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Effects of Inflation and Foreign Direct Investment and Tax Revenue Collection in Ethiopia

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Abstract: *Tax is a monetary liability levied on individuals or group belongings. Tax is not a deliberate payment or contribution rather an enforced role. Tax levied based on legislative authority and in any tax directive imposed by the government. A well-functioning Tax system is necessary for raising revenue sources, powerful, sustained, and inclusive economic growth. However, in developing countries, especially sub-Saharan countries, the revenue system has fundamental weaknesses. The main aim of the paper is to analyze the factors that affect tax revenue collection in Ethiopia. Taxation is affected by various problems such as unemployment, Inflation, level of citizens' income, and foreign direct investment (FDI). The paper employs secondary data that reflects the collections of taxes in Ethiopia. The data contains the consecutive Ten years of the Ethiopian Ministry of Revenue's achievement from 2009 to 2018. The paper linear regression model. In the Ethiopian tax collection system, the shortage of FDI and other related problems are the system's main problems. Due to tax exemption and subsidy, more research concluded that FDI affects tax revenue, but this paper presents the ultimate benefits of FDI to tax collection.*

Keywords: Tax collection, Foreign Direct Investment, Income Tax, Unemployment, Inflation

1. Introduction

Tax is a mandatory contribution to government revenue, collected by the government on individuals and groups based on their business activities or based on transactions of goods and services. The government of a country levies tax upon its habitats for its support or to facilitate the service delivery in a country (Aamir et al., 2011). According to Xing & Whalley (2014). The VAT invoice is the key to the VAT system in China and other countries. However, VAT collection in China has always been facing serious challenges of tax fraud ever since 1994. Without effective supervision of VAT invoices, VAT fraud through counterfeiting, reselling, or stealing VAT invoices, or invoicing false transactions can occur. Responding to potential and actual tax fraud, the State Administration of Taxation (SAT) has constructed a nation-wide network to enter, monitor, and manage VAT information and make sure that most VAT is paid. This network is the Golden Tax Project (GTP) and has been designed and operated in three stages since 1994.3 this project covers the vast majority of agricultural and manufacturing goods transactions in China and includes a large amount of information on the transactions of firms within the country.

Major types of taxes existing in Ethiopia are reviewed; those are divided into two: The inefficient tax collection system may have retarded the coming generation from all-rounded development. The main factors to be inefficient will be assessed by supporting documents from tax collection bodies. To give more evidence for this research, the researcher used ten years' data (from 2009/20010 to 2017/2018) which originated from the Ministry of Revenue. The government's main duty is not only collect tax bet but also assured amount of tax levied by the government is collected fairly, equitably, and cost-effective. This study will assess the factors that affect Ethiopian tax collection performance in different ways.

2. General Overview on Tax

Taxation is the new frontier for those concerned with state-building in developing countries. Without the ability to raise revenues effectively, states are limited in the extent to which they can provide security, meet basic needs or foster economic development. Yet, the political importance of taxation extends beyond the raising of revenue. We argue in this book that taxation may play the central role in building and sustaining the power of states and shaping their ties to society (Bräutigam et al., 2008). Taxes are divided into two main categories, direct and indirect. Direct taxes are taxes, which taxpayers suffered, whereas others pay indirect taxes to tax collectors.

Direct Taxes: Direct taxes are taxes imposed on the direct income of any individuals or company (Federal Democratic Republic of Ethiopia Indirect Tax (FDRE Proclamation, 2002).

Indirect Taxes: Governments impose indirect taxes and collected by taxpayers assigned by law from consumers for the transaction service they get goods or service from the market; these taxes are turnover tax, Value Added Tax, excise tax, Customs duty, and Stamp Duty. (FDRE IT Proclamation No. 286/2002). Optimal tax analysis is used based on the tax system that tax authorities created to determine pre-tax and disposable income (Singh, 2019).

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Empirical evidence on tax revenue in case Global Studies

According to Haider M. and A.R. Chaudhary, 2013 to check the impact of foreign direct Investment on tax revenue, the study uses FDI and GDP per person employed as independent variables and tax revenue as the dependent variable.

Evans et al., (2017). Explained that Econometric estimations using panel data show that: First, FDI affects positively and significantly total tax revenue, especially tax on income and profits, but the effect on international trade tax revenue is not significant. Thus, a 10% increase in FDI leads to a 4.78% increase in total tax revenue. Second, total tax revenue and taxes on income and profits, the contribution of FDI allocated to the agricultural sector is less harmful than the contribution of FDI allocated to industrial and mining sectors. According to Boly et al. (2020). The empirical results are twofold. First, we find that cuts in statutory CIT rate increase FDI net inflows to the host country and in the other neighboring countries in the short and long terms. Therefore, powering the tax is an economic policy instrument that can attract more FDI. However, to reduce the negative effects of lower tax revenues, governments can broaden the tax base and strengthen tax collection capacities to finance development needs. In 2014, the average tax-to-GDP ratio in Africa was only about 17.1 percent, which is much lower than the estimated level of about 25 percent required for financing basic development needs (AEO, 2018). Ongo Nkoa (2014) states that foreign direct investment is introduced as a factor of production. The study shows that FDI contributes positively and significantly both to economic growth across the sub-region as well as in individual member states.

Tax revenue in the case of Ethiopia

Aamir et al., (2011). The analysis indicated that the share of tax revenue to GDP is very low, which implies that domestic resource mobilization through taxation is at an infant stage in Ethiopia. The output revealed that the annual rate of Inflation and agriculture share to GDP was found to have a statistically significant and negative effect on tax revenue.

Conceptual Framework

This section summarizes the study framework or model as per the study of variables relation. The study's main variables are; the level of inflation, foreign direct investment, citizens' disposable income, and unemployment. In this study, the variables are regarded as independent variables, which influence the amount of the collected taxes, the dependent variable in Ethiopia.

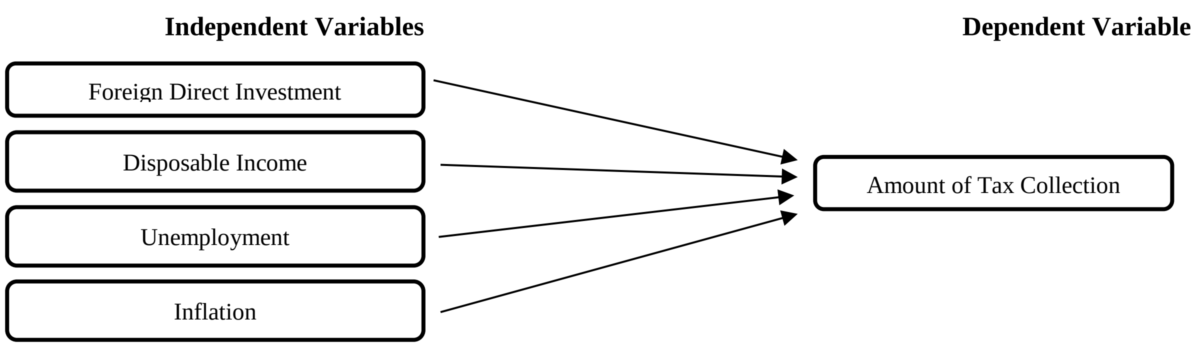

Figure 1.1. Conceptual Frame Work of Model

3. Research Methodology

This research used both descriptive and explanatory methods. The study of descriptive design seeks to explain the factors that affect tax collection in Ethiopia. The main source of data was secondary data from the Ethiopian Revenue and Customs Authority; the current name is the Ethiopian Ministry of Revenue. In this case, yearly data from 2009/10 - 2017/2018 has been collected. The yearly data for ten years period is large enough to show every tax collection performance trend and can be checked its reliability by different scientific research methods. The specific data collected were for the analysis purpose of tax collected (dependent variable), rate of Inflation, unemployment, tax rates, level of income, and foreign direct investment (all independent variables). The study employed to measure four continuous independent variables and one continuous dependent variable. To analyze the research data, linear regression with multiple variables was used to analyze the relationship and the fitness of the model, significance, multi correlation between all variables. The variables were analyzed using SPSS, Stat Tools 8.0 and Minitab 15 English computer programmer software. Interpretation of quantitative data involved organizing and synthesizing information into units, searching for meaningful patterns, and finally understanding the data gathered through the available documents and reports.

The study used linear equation model specification with multiple independent and dependent variables. The linear regression equation is;

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 2X3 + \ldots + \beta kXk$$

Where, Y= Dependent Variable, X1, X2, *Xk* (Independent Variables), *β (Constant),*

4. Data Presentation and Discussion

Descriptive statistics

Descriptive statistics are useful in describing the fundamental characteristics of data. In a research study, these statistics may help us to manage the data with large data in a table of summaries. Descriptive statistics explain dependent variable tax revenue and four independent variables called foreign direct Investment, disposal income, unemployment, and Inflation in terms of mean, maximum observation, standard deviation. And all the data processed and automated using SPSS, Stat Tools 8.0, and Minitab 15 English computer programmer software.

Table 1.1. Analysis of Descriptive statistics

Descriptive Statistics							
	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Amount of Tax Collection	10	23583.26	176102.82	98102.6330	53420.64336	-1.422	1.334
Foreign Direct Investment	10	103981.00	442540.00	259778.6000	136191.98893	-1.792	1.334
Disposable Income	10	70741	145618	97190.90	28603.967	-.988	1.334
Unemployment	10	8.20	18.12	12.8400	3.41089	-.974	1.334
Inflation	10	6.00	13.00	9.4600	2.20313	-.722	1.334
Valid N (list wise)	10						

According to the above descriptive statistics, result from the average performance of amount of tax collection in a million birr from 2009 to 2018 was 98,102.633; this indicates that the tax collection performance is increasing in best ways, the additional supporting indicator is the mean, and the standard deviation has great difference, 98,102.633 and 53,420.64 respectively. The ten-year tax collection document shows that the difference between the minimum value of 23,583.26 in 2009 and the maximum value of 176,102.82 in 2018, the amount of tax collection is increasing.

Foreign direct investment plays an important role for tax revenue collection. As the above descriptive statistics table indicates that from 2009 to 2018 the minimum amount in million is 10,398 and the maximum amount is 44,254. The increment is not more than four times, the mean value, 28608.90 also not nearest to the maximum value and there is a big difference between the mean value 28,608.90 and the standard deviation, 12,891.68. The citizens' disposable income and the number of the people have a pivotal role to increase the transaction of the goods and services, and ultimately can support the amount of tax collection. The minimum amount of the disposable income is 70,741, and the maximum amount is 145,618, but the mean value 97,190.90, and the standard deviation is 28,603.967, there is a great gap between the mean value and the standard deviation. This implies that the purchasing power of the nation is not increased and the amount of expected tax base is not potentially maximize.

Unemployment has indirect impact on the amount of tax collection. If tax collection performance increasing, infrastructure development and industrialization will increase and side by side unemployed citizens can get employment opportunities, and if unemployment is decreasing employment income tax and other related taxes are increasing. According to the above descriptive statistics, the minimum number of unemployment is 8.2 million and the maximum number of unemployment is 18.12 million, even if tax revenue increasing, unemployment is still increasing due to different reasons. The mean value and the standard deviation difference is steadily very high.

The other factor that influence the amount of tax collection is Inflation; it has indirect impact on tax collection performance. The data indicates that the minimum inflation rate is 6% and the maximum amount is 13%. The mean value 9.64 and the standard deviation is 2.2. So, there also a vast gap between the mean value and the standard deviation. This implies that there is imbalance between money supply and money demand that resulted low FDI, and unemployment. Therefore, to create healthy economy the level of Inflation should shift to single digit.

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Correlations of Variables

Table 1.2. Correlations between Variables

Correlations						
		Amount of Tax Collection	***Foreign Direct Investment***	***Disposable Income***	***Unemployment***	***Inflation***
Amount of Tax Collection	**Pearson Correlation**	1	.981**	.935**	.972**	.286
	Sig. (2-tailed)		.000	.000	.000	.423
	N		10	10	10	10
Foreign Direct Investment	**Pearson Correlation**		1	.938**	.967**	.360
	Sig. (2-tailed)			.000	.000	.306
	N			10	10	10
Disposable Income	**Pearson Correlation**			1	.958**	.317
	Sig. (2-tailed)				.000	.372
	N				10	10
Unemployment	**Pearson Correlation**				1	.276
	Sig. (2-tailed)					.439
	N					10
Inflation	**Pearson Correlation**					1
	Sig. (2-tailed)					
	N					
**. Correlation is significant at the 0.01 level (2-tailed).						

To identify the relationship between dependent and independent variables, the Pearson correlation analysis result shows that there is a strong relationship between variables. As the table indicates FDI, disposable income and unemployment have strong correlation with amount of tax collection. The correlation between the amount of tax collection and, foreign direct investment, disposable income, and unemployment is almost nearest one, which is .981**, .935**, and .972** respectively. Whereas the correlation between amount of tax collection and Inflation has direct or positive relationship at a value of 0.286.

Table 1.3. Model Summary

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.987[a]	.973	.952	11681.74397	1.688
a. Predictors: (Constant), Inflation, Unemployment, Disposable Income, Foreign Direct Investment					
b. Dependent Variable: Amount of Tax Collection					

The Regression equation is:

Amount of Tax Collection = - 20881.65307719 - 0.04507835 Disposable Income + 0.28556108 Foreign Direct Investment - 1292.89352195 Inflation + 4782.99115546 Unemployment

Durbin-Watson test explains that autocorrelation between successive observation in the data should be 1.5 <= X <= 2.5. From the above regression output Durbin-Watson, test result indicates that the value is **1.688** that is between 1.5 and 2.5. This test approved that there is a collinearity.

R is the correlation between the predicted values and the observed values of Y. R square is the square of this coefficient and indicates the percentage of variation explained by regression line out of the total variation.

R2 tell us how much variation in the dependent variable is accounted for by the regression model, the adjusted value tells us how much variance in the dependent variable would be accounted for if the model had been derived from the population from which the sample was taken. Specifically, it reflects the goodness of fit of the model to the population taking into account the sample size and the number of predictors used. This data result shows that R is 0.987 (this implies the model is fit), R square is 0.973 (this indicates all independent variables affect the dependent variables by 97.3%).

Conclusion

Based on the discussion and analysis part of the data the researcher concludes the following points. Tax revenue and foreign direct investment has a positive relationship. When foreign direct investment raises the tax revenue also increases with different revenue sources. On the other hand, to attract foreign direct investment there will be tax incentives, tax holiday, exemptions and other encouragements, but ultimately this reduction has not that much negative impact on tax revenue. To increase FDI, the government should amend other incentives to attract investment at all levels.

Disposal income (actual personal income) has highly direct or positive relationship with the amount of tax collection in Ethiopia, this is because of increasing of purchasing power, and income of citizens' will increase the market interaction. Hence, the researcher recommend that Ethiopian government should give more focused on economic development continuously that improve disposal income or actual income and life of citizens. When the income of individuals increases the demand for consumption, the value creation will increase. This leads to collect better tax revenue.

The study also revealed that unemployment has indirect relationship with tax revenue. If there is no income tax generated from employee, and no market interaction that will result no tax revenue collection. To maximize employment, the government should give focuses to pro-poor sectors. As a result, marginal job creation, tax collection will increase by the amount of additional employment.

Even though Inflation has indirect relationship with tax revenue, the inflated price of goods and service will reduce the purchasing power of money. This implies that production will decrease, at the same time the amount of tax collection will decrease. Therefore, the government should manage the fiscal policy to minimize Inflation in single digit.

Foreign direct investment needs further study whether it has positive and negative impact on increment of tax revenue in developing economy; some researchers comment due to subsidy and exemptions it affects tax revenue, and others said it has positive impact. However, in my suggestion it is not compromise to say confidently it has the positive impact to tax. So, using additional tools and documents it needs further research.

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