

## Original Article

### Determinants of Tax Revenue in Ethiopia

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#### Abstract

**Background:** Tax revenue is essential for economic and social development, providing resources for public services and infrastructure. In Ethiopia, understanding the determinants of tax revenue is critical for policymakers, especially given the country's low tax-to-GDP ratio despite recent economic growth and poverty reduction. This challenge limits investments in crucial sectors such as education and healthcare. This study investigates the determinants of tax revenue in Ethiopia from 1994 to 2023, focusing on the impact of GDP per capita, the agricultural sector's contribution to GDP, inflation, foreign direct investment (FDI), trade openness, and political stability.

**Methods:** An explanatory research design was used to analyze the determinants of tax revenue collection in Ethiopia over the past 30 years using descriptive statistics and a line graph. The dependent variable is tax revenue, which is a continuous variable. The study uses an Ordinary Least Squares (OLS) model and multiple linear regression to represent the relationship between tax revenue and independent variables. The World Bank database was chosen as the sole source of valid secondary data, providing high-quality economic indicators.

**Results:** Findings reveal a strong positive correlation between GDP per capita and tax revenue, indicating that higher economic performance enhances tax collection. Conversely, the agricultural sector's contribution negatively affects tax revenue, reflecting difficulties in taxing informal agricultural income. Inflation was found to have no significant impact on tax revenue. FDI showed a weak, statistically insignificant relationship due to tax incentives, while trade openness emerged as a significant predictor of tax revenue. Political stability did not significantly influence tax collection. The variables of the study explained 85.6% of the variability in the dependent variable, indicating strength.

**Conclusion:** The study concludes that enhancing tax revenue in Ethiopia requires targeted fiscal policies and effective tax administration, emphasizing the importance of GDP per capita and trade openness as key determinants. Policymakers should prioritize strategies that boost GDP per capita and promote trade openness. Additionally, improving tax coverage in the agricultural sector and reviewing the effectiveness of tax incentives for FDI can strengthen revenue mobilization. These insights are valuable for policymakers seeking to improve fiscal capacity in developing countries.

**Keywords:** tax, tax policy, GDP per capita, FDI, trade openness, Ethiopia

## Introduction

Tax revenue is vital for economic and social development, providing essential resources for public services, infrastructure, and welfare programs (1,2). In Ethiopia, generating sufficient tax revenue poses a significant challenge, particularly as the country seeks to finance ambitious development goals and support a growing population. Despite notable economic growth and a decline in poverty levels, Ethiopia's tax-to-GDP ratio has remained low. This ongoing issue limits the government's capacity to invest in critical sectors such as education and healthcare (3).

Understanding the determinants of tax revenue is crucial for policymakers to enhance fiscal capacity and promote sustainable economic growth. Previous research has identified various factors influencing tax collection, including economic, political, and institutional elements (3-5). However, there is a lack of comprehensive understanding regarding the interplay between these factors within the Ethiopian context.

This study aims to fill this gap by investigating the determinants of tax revenue in Ethiopia from 1994 to 2023. Specifically, the research will address the following questions: What is the impact of

GDP per capita on tax revenue? How does the contribution of the agricultural sector to GDP affect tax revenue? What is the relationship between inflation and tax revenue? How does foreign direct investment influence tax revenue? What is the impact of trade openness on tax revenue? Lastly, how does political stability affect tax revenue? These questions are essential for informing effective tax policies that can enhance Ethiopia's fiscal capacity and reduce reliance on external aid.

## Literature Review

### Influence of GDP per capita on tax revenue

The relationship between GDP per capita and tax revenue has been a subject of extensive research in the field of public finance. A review of the relevant literature suggests that there is a positive and statistically significant association between these two variables. Several studies have examined the influence of GDP per capita on tax revenue, drawing upon data from both developed and developing countries. For instance, a study by Tolossa and Melese (3) found that a 1% increase in GDP per capita was associated with a 0.8% increase in tax revenue as a percentage of GDP. Furthermore, a study by Chamisa and Sunde (6) also explored the relationship between GDP per capita and tax revenue in OECD

countries. Their findings suggested that the positive effect of GDP per capita on tax revenue is more pronounced in countries with stronger institutional quality and lower levels of corruption. Overall, the existing literature provides robust evidence that GDP per capita is a key determinant of tax revenue, with higher levels of economic development generally leading to greater tax collection. These findings have important implications for policymakers aiming to enhance the efficiency and equity of tax systems.

#### **Contribution of agricultural sector to GDP and its relationship with tax revenue**

The higher contribution of the agricultural sector to an economy presents unique challenges for tax revenue generation. Unlike service and manufacturing sectors, which typically have more formalized structures and clearer income streams, agricultural sector is often characterized by informality and variability in income. This makes tax collection more difficult. The informal nature of agricultural activities limits the government's ability to effectively assess and collect taxes, resulting in lower tax revenues despite the sector's significant contribution to GDP (1,7).

Furthermore, the World Bank highlights that smallholder farmers, who dominate the agricultural landscape in Ethiopia, often lack the financial literacy and resources

necessary for tax compliance. This situation is exacerbated by the sector's vulnerability to external shocks, such as climate change and fluctuating market prices, which can lead to inconsistent income levels (5,8). Consequently, a higher proportion of agricultural contribution to the economy does not necessarily correlate with increased tax revenue, underscoring the need for targeted reforms and policies that enhance tax collection mechanisms within this sector.

#### **Consequences of inflation on tax revenue**

A study found a negative and statistically significant impact of inflation on tax revenue. The author suggested that policymakers should consider the inflationary environment when designing tax policies to ensure the sustainability of tax revenue (9). The impact of inflation on tax revenue was found to be negative and significant. High inflation can reduce the real value of tax collections, making it more challenging for the government to mobilize domestic resources (6,10). It can be concluded that inflation rate is a significant predictor of tax revenue performance, with higher inflation leading to lower tax revenue.

#### **Implications of foreign direct investment on tax revenue**

Several studies have found a positive and significant impact of FDI on tax revenue. Paul and Jadhav (2020) conducted a cross-

country analysis and reported that higher FDI inflows lead to increased tax revenue, as multinational corporations contribute directly to the host country's tax base (11). Similarly, Egger and Raff argued that FDI can stimulate economic activity and expand the tax base, thereby enhancing the government's ability to generate tax revenue (12). These findings suggested that attracting FDI can be a crucial strategy for developing countries to boost their fiscal capacity. Other study reports also revealed that FDI is a significant predictor of tax revenue performance, emphasizing the importance of attracting foreign investment in enhancing the country's fiscal capacity (4,13).

#### **Impact of trade openness on tax revenue**

A study by Chamisa and Sunde (2024) suggested that trade openness can enhance a country's fiscal capacity by providing opportunities for the government to collect various forms of trade-related taxes (6). A study examined the determinants of tax revenue and found a positive and significant relationship between trade openness and tax revenue (8). The authors explained that as the country becomes more integrated with the global economy, the government can leverage trade-related taxes, such as import and export duties, to generate additional tax revenue. Another study (5) also reported a positive and significant impact of trade

openness on tax revenue performance, highlighting the importance of trade liberalization in enhancing the country's fiscal capacity.

#### **Effect of political stability on tax revenue**

Political stability is a crucial determinant of tax revenue, particularly in developing countries like Ethiopia. A stable political environment fosters investor confidence, encourages economic activities, and enhances compliance with tax regulations. Research reports indicated that political stability positively correlates with tax revenue performance as it creates a conducive atmosphere for business operations and public trust in government institutions (5). Conversely, political instability can lead to uncertainty, reducing investment and economic growth, which in turn diminishes tax revenue. For instance, periods of unrest or conflict often result in decreased economic activities and increased tax evasion, further straining government finances (14). Additionally, effective governance and political stability are essential for implementing tax reforms and ensuring efficient tax collection mechanisms (15). Thus, maintaining political stability is vital for enhancing tax revenue in Ethiopia, as it directly influences economic performance and the overall effectiveness of the tax system.

## Methods and Materials

### Research design and approach

The explanatory research design is appropriate for the study on the determinants of tax revenue in Ethiopia as it allows for the investigation of causal relationships between variables, such as GDP per capita and tax revenue. This design facilitates a deeper understanding of how various factors influence tax revenue, aligning with the objectives of the study (16,17). Furthermore, the quantitative research approach is suitable for the study as it enables the collection and analysis of numerical data to identify relationships between variables. This method allows for statistical testing of hypotheses regarding factors like GDP per capita and inflation, providing empirical evidence to support the findings (18).

### Type and source of Data

The study utilized 30 years of secondary data, which is suitable for examining the determinants of tax revenue in Ethiopia. This approach allows for the analysis of long-term trends and relationships among variables, enabling a more comprehensive understanding of economic dynamics without the time and resource constraints of primary data collection (16,17). Choosing the World Bank database as the sole source of valid and reliable secondary data is justified, as it offers extensive and high-

quality economic indicators crucial for this analysis. The World Bank provides consistent, comparable data, facilitating a robust examination of factors such as GDP per capita and inflation's impact on tax revenue in Ethiopia, aligning with the recommendation of leading research methodologists (18).

### Definition of variables

#### Dependent variable

**Tax revenue:** is a continuous variable that represents the total amount of money collected by the government from various taxes, such as personal income tax, corporate tax, value-added tax, and other levies. Tax revenue is a crucial source of funding for government operations, public services, and development initiatives.

#### Independent variables

- **GDP per capita:** is a continuous variable that represents the average economic output per person in a country, calculated by dividing the Gross Domestic Product (GDP) by the mid-year population. GDP per capita reflects the economic performance and living standards of a population, influencing tax revenue as higher GDP per capita typically correlates with increased tax contributions.
- **Contribution of the agricultural sector to the economy:** refers to the percentage of total economic output (GDP) generated by agricultural activities. This sector is

crucial for many developing countries, including Ethiopia, as it provides employment and sustains livelihoods. However, collecting tax revenue from agriculture is challenging due to its informal nature and income variability, which can hinder effective tax collection.

- **Inflation:** is a continuous variable that represents the sustained increase in the general price level of goods and services within an economy over time (17). Inflation can have a complex relationship with tax revenue, as it can impact the real value of tax collections and the purchasing power of taxpayers, potentially affecting their consumption and investment behavior.
- **Foreign direct investment (as % of GDP):** is a continuous variable that refers to the investment made by a company or individual from one country into business interests located in another country. FDI can have a positive relationship with tax revenue, as it can lead to increased economic activity, employment, and corporate tax payments in the host country (12).
- **Trade openness:** is a continuous variable that represents the degree to which a country's economy is open to international trade, typically measured as the ratio of the sum of exports and imports to the country's gross domestic product (19).

Trade openness can influence tax revenue by affecting the tax base and the government's ability to collect taxes on international trade transactions.

- **Political stability:** refers to the degree of consistency and predictability in a country's political environment, characterized by the absence of political turmoil, violence, or significant changes in government. It is a continuous variable that influences economic performance and tax revenue, as stable governance fosters investor confidence and compliance with tax regulations (18). It is measured by the World Bank and its percentile rank indicates the country's rank among all countries covered by the aggregate indicator, with 0 corresponding to lowest rank, and 100 to highest rank.

#### Method of data analysis and model specification

Descriptive statistics, including the mean and standard deviation, were employed to analyze the data comprehensively. A line graph was used to illustrate the trend in tax revenue collection in Ethiopia over the past 30 years. In this study, the dependent variable is tax revenue, which is continuous. Therefore, an Ordinary Least Squares (OLS) model was applied to identify the key determinants of tax revenue in Ethiopia (20,21). To represent the relationship between tax revenue (dependent variable)

and various independent variables, we can use a multiple linear regression model. The mathematical formula can be expressed as:

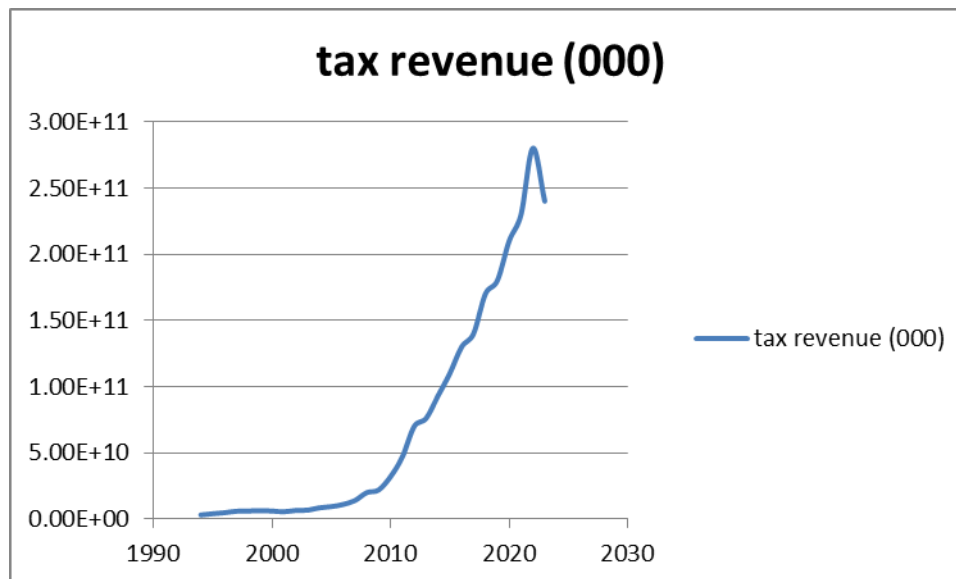
$$\text{Tax rev} = \beta_0 + \beta_1 \cdot \text{GDP} + \beta_2 \cdot \text{Agri} + \beta_3 \cdot \text{Inf} + \beta_4 \cdot \text{FDI} + \beta_5 \cdot \text{Trade} + \beta_6 \cdot \text{PolSt} + \epsilon$$

## Results

### Trend and descriptive statistics analysis

The following line graph shows the tax collection pattern in Ethiopia over the past 30 years, from 1994 to 2023 (Figure 1). It highlights the trends and fluctuations in tax revenue. The data taken from World Bank was converted to graph depicting tax revenue in Ethiopia from 1990 to 2023 reveals significant trends in the country's

fiscal performance over the years (22). Initially, from 1990 to around 2000, tax revenue remained low and relatively stable, suggesting limited government capacity for revenue mobilization. However, a gradual increase began around 2000, indicating improvements in tax policy or economic conditions that enhanced revenue collection. This upward trend accelerated sharply from 2010 onwards, with tax revenue experiencing substantial growth, likely reflecting robust economic expansion and effective reforms aimed at increasing compliance and efficiency in tax administration.



**Figure 1.** The tax collection pattern in Ethiopia over the past 30 years, from 1994 to 2023 (22).

By approximately 2020, tax revenue peaked, marking the highest level of fiscal performance observed in the graph. This peak may indicate a culmination of

successful economic strategies or favorable economic conditions. However, post-2020, the graph shows fluctuations in tax revenue, suggesting potential challenges or

adjustments in tax policy that could be impacting stability (Figure 1). Overall, the trend illustrates Ethiopia's evolving fiscal landscape, highlighting a journey from initial challenges to significant growth in tax revenue, while also pointing to the need for further exploration of the factors influencing

recent fluctuations. The following table presents the descriptive statistics for key variables related to tax revenue in Ethiopia over the past 30 years (1994 to 2023) (22). This analysis aims to provide a foundational understanding of the determinants influencing tax revenue (Table 1).

**Table 1:** The descriptive statistics of the study variables

	N	Minimum	Maximum	Mean	Std. Deviation
Tax revenue	30	3,076,400,000	277,421,000,000	71,127,319,738.	85,228,407,550
GDP per capita	30	738.33	68,936.31	11,046.34	16,272.75
Contribution of the agricultural sector to the economy	30	31.22	52.71	41.27	5.64
Inflation	30	(8.48)	44.36	12.33	12.19
Foreign direct investment	30	0.18	5.58	2.59	1.66
Trade openness	30	21.00	48.00	35.13	7.68
Political stability	30	3.77	25.53	11.29	6.33
Valid N (listwise)	30				

**Source:** World Bank data base and own computations (22).

For tax revenue, the average is approximately 71,127,319 with a minimum of 30,764,000 and a maximum of 2,774,210 indicating significant variability in tax revenue across the years as reflected by a high standard deviation of 52,284,075. The average GDP per capita stands at about 1,046.34, with a minimum of 738.33 and a maximum of 68,936.31, suggesting moderate variation in economic performance per individual, as indicated by a standard deviation of 72.76. Furthermore, the agricultural sector contributes, on average, about 41.28% to the economy, with a relatively stable contribution reflected by a

standard deviation of 5.64. The average inflation rate over this period is approximately 12.33%, with a noteworthy range from -8.48% to 44.36%, highlighting periods of both deflation and significant inflation. Foreign direct investment averages around 2.59, with a standard deviation of 1.66, indicating varying levels of foreign investment influenced by changing economic conditions.

Trade openness has an average score of 35.13, with a standard deviation of 7.68, suggesting some variability in Ethiopia's integration into global markets. Lastly, political stability averages at 11.30, with a

standard deviation of 6.34, indicating fluctuations in the political environment that could impact economic performance and tax revenue. These descriptive statistics provide valuable insights into the various factors that may influence tax revenue in Ethiopia, highlighting the complex interplay between economic performance and tax collection

**Table 1.** The model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.925 <sup>a</sup>	0.856	0.818	0.64913

The model summary presented provides a snapshot of the statistical analysis conducted to examine the relationship between the selected variables and tax revenue in Ethiopia. The table shows that the model's R, which represents the correlation coefficient, is 0.925, indicating a very strong positive correlation between the predictors and tax revenue. This suggests that the independent variables together have a substantial impact on tax revenue. The R Square value is 0.856; meaning that approximately 85.6% of the variability in

**Table 2.** The ANOVA output of the model.

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	57.585	6	9.597	22.777	0.000 <sup>b</sup>
Residual	9.692	23	0.421		
Total	67.276	29			

over the studied period.

### Econometric model analysis

The dependent variable of the study is continuous; hence, the Ordinary Least Squares (OLS) model was selected as the right type of model for the study. The following was the model summary (Table 2)

tax revenue can be explained by the model. In other words, the predictors used in the analysis account for most of the changes in tax revenue during the examined period. The Adjusted R Square, which adjusts for the number of predictors in the model, is slightly lower at 0.818 (Table 1). This adjusted value still indicates a strong model, confirming that the independent variables significantly contribute to predicting tax revenue, even after adjusting for the number of predictors. The model Analysis of Variance (ANOVA) output is given below (Table 2).

The ANOVA data (Table 2) provides key information about the overall significance of the regression model. The Regression Sum of Squares is 57.585, which represents the variation in tax revenue that can be explained by the independent variables in the model. The Residual Sum of Squares is 9.692, which indicates the variation in tax revenue that cannot be explained by the model (Table 2). The F-statistic is 22.777, which tests whether the model as a whole is statistically significant. A high F-value indicates that the independent variables collectively explain a significant portion of the variance in tax revenue (Table 2). The p-value (Sig.) for the F-statistic is 0.000, meaning the model is statistically significant at any conventional level (e.g., 0.05 or 0.01). This demonstrates that the predictors - political stability, trade openness, foreign direct investment, inflation, GDP per capita, and the contribution of the agricultural sector - are jointly significant in explaining the variance in tax revenue. These are discussed briefly with the support of coefficients of the ANOVA model.

#### **GDP per capita**

The coefficient for GDP per capita is 0.00005196 (5.196E-005), which is positive and statistically significant (t-value = 4.619, p-value = 0.000) (Table 3). This suggests that as GDP per capita increases, tax revenue also increases. The standardized

beta coefficient is 0.555, indicating that GDP per capita is a strong predictor of tax revenue.

#### **Contribution of the agricultural sector to the economy:**

The coefficient for the agricultural sector's contribution to GDP is -0.145, with a standard error of 0.043. The negative sign suggests an inverse relationship between the contribution of agriculture and tax revenue. The t-value is -3.376, and the p-value is 0.003, indicating that this variable is statistically significant (Table 3). The standardized beta coefficient for this variable is -0.536, which suggests that a higher contribution from agriculture is associated with lower tax revenue.

#### **Inflation:**

The coefficient for inflation is 0.014, with a standard error of 0.014. The t-value is 0.975, and the p-value is 0.340 (Table 3), meaning that inflation is not statistically significant in predicting tax revenue. The standardized beta coefficient is 0.112, indicating a weak positive relationship, which is not statistically relevant.

#### **Foreign direct investment (FDI):**

The coefficient for FDI is -0.032, with a standard error of 0.106. The t-value is -0.303, and the p-value is 0.765, meaning that FDI is not a significant predictor of tax revenue in this model. The standardized beta

is -0.035, indicating a very weak and non-significant negative relationship.

#### Trade openness:

The coefficient for trade openness is 0.059, with a standard error of 0.022. The t-value is 2.667, and the p-value is 0.014, showing that trade openness is a statistically significant predictor of tax revenue (Table 3). The standardized beta coefficient is 0.300, suggesting that greater trade openness is associated with higher tax revenue.

**Table 3.** The Coefficients of the ANOVA model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
(Constant)	27.484	1.843		14.914	0.000
GDP per capita	5.196E-005	0.000	0.555	4.619	0.000
contribution of the agricultural sector to the economy	-0.145	0.043	-0.536	-3.376	0.003
Inflation	0.014	0.014	0.112	0.975	0.340
Foreign direct investment	-0.032	0.106	-0.035	-0.303	0.765
Trade openness	0.059	0.022	0.300	2.667	0.014
Political stability	-0.020	0.033	-0.083	-0.609	0.549

a. Dependent Variable: Natural Logarithm of Tax Revenue

## Discussion

### GDP per capita

Study findings indicated that higher GDP per capita is a strong predictor of increased tax revenue, with results emphasizing the importance of this variable in fiscal policy (23). The positive and statistically significant relationship between GDP per capita and tax revenue underscores the critical role of economic growth in

### Political stability:

The coefficient for political stability is -0.020, with a standard error of 0.033. The t-value is -0.609, and the p-value is 0.549 (Table 3), meaning that political stability is not a statistically significant predictor of tax revenue. The standardized beta coefficient is -0.083, indicating a weak negative relationship that is not statistically significant.

enhancing government revenue. This finding aligns with the notion that as individuals' income levels rise, their capacity and willingness to pay taxes increase, leading to a broader tax base. Moreover, the standardized beta coefficient of 0.555 highlights the robustness of this relationship, suggesting that policies aimed at increasing GDP per capita could effectively boost tax revenues. In the context of Ethiopia, fostering economic growth through

sustainable development initiatives may not only improve fiscal health but also support broader socioeconomic objectives. Therefore, integrating fiscal policies that stimulate economic performance is essential for enhancing tax revenue mobilization in the country.

### **Contribution of the agricultural sector to the economy:**

The finding reported in this study aligns with the other researches. A study reports showed that a negative and statistically significant relationship between the agricultural sector's contribution to GDP and tax revenue, with a coefficient of -0.11 (5). A higher contribution from agriculture to GDP is often linked to lower tax revenue due to several factors. Agricultural income tends to be less stable and is frequently derived from small, informal operations, making it challenging to tax effectively. Many farmers engage in subsistence farming, producing primarily for their own consumption, which limits taxable income (24). Additionally, Ethiopia is reliant on agriculture and typically has less diversified economies and may lack robust tax systems, resulting in minimal tax collection from this sector. Consequently, while agriculture may drive GDP growth, its characteristics often lead to reduced overall tax revenues.

### **Inflation:**

The finding of this study aligns with prior

studies, providing further evidence on the complex nature of this relationship. A study by Klemm and Parys (2012) found that inflation had a positive but statistically insignificant effect on tax revenue, with a coefficient of 0.02 (25). Similar study reports showed that the impact of inflation on tax revenue was not statistically significant, suggesting that the relationship between these variables may be weak or context-dependent (3).

The results of this study indicate that inflation does not significantly influence tax revenue in Ethiopia, highlighting the complexity of this relationship. Although a weak positive relationship exists, the lack of statistical significance suggests that other factors may overshadow inflation's impact on tax collection. This finding implies that policymakers should be cautious when considering inflation as a primary driver of tax revenue changes. Instead, it might be more effective to focus on structural reforms and improvements in tax administration to enhance revenue mobilization. Further research could explore the interactions between inflation and other economic variables to provide a more comprehensive understanding of their effects on tax revenue.

### **Foreign Direct Investment (FDI)**

Several research studies (13,26) found that the impact of FDI on tax revenue was

negative but not statistically significant. Many countries, particularly developing nations, offer generous tax incentives, holidays, or exemptions to attract foreign investors. These incentives can significantly reduce the tax liabilities of foreign companies. While FDI may increase economic activity, the tax revenues collected from these activities may be lower than expected if the government grants substantial tax breaks to foreign firms (13,26).

The finding that foreign direct investment (FDI) has a negative and statistically insignificant relationship with tax revenue raises important questions about the effectiveness of current tax policies aimed at attracting FDI in Ethiopia. The observed weak negative coefficient suggests that rather than enhancing tax revenues, the incentives provided to foreign investors may be offsetting potential gains. This phenomenon highlights a common challenge in developing countries, where the pursuit of FDI can lead to increased competition among governments to offer tax breaks, ultimately diminishing the expected fiscal benefits. Policymakers should consider reviewing and possibly restructuring these incentives to ensure that they do not undermine the tax base. A more balanced approach could involve fostering local economic development alongside attracting

foreign investment, thereby maximizing overall tax revenue potential.

#### **Trade openness:**

Studies by different researchers found that increased trade openness was associated with higher tax revenues, particularly in developing countries (4,27). The positive and statistically significant relationship between trade openness and tax revenue underscores the importance of integrating into the global economy for enhancing fiscal capacity. The standardized beta coefficient of 0.300 indicates a substantial impact, suggesting that as Ethiopia increases its trade activities, it can effectively broaden its tax base. This finding aligns with existing literature, which emphasizes that trade liberalization not only facilitates tax collection through tariffs and duties but also stimulates overall economic growth. Policymakers in Ethiopia should consider promoting trade policies that enhance openness, as this could yield dual benefits of increased economic activity and improved tax revenue. Additionally, fostering trade partnerships and reducing barriers could further strengthen Ethiopia's fiscal framework and support sustainable development goals.

#### **Political stability**

Studies by Crivelli and Gupta (2014) suggested that political instability could have a negative impact on tax revenue, as it

can disrupt tax administration and collection (27,28). The finding that political stability has a weak negative relationship with tax revenue, and is not statistically significant highlights the complex dynamics between governance and fiscal performance in Ethiopia. This suggests that fluctuations in political stability may not directly translate into changes in tax revenue, potentially due to other overriding factors influencing tax collection. The lack of significance contrasts with literature indicating that stable political environments generally foster investor confidence and compliance with tax regulations. Policymakers should recognize that while political stability is essential for effective governance, its direct impact on tax revenue may require further exploration, particularly in the context of Ethiopia's unique socio-political landscape. Strengthening tax administration and enhancing governance may be necessary to mitigate any adverse effects of political instability on revenue collection.

## Conclusion

Based on the analysis of the study, the following conclusions can be drawn for each specific objective:

### **Impact of GDP per capita on tax revenue:**

The analysis demonstrates a strong positive correlation between GDP per capita and tax

revenue in Ethiopia. The statistically significant coefficient indicates that as GDP per capita increases, tax revenue also tends to increase. This suggests that enhancing individual economic performance can lead to improved tax collection, reinforcing the importance of economic growth in fiscal policy.

### **Effect of the contribution of the agricultural sector to GDP on tax revenue:**

The study reveals a negative relationship between the agricultural sector's contribution to GDP and tax revenue. A higher share of agriculture in the economy is associated with lower tax revenues, likely due to the informal nature of agricultural income and the predominance of subsistence farming. This finding highlights the challenges in taxing agricultural income effectively, suggesting that reliance on agriculture may limit overall tax collection.

### **Impact of the inflation rate on tax revenue:**

The analysis indicates that inflation does not have a statistically significant effect on tax revenue. Although there is a weak positive relationship, the lack of significance suggests that inflation's impact on tax revenues may be context-dependent and complex. This finding aligns with previous studies, indicating that inflation might not be a reliable predictor of tax performance.

### **Effect of foreign direct investment (FDI)**

**on tax revenue:** The results show that FDI does not significantly affect tax revenue in Ethiopia. The negative coefficient, coupled with a high p-value, indicates a very weak and statistically insignificant relationship. This could be attributed to the tax incentives and exemptions often granted to attract foreign investments, which can diminish expected tax revenues from this sector.

**Impact of trade openness on tax revenue:** The analysis reveals that trade openness is a statistically significant predictor of tax revenue. A positive relationship suggests that greater integration into the global market is associated with increased tax revenue. This finding underscores the potential benefits of trade policies that enhance openness, which could lead to improved fiscal outcomes.

**Effect of political stability on tax revenue:** The study concludes that political stability does not have a statistically significant impact on tax revenue. The weak negative relationship suggests that fluctuations in political stability may not directly influence tax collection. This finding highlights the need for robust tax administration and collection systems that are resilient to political changes. The major limitation of the study is its focus only on Ethiopia, and not taking other countries.

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## Declarations

### Ethics approval and consent to participate

Ethical approval letter for the study was obtained from Pharma College Institutional Research Ethics Review Committee (IRERC).

## Consent for Publication

The authors have provided their full and explicit consent for the publication of this article.

## Data Availability Statement

The data has been carefully compiled and is readily accessible. If you are interested in obtaining the data, please don't hesitate to reach out, and we will provide it upon request.

## Conflicting Interests

There are no conflicts of interest or competing interests disclosed among authors, Research advisor supervisor and the author and The College.

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None

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