethiopia has faced challenges in terms of persistent trade imbalances, where imports consistently exceed exports. This has had a negative impact on the country's GDP growth. Additionally, the concentration of exports in a few commodities makes the economy vulnerable to price fluctuations. Attracting significant foreign direct investment (FDI), particularly in knowledge-intensive sectors, has proven to be a challenge for Ethiopia. Factors such as high inflation, foreign exchange shortages, and political instability contribute to investor attention. While capital-intensive sectors drive GDP growth, they generate limited employment opportunities. This is due to rigidities in the labor market, inadequate skills matching, and a large public sector. As a result, high unemployment rates persist despite economic growth.

The Birr's depreciation has both positive and negative impacts, with exports becoming more competitive but inflationary pressures rising. Exchange rate fluctuations present difficulties, affecting debt repayment, investment, and the current account deficit. On the other hand, government investments in infrastructure, education, and healthcare have bolstered economic activity and growth. Additionally, government spending has acted as a fiscal stimulus during periods of weak private demand, contributing to overall growth. Overall, Ethiopia's economic challenges are diverse, encompassing trade imbalances, FDI limitations, labor market issues, exchange rate dynamics, and the role of government spending. Therefore, addressing concerns related to inflation, trade deficits, FDI, employment, exchange rates, and strategic government investments is critical for sustained and inclusive economic growth.

The research suggests that the central bank should adopt an inflation-targeting framework to ensure that inflation remains within Region 1. Proactive measures should be taken to prevent inflation from entering Region 2, where it negatively impacts GDP growth.

To attract more FDI, the government should work towards creating a more favorable

investment climate. This includes addressing issues such as inflation, foreign exchange shortages, and political instability. Efforts should be made to integrate foreign and local firms, facilitating the transfer of knowledge and technology.

Addressing rigidities in the labor market is essential for inclusive growth. The government should focus on aligning the education system with private sector demands to ensure a skilled workforce. Additionally, policies should be implemented to encourage job creation in sectors beyond capital-intensive industries. While recognizing the benefits of a competitive exchange rate, efforts should be made to maintain stability. Excessive fluctuations can create uncertainty and negatively impact investment. The government should implement measures to manage exchange rate volatility and align it with economic fundamentals.

These investments have proven to support economic activity and growth. However, ensure that investments are well-targeted to address specific constraints, such as power, transport, and information infrastructure deficiencies. Maintain and possibly expand the existing social safety net programs to ensure income distribution to the poor. This can contribute to increased consumer spending and support domestic demand, especially during periods of weak private demand.

Establish a robust system for monitoring and evaluating the effectiveness of implemented policies. Regular assessments will provide insights into the impact of policy measures on key economic indicators, allowing for timely adjustments and improvements. By addressing these key areas, Ethiopia can work towards achieving sustained and inclusive economic growth, mitigating the challenges outlined in the analysis.

Recommendations

The study's limitations stem from its dependence on historical data until 2021, and forthcoming advancements could potentially affect the recognized inflation threshold and its repercussions on GDP. Consequently, additional investigation is warranted to delve into a more extensive analysis, encompassing supplementary economic indicators and external variables, in order to enhance comprehension and tackle the intricacies of Ethiopia's economic dynamics.

CRediT authorship contribution statement

Zegeye Mulu: Conceptualization, methodology, Investigation and writing

Semeneh Bessie: Visulization, validation and supervision, review and editing

Gemechu Mulatu: Validation. Supervision, review and editing

Declaration of competing interest

The authors declare that there is no conflict of interest.

Data availability

Data will be made available on request

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