ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

Determinants and Challenges of Tax Revenue Performance in Ethiopia

By: Moges Asmare

June 2018

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A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Master of Science in Accounting and Finance

Advisor: Alem Hagos (PhD)

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Declaration

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other university, and that all source of material used for the thesis have been duly acknowledged.

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Table of Contents

List of Tables

List of Figure

Abbreviations and Acronyms

ADF	Augmented Dickey Fuller
ARDL	Auto Regressive Distributed Lag
CGDP	Current Gross Domestic Product
CPI	Consumer Price Index
CSA	Central Statistics Agency
Debt	Foreign debt by the Ethiopia government
ECM	Error Correction Model
Education	Educational Expenditure as a share of GDP
EPRDF	Ethiopian People's Revolutionary Democratic Front
ERCA	Ethiopian Revenue and Custom Authority
EU	European Union
FDI	Foreign Direct Investment
GDP	Growth Domestic Product
GMM	Generalized Method of Moments
GNP	Growth National Product
In	Investment
IMF	International Monetary Fund
INF	Inflation
MoFEC	Ministry of Finance and Economic Cooperation
NBE	National Bank of Ethiopia
OECD	Organization for Economic Cooperation and Development
Open	Countries Openness
PPI	Producer Price Index
SLS	Stages Least Squares
TR	Tax Revenue
UN	United Nations
VAT	Value added tax
WB	World Bank

Abstract

It is a recognized fact that tax is the main component of government revenue that finances all the government expenditure to meet public demands and stabilizes the economy. However, governments have very different economic philosophies about taxation and they differ in the methods of collecting their tax revenue. Tax has a primary function of raising adequate revenue to finance essential expenditures on the goods and services provided by government. Nevertheless, in Ethiopia, the effort to raise adequate revenue does not commensurate with the level needed for the economic growth. There are problems, which the tax system faces in an effort to increase tax revenue collection. On top of this, the efforts to identify the determinants of tax revenue performance in the country are rare. In light of this, the study has addressed the determinants and challenges of tax revenue performance in Ethiopia. In doing this, the study has adopted a mixed research approach with time –serious data analysis method. The study has utilized both primary and secondary data collected from government offices and other sources. It has taken 30 years macro-economic data on six explanatory variables (Inflation rate, trade openness, debt share of GDP, investment share of GDP, expenditure on general education, current GDP) and investigated their effect up on tax revenue performance in the country. Linear regression analysis is followed to see the effects of explanatory variable on the dependent variable. Accordingly, the findings of the study show that investment and debt share of GDP had significant positive effect on tax revenue performance while the remaining variables had no significant effects. However, the model adequacy and model fit show that the model is significant at 1% level of significant and it explains that 75% of the variation in the tax revenue performance is attributable to the independent variables having significant effect. Other variables, although insignificantly affect tax revenue performance, it is found from person correlation test that they have relationship with the dependent variable. Inflation rate has a negative relationship while current GDP, expenditure on education, and trade openness had positive correlation with tax revenue performance. Besides, the study has found out that when one of the variables (current GDP) is removed from the model, it comes that trade openness, investment share to GDP and expenditure on general education have significant effect on tax revenue performance at 1% level of significance. Concerning the challenges of tax revenue performance, it is found that lack of capacity building and training programs. Low accountability system, corrupt practices, weak employees performance appraisal and evaluation system, inadequate ICT infrastructure, and weak institutional complain handling and resolution mechanisms are among the major challenges of tax collection in Ethiopian revenue and Custom. Finally, based on the findings, the study has recommended that education is essential variable for the tax revenue performance, so the policy maker should give further consideration to enhance the knowledge of ERCA staffs and tax payers.

Key Words: *Tax Revenue, Tax System, Inflation rate, trade openness, debt share of GDP, investment share of GDP, expenditure on general education, current GDP*

Appendix One

Raw Data of the Study

Year	TR	CPI	Openness	Invt	Debt	educ	Nominal GDP	Inflation rate
1980	1298.2	9.03959	0.021202	20452.9	1488.5	200.616	12238.8862	5.2323
1981	1361.86	9.53019	0.020526	21880.3	1895.1	228.16	12503.8215	5.4272
1982	1436.4	10.0283	0.022165	22075.4	2351.6	282.062	13194.55318	5.2267
1983	1558.08	10.0107	0.021319	21632	2760.2	312.369	14608.38336	-0.1755
1984	1731.5	10.9164	0.02683	28002.5	3085.6	333.786	13631.06464	9.0473
1985	1677.5	13.1506	0.024705	16066.8	3403.9	369.843	16160.50129	20.4665
1986	1876.1	11.5957	0.027925	27052	3910.3	386.099	16841.10982	-11.8238
1987	2092.2	11.0548	0.023949	29349.6	4837.2	418.98	17853.25169	-4.6647
1988	2317.4	11.8146	0.024205	38447.7	5388.1	447.352	18572.16942	6.8730
1989	2371	13.1204	0.02375	27202.4	6491.4	484.674	19529.4155	11.0524
1990	2159.21	13.777	0.019352	24516.1	7257.3	495.568	20873.71101	5.0044
1991	2053.4	19.9762	0.020825	19684.3	17381.9	489.695	23813.39598	44.9967
1992	1682.2	20.3863	0.016665	16754.5	17734.4	528.482	25794.1973	2.0529
1993	2205.7	21.3473	0.031701	29026.6	18778.5	692.393	33088.07973	4.7140
1994	3076.5	22.6908	0.042864	31468.9	25722.2	996.981	35144.3457	6.2935
1995	3878.59	26.0571	0.062923	35957.6	27731.5	1132.73	42037.14772	14.8355
1996	4723.29	23.7123	0.06311	40856.4	27088	1382.87	47064.73352	-8.9987
1997	5358.94	23.0833	0.070848	43065	26509.6	1452.5	51440.8893	-2.6526
1998	5292.23	23.1074	0.080283	42820.9	27916.9	1515.55	55628.10432	0.1044
1999	5528.89	25.5091	0.085928	44833.9	31566	1702.73	72932.1447	10.3936
2000	6130.57	25.9923	0.083393	44195.5	44647.5	1625.74	65986.22624	1.8942
2001	7451.47	23.1921	0.081588	50811.5	46268.8	2181.96	67351.00723	-10.7732
2002	7926	22.9087	0.091037	57784.3	52994.3	2700.81	65895.4514	-1.2220
2003	8243	26.9804	0.102415	52049.6	58281.5	3776.2	72702.72055	17.7736
2004	10906	27.6233	0.124604	70593.4	62187.9	4448.97	85800.03328	2.3828
2005	12265	30.592	0.156089	70718.5	52094.2	4876.6	105415.0197	10.7471
2006	14159	33.9021	0.175293	83153	52338.6	6385.31	130333.6837	10.8201
2007	17354	39.0222	0.179485	81345.9	20214.7	7631.08	170280.4053	15.1026
2008	23801	60.5786	0.22303	91085.7	25455	10011.8	245836.2772	55.2414
2009	28997	62.2183	0.263639	100693	34451.4	12760.7	332060.1067	2.7067
2010	43315	66.7736	0.322407	123118	71799.7	16870	379134.7593	7.3215
2011	58980.8	92.177	0.366277	165380	125449	23345.2	515078.5	38.0441
2012	85739.9	111.361	0.475956	207608	152631	29769.3	747326.5	20.8121
2013	107010	119.591	0.444882	210908	185315	34645.5	866921.1	7.3904
2014	133118	129.713	0.516821	259290	265593	42515.3	1060814.4	8.4638

Descriptive Summary of variables

Variable	*Mean*	*Median*	*Maximum*	*Minimum*	*Std. Dev.*
Total Tax Revenue	21534.39	5325.585	156162	1298.2	38602.63
Tax Revenue share of GDP	10.57444	10.875	12.71	6.52	1.619597
Investment	70660.45	42942.95	293896	16066.8	70702.04
Investment share of GDP	90.70611	82.47	207.02	23.76	53.2084
Total Expenditure on Education	7630.236	1484.025	57290.6	200.616	13478.63
Education share of GDP	39.66028	32.01	80.42	10.35	22.93367
Total Public Debt	52601.86	26798.8	380647	1488.5	79654.61
Public Debt to GDP	3.183889	2.77	5.19	1.64	1.083535
Current GDP	186404.6	53534.5	1236678	12238.89	311590.4
Inflation rate	8.904367	6.58325	55.2414	-11.8238	13.86183
Level of Trade Openness	0.1362	0.07555	0.5653	0.0167	0.157866

Appendix Two
Stationarity Test/ Unit Root Test Result for Variables
Augmented Dickey-Fuller test statistic

1. Tax Revenue Share to GDP in Percent

Null Hypothesis: tax share to GDP has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.517794	0.1203
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: tax share to GDP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.574230	0.2935
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: tax share to GDP has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.035804	0.6640
Test critical values:	1% level	-2.632688	
	5% level	-1.950687	
	10% level	-1.611059	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(tax share to GDP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.417283	0.0001
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(tax share to GDP) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.384178	0.0006
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(tax share to GDP) has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.492507	0.0000
Test critical values:	1% level	-2.634731	
	5% level	-1.951000	
	10% level	-1.610907	

*MacKinnon (1996) one-sided p-values.

2. Inflation Rate

Null Hypothesis: Inflation rate has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.403664	0.0001
Test critical values:	1% level	-3.632900	
	5% level	-2.948404	
	10% level	-2.612874	

*MacKinnon (1996) one-sided p-values.

3. Trade Openness

Null Hypothesis: Trade Openness has a unit root
Exogenous: Constant
Lag Length: 9 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		3.100713	1.0000
Test critical values:	1% level	-3.711457	
	5% level	-2.981038	
	10% level	-2.629906	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: Trade Openness has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 9 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		2.311524	1.0000
Test critical values:	1% level	-4.356068	
	5% level	-3.595026	
	10% level	-3.233456	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: Trade Openness has a unit root
Exogenous: None
Lag Length: 8 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		2.670230	0.9972
Test critical values:	1% level	-2.653401	
	5% level	-1.953858	
	10% level	-1.609571	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(Trade Openness) has a unit root
Exogenous: Constant
Lag Length: 9 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.209835	0.9973
Test critical values:	1% level	-3.724070	
	5% level	-2.986225	
	10% level	-2.632604	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(Trade Openness) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.628138	0.0000
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*MacKinnon (1996) one-sided p-values.

4. Investment To GDP

Null Hypothesis: Investment share to GDP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.735533	0.4052
Test critical values:	1% level	-3.632900	
	5% level	-2.948404	
	10% level	-2.612874	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: Investment share to GDP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.155035	0.1109
Test critical values:	1% level	-4.262735	
	5% level	-3.552973	
	10% level	-3.209642	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: Investment share to GDP has a unit root
Exogenous: None
Lag Length: 4 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.875302	0.0055
Test critical values:	1% level	-2.641672	
	5% level	-1.952066	
	10% level	-1.610400	

*MacKinnon (1996) one-sided p-values.

5. Education Share of GDP

Null Hypothesis: Education share of GDP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.722418	0.4116
Test critical values:	1% level	-3.632900	
	5% level	-2.948404	
	10% level	-2.612874	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: Education share of GDP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.654681	0.7498
Test critical values:	1% level	-4.243644	
	5% level	-3.544284	
	10% level	-3.204699	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: Education share of GDP has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.599298	0.4505
Test critical values:	1% level	-2.632688	
	5% level	-1.950687	
	10% level	-1.611059	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(Education share of GDP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.163875	0.0002
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(Education share of GDP) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.197268	0.0009
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(Education share of GDP) has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.236212	0.0000
Test critical values:	1% level	-2.634731	
	5% level	-1.951000	
	10% level	-1.610907	

*MacKinnon (1996) one-sided p-values.

6. Current GDP

Null Hypothesis: Current GDP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		11.35329	1.0000
Test critical values:	1% level	-3.632900	
	5% level	-2.948404	
	10% level	-2.612874	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: Current GDP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		6.873709	1.0000
Test critical values:	1% level	-4.243644	
	5% level	-3.544284	
	10% level	-3.204699	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: Current GDP has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		13.67048	1.0000
Test critical values:	1% level	-2.632688	
	5% level	-1.950687	
	10% level	-1.611059	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(Current GDP) has a unit root
Exogenous: Constant
Lag Length: 6 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.629442	0.4548
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(Current GDP) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 6 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.582076	0.7744
Test critical values:	1% level	-4.323979	
	5% level	-3.580623	
	10% level	-3.225334	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(Current GDP) has a unit root
Exogenous: None
Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		2.073105	0.9892
Test critical values:	1% level	-2.639210	
	5% level	-1.951687	
	10% level	-1.610579	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(Current GDP,2) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.630101	0.0000
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

*MacKinnon (1996) one-sided p-values.

7. Debt share of GDP

Null Hypothesis: Debt share of GDP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.146649	0.6860
Test critical values:	1% level	-3.632900	
	5% level	-2.948404	
	10% level	-2.612874	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: Debt share of GDP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.934225	0.1650
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: Debt share of GDP has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.833614	0.8868
Test critical values:	1% level	-2.632688	
	5% level	-1.950687	
	10% level	-1.611059	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(Debt share of GDP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.249523	0.0021
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(Debt share of GDP) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.157744	0.0126
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*MacKinnon (1996) one-sided p-values.

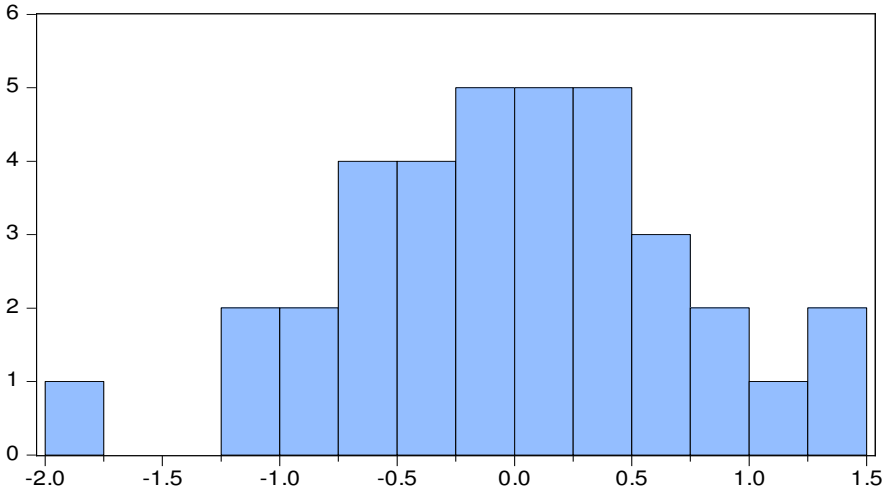
Null Hypothesis: D(Debt share of GDP) has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.154797	0.0001
Test critical values:	1% level	-2.634731	
	5% level	-1.951000	
	10% level	-1.610907	

*MacKinnon (1996) one-sided p-values.

Appendix Two
Classical Linear Regression Diagnostic Testing

1. Bera-Jaque Test for Normality



Series: Residuals
Sample 1980 2015
Observations 36

Mean	2.71e-16
Median	0.006810
Maximum	1.452785
Minimum	-1.948675
Std. Dev.	0.736397
Skewness	-0.227423
Kurtosis	3.227874
Jarque-Bera	0.388217
Probability	0.823568

2. Heteroskedasticity Test

A. Heteroskedasticity Test: White

F-statistic	2.865181	Prob. F(21,14)	0.0237
Obs*R-squared	29.20469	Prob. Chi-Square(21)	0.1092
Scaled explained SS	19.81406	Prob. Chi-Square(21)	0.5331

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 01/08/18 Time: 19:57
Sample: 1980 2015
Included observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.478832	1.149900	1.286053	0.2193
INFLATIONRATE^2	0.000506	0.000549	0.921366	0.3725
INFLATIONRATE*OPENESS	-5.624103	1.980038	-2.840401	0.0131
INFLATIONRATE*INVESTMENT_TOGDP	-0.000644	0.000504	-1.278170	0.2220
INFLATIONRATE*EDUCATION_TOGDP	-0.003927	0.000803	-4.887111	0.0002
INFLATIONRATE*NOMINALGDP	2.45E-06	1.11E-06	2.216543	0.0437
INFLATIONRATE*SEDEBT_GDP	0.172473	0.051700	3.336050	0.0049
OPENESS^2	-464.3901	313.4269	-1.481653	0.1606
OPENESS*INVESTMENT_TOGDP	0.256768	0.507511	0.505936	0.6208
OPENESS*EDUCATION_TOGDP	-0.325218	0.916388	-0.354891	0.7280
OPENESS*NOMINALGDP	0.000559	0.000301	1.856143	0.0846
OPENESS*SEDEBT_GDP	18.15988	21.22066	0.855764	0.4065
INVESTMENT_TOGDP^2	-1.33E-05	7.29E-05	-0.182431	0.8579
INVESTMENT_TOGDP*EDUCATION_TOGDP	0.001383	0.000592	2.335257	0.0349

INVESTMENT_TOGDP*NOMINALGDP	-9.75E-07	5.89E-07	-1.655515	0.1201
INVESTMENT_TOGDP*SEDEBT_GDP	-0.010664	0.013268	-0.803736	0.4350
EDUCATION_TOGDP^2	-0.001047	0.000450	-2.324164	0.0357
EDUCATION_TOGDP*NOMINALGDP	1.04E-06	8.32E-07	1.249608	0.2319
EDUCATION_TOGDP*SEDEBT_GDP	-0.006109	0.023023	-0.265329	0.7946
NOMINALGDP^2	-1.64E-10	7.49E-11	-2.195375	0.0455
NOMINALGDP*SEDEBT_GDP	-8.77E-06	8.84E-06	-0.991523	0.3383
SEDEBT_GDP^2	-0.079745	0.440839	-0.180893	0.8590

R-squared	0.811241	Mean dependent var	0.651337
Adjusted R-squared	0.528104	S.D. dependent var	0.923379
S.E. of regression	0.634313	Akaike info criterion	2.205211
Sum squared resid	5.632935	Schwarz criterion	3.172917
Log likelihood	-17.69380	Hannan-Quinn criter.	2.542966
F-statistic	2.865181	Durbin-Watson stat	2.249769
Prob(F-statistic)	0.023673		

B. Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.541258	Prob. F(6,29)	0.2002
Obs*R-squared	8.704132	Prob. Chi-Square(6)	0.1909
Scaled explained SS	6.291831	Prob. Chi-Square(6)	0.3913

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 01/08/18 Time: 20:07
Sample: 1980 2015
Included observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.810856	0.969267	2.899983	0.0070
INFLATIONRATE	-0.006378	0.010182	-0.626437	0.5359
OPENESS	-11.04041	6.544115	-1.687075	0.1023
INVESTMENT_TOGDP	-0.012253	0.005072	-2.415659	0.0222
EDUCATION_TOGDP	-0.006970	0.008827	-0.789665	0.4361
NOMINALGDP	3.73E-06	2.50E-06	1.492351	0.1464
SEDEBT_GDP	-0.009546	0.242756	-0.039322	0.9689

R-squared	0.241781	Mean dependent var	0.527218
Adjusted R-squared	0.084909	S.D. dependent var	0.798091
S.E. of regression	0.763458	Akaike info criterion	2.470747
Sum squared resid	16.90315	Schwarz criterion	2.778654
Log likelihood	-37.47345	Hannan-Quinn criter.	2.578215
F-statistic	1.541258	Durbin-Watson stat	1.828931
Prob(F-statistic)	0.200155		

3. Autocorrelation Test Result

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.678595	Prob. F(2,27)	0.5158
Obs*R-squared	1.722980	Prob. Chi-Square(2)	0.4225

Test Equation:
Dependent Variable: RESID
Method: Least Squares

Date: 01/08/18 Time: 23:22
Sample: 1980 2015
Included observations: 36
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INFLATIONRATE	0.000887	0.010941	0.081073	0.9360
OPENESS	-0.009590	7.169775	-0.001338	0.9989
INVESTMENT_TOGDP	-0.000572	0.005459	-0.104793	0.9173
EDUCATION_TOGDP	-0.000350	0.009469	-0.036990	0.9708
NOMINALGDP	-1.03E-07	2.77E-06	-0.037361	0.9705
SEDEBT_GDP	-0.007705	0.263830	-0.029204	0.9769
C	0.099433	1.044105	0.095232	0.9248
RESID(-1)	0.225704	0.199382	1.132016	0.2676
RESID(-2)	-0.094243	0.202324	-0.465805	0.6451

R-squared	0.047861	Mean dependent var	2.71E-16
Adjusted R-squared	-0.234255	S.D. dependent var	0.736397
S.E. of regression	0.818116	Akaike info criterion	2.648692
Sum squared resid	18.07146	Schwarz criterion	3.044572
Log likelihood	-38.67645	Hannan-Quinn criter.	2.786865
F-statistic	0.169649	Durbin-Watson stat	1.987481
Prob(F-statistic)	0.993249		

CHAPTER ONE
INTRODUCTION

The major objective of the study is to identify determinants of tax revenue in Ethiopia by using both primary and secondary data with the aid of multiple variables regression model. It also aims at determining the challenges, which hamper the proper collection of adequate tax revenue by the Ethiopian government. With this regards, the study is important to identify significant variables affecting tax revenue collection in the country. In doing this, the study is presented in five major parts. The first chapter presents the introductory chapter of the study. The chapter is organized in six sub-sections. The first sub-section provides the background information on the research topic while the second sub-section states the problem statement. In addition, the subsequent sub-sections discuss objectives of the study, significance of the study, and scope and limitation of the study. The detail is presented as follows.

1.1. Background of the Study

The major aim of governments in most parts of the world is to stimulate and guide their economic and social development and meet the increasing public demands. These governments continue to reach out for the goal of government promoted and directed development (Wawire, 2011). However, most of the developing countries face difficulty in generating sufficient revenue for meeting public purposes. Low per capita incomes, subsistent agriculture economy, poorly structured tax systems and weak tax and custom administrations contribute to difficulties in raising tax revenues (Tesfaye, 2015). In Sub-Saharan Africa, public sector budgets that are chronically short of funds and unproductive use of public expenditure have limited the critical investment in both human resources and capital infrastructure that are necessary for providing a basis for sustainable economic growth (International Monetary Fund (IMF), 2011).

According to Bird (2008), considerable effort and attention in most African countries is devoted to policies best suited to the promotion of economic development, where the major focus of these efforts is the search for desirable fiscal policies with considerable stress being placed on the role of taxation as an instrument of economic development. Taxation policy has always been an important instrument for augmenting revenue. However, this does not seem true in Sub-Saharan African countries as in developed countries, where tax revenue is the major source of domestic

revenue (Bird, 2008). In most of these countries revenue from tax contributes, an amount not more than 10-15 percent compared with the possible tax revenue might have been collected.

It is recognized that the primary function of a tax system is to raise enough revenue to finance essential expenditures on the goods and services provided by government (Tesfaye, 2015). According to Gubta (2007) and Keen & Simone (2004) if a country wants to develop, it requires collecting tax revenue adequately. He further added that taxation is one of the best instruments to boost the potential for public sector performance, to finance the social insurance program and for the repayment of public debt. A country's revenue generation primarily depends upon its sufficient capacity to tax more in both economic and administrative term.

The National Planning commission report (2016) indicates that in recent years Ethiopia has registered some encouraging result through improving tax administration system, increasing domestic resource mobilization through tax revenue generation and financing development from domestic revenue sources. Hence, total domestic revenue increased from Birr 53.9 Billion in 2009/10 to Birr 186.6 Billion in 2014/15. In 2014/15, tax revenue accounted for 88.4% of the total domestic revenue collected, while the remaining was collected from non-tax revenue sources. The average growth rate of tax revenue over the period 2009/10 to 2014/15 is 31% per annum. The increased tax performance has enabled the country to finance its development strategies including different projects from domestic revenue sources.

Although tax revenue has increased rapidly over the last five years, the increase was not commensurate with the growth of nominal GDP. The target was to collect tax revenues that amount to 15% of GDP by 2015, which itself was still lower than the average tax/GDP ratio for Sub-Saharan African countries. Thus, the reasons, which are responsible for lower tax revenue generation in the country, need to be identified. Besides, the major determinants of tax revenue in the country should be identified in order to enable the government strengthen its tax system and address the key challenges to ensure the collection of the potential revenue that the rapidly growing economy offers.

This paper therefore, looks at the main determinants of tax revenue performances of the central government, and analyze the extent to which current GDP, share of investment in GDP, and share of education in GDP, trade openness (import and export of goods and services (% GDP)), inflation consumer prices (annual %), debt to GDP ratio affect Ethiopian government tax revenue performances. In order to do this, the study has undertakes time data analysis to estimate revenue

potential for Ethiopia during 1980-2015 following the empirical methodology suggested by Bird, Vazquez, and Torgler (2004) and Gupta (2007).

1.2. Statement of the Problem

The economic resource available to society are limited and so increase in government expenditure, then government needs to raise revenue to meet its fiscal responsibility. However, reductions of tax cause a substantial decline in revenue of the government. The reduction in revenue is worsening the budgetary deficit. Thus, tax reduction needs to be coordinated with fiscal reforms. The general advice of international institutions such as the International Monetary Fund and World Bank given the developing countries over the past few decades has been to replace foreign trade tax (import tariff revenue) with domestic consumption tax, particularly with value-added tax (VAT) and to maintain relatively high corporate income tax rates (Delessa, 2014).

Tax is the main component of government revenue that will use to finance all the government expenditure to stabilize the economy. The expenditure here means the used of government's revenue for the development and operational expenditure that will bring an economic growth. Taxation in developing countries is a challenging topic and has attracted increasing attention in the last two decades (Tesfaye, 2015). Several problems observed such as poor administration, failing to collect sufficient tax revenues, tax structures where tax horizontal and vertical equity considerations are not integrated, lack of government and economic stability. In many least developing countries of Africa, it is observed that there is low capacity of tax administration to monitor compliance among taxpayers (United Nations, 2014).

With this regards, various researches have tried to look into the context and factors which affects the tax revenue performance of governments of African countries. Among these researches, Teera (2003); Weiss (1969); Tanzi and Zee (2000) and Imam and Jacobs (2007) have tried to investigate the determinants of tax revenue performances in different African countries. Jacobs & Imam (2007), explain that real per capita income, share of agriculture in GDP, trade openness, inflation and corruption are the most important determinants of a tax collection. Besides, Gupta (2007) finds that several structural factors like per capita GDP, share of agriculture in GDP, trade openness foreign aid, foreign debt and some new institutional variable like corruption and political stability are statistically significant and strong determinants of revenue performance. In

determining the variables that determine tax revenue, this study has identified them from the review of existing literature.

Ethiopia, similar with other least developing countries, faces problems in increasing revenue collection to the level needed for the economic growth. Hence, the country has been showed a consistent excess of expenditure over revenue for many years. The general government deficit out of the GDP is 2.5% in 2014/15 and 3% in 2015/16. This budget deficit was largely financed from external loan and grants as well as through domestic bank borrowing (Ministry of Finance and Economic Cooperation, 2015). To tackle this problem, the government has endorsed various tax and tax administration reforms (Tesfaye, 2015). However, reforming the tax system could not still brings the required result due to a number of challenges that the tax system faces and the actual amount of tax could not be collected properly (Tadele, 2010). Therefore, it is very important to study the major determinants and factors that affect tax revenue of the country in order to increase government revenue and assure economic stability. However, as to the knowledge of the researcher, very few research works are conducted on the topic in Ethiopian context. The existing literature on the topic shows that there are few researches (Tesfaye, 2015 and Anware, 2014) conducted to determine the factors that affects the tax-revenue performance.

Specifically, in the country, Belay (2016), Tesfaye (2015) and Anwar (2014) have attempted to identify determinants of tax revenue in the country. These studies found out that share of agriculture to GDP, share of service to GDP, trade openness and foreign aid were the determinant factors of tax revenue in the country. In light of these studies, however, there were other key factors, which these studies skipped over and did not consider. These variables include total government spending on general education, total investment contribution to the GDP and inflation rate. It is confirmed in the study conducted by different organizations and scholar (Organization for Economic Cooperation and Development, 2014; Aloo, 2012; Wawire, 2011 and Gupta, 2007) that total government spending on education, total investment contribution to the GDP, level of inflation rate, level of trade openness, GDP growth, country's total debt level to GDP are the major determinant factors of a country's tax revenue performance. Hence, this study has considered these six variables as explanatory variable of tax revenue and looked into the relationship between the dependent variable and explanatory variables.

In addition, the existing literature in Ethiopia show that the study conducted to determine the factors, which affect the tax revenue performance and challenges of tax system are studied in separate foil. Existing literatures (Belay, 2016), Tesfaye, 2015 and Anwar, 2014) have investigated only the determinants of tax revenue while understating the study of the challenges of tax collection in the country. Hence, this study has investigated the challenges of tax revenue collection, and showed the ways they are solved. Furthermore, in taking time-series data, existing research works have taken only few years data in determining the determinants of tax revenue in the country. However, it is possible to consider additional time-period and looks into the patterns of the determinants of tax revenue in the country. Besides, the study has considered additional explanatory variables (total expenditure on education and total investment contribution to GDP), which are not considered by existing research works in Ethiopian context. To this effect, this study is undertaken to examine the major determinant factors of tax revenue performance and aimed at investigating the major challenges of tax revenue collection in the country. In general, the above-mentioned problems together with the knowledge gap existing in the topic (as there are no prior researches conducted to test the theoretical relationship between tax revenue and inflation rate, investment share of GDP, total education expenditure share of GDP). The detail about the knowledge gap is shown in chapter two of the study. In general, these research gaps have necessitated this study to examine the determinants and the challenges of tax revenue performance in Ethiopia.

1.3. Research Question

The study has addressed the following research question in addition to the hypotheses formulated in section 1.5 of this chapter.

1) What are the major challenges faced in collecting tax revenue by Ethiopian Revenue and Custom Authority?

1.4. Research Objectives

1.4.1. General Objective of the Study

The general objective of the study was to examine the determinants and challenges of tax revenue performance in Ethiopia. More to the point, based on this broad objective the study has also formulated the following specific objectives of the research.

1.4.2. Specific Objectives of the Study

The followings are the specific objectives of the study

- To analyze the effect of economic growth on the tax revenue performance in Ethiopia;
- To examine the effects of investment on tax revenue performance of the country;
- To analyze the effects of total expenditure on general education on tax revenue performance of Ethiopia;
- To examine the effects of total country's debt level on tax revenue performance of Ethiopia;
- To examine the effects of degree of trade openness on tax revenue performance in Ethiopia;
- To analyze the effects of inflation rate on tax revenue performance in the country; and
- To identify the major challenges of tax revenue collection in Ethiopia Revenue and Custom Authority;

1.5. Hypotheses of the Study

The followings are the specifics research hypotheses, which the study aims to prove using statistical significance tests.

1. H1: Economic growth positively and significantly affects the tax revenue performance of Ethiopia.
2. H1: There is a significant and positive the effects of total investment contribution to GDP on tax revenue performance of the country
3. H1: There is significant and positive the effects of total expenditure on general education on tax revenue of Ethiopia.
4. H1: There is a significant and negative the effects of total debt level on tax revenue performance of Ethiopia.
5. H1: Trade openness significantly and positively affects the tax revenue performance of Ethiopia; and
6. H1: Inflation rate negatively affects tax revenue performance of the country.

1.6. Significance of the Study

The study helps policy makers to be able to understand the determinants of tax revenue performance in Ethiopia. In relation to this, the findings and recommendations of the study help concerned government stakeholders to take necessary corrective measures if there is anything to be in place. Mainly, Ethiopian Revenue and Custom Authority (ERCA), Ministry of Finance and Economic Cooperation, National Planning Commission and other concerned organs can be benefited from the findings of the study for increasing the tax collection performance and future policy inputs. Furthermore, other fellow researchers can use this research as an input to enagege into further inquires into the details of determinants of tax revenue in the country. Finally, the study can be the first step for future research engagement of the researcher.

1.7. Scope of the study

The study has focused on examining the determinants of tax revenue in Ethiopia by considering six independent variables against the tax collection for the past 36 years. The study used macro variable data for the time series ranging from 1980-2015.

In the study, six variables are considered as explanatory variable of tax revenue performance. The variables, which prior researches considered in Ethiopian case, were not included in this study to reduce the level of redundancy and duplication of works. These variables are economic growth as measured by GDP growth, total investment share to GDP, total expenditure on general education share to GDP, total debt level, degree of trade openness, and inflation rate.

1.8. Limitation of the Study

In the course of carrying out the study, the following major limitations were encountered

1. Difficulty in getting access to statistical data from government offices was the major challenge encountered in the due course of doing the research. The researcher was in difficulty to access important statistical data and financial reports because of confidentiality issues.
2. Besides, there were few prior studies conducted on the topic in Ethiopian context and this posed challenges in getting an outline for the study.

In addition to these, there were also other minor problems emerged in course of doing the research however; the researcher has done his best to overcome those aforementioned challenges and problems and completed the study in a full-fledged manner.

1.9. Organization of the Thesis

The study is presented in five chapters. The First chapter deals with introductory part of the paper including background of the study, statement of the problems, objectives of the study, research questions, significance of the study, and other sub-sections. The second chapter reviews related and relevant literature. In the third chapter, the research methodology and design including the research approach, the source, and techniques of data collection, model specification, and method of analysis is explained. Subsequently, the fourth chapter discusses the results and analysis of the findings of the study. Finally, the fifth chapter presents the conclusions and recommendations based on findings.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Introduction

This chapter reviews related literature on the determinants of tax revenue and presents the synthesis thoroughly. The review is structured in three sections. The first section presents theoretical review, which is followed by a review of empirical studies in section two. The third section illustrates the hypotheses formulated in line with the theoretical and empirical literatures. Finally, the fourth section presents concluding remarks and tells the research gap.

2.2. Review of Theoretical Literature

2.2.1. Theoretical Views on Taxation

Countries have very different philosophies about taxation and very different methods of collecting their revenue. Castles et al (1990) and Agell, et al (1997) argue that the different uses of total government expenditure affect growth differently and a similar argument applies to the way tax revenue is raised. During the past decades, some countries have increased taxation quite dramatically, while in other countries tax rates have remained roughly the same.

In theory, there are three main hypotheses on the causal relationship between government expenditure and revenues. The first of these is the fiscal synchronization hypothesis where government expenditure and government revenues are said to be determined simultaneously. According to Vamvoukas (1997), this hypothesis suggests that there is a feedback causal relationship between expenditure and revenue. In this hypothesis, the public is said to determine the levels of government spending and taxation by weighing the benefits of government services to their costs. Meltzer and Richard (1991) have advanced arguments in favor of this theory for the United States of America.

The second hypothesis is mainly known as the tax-and-spend hypothesis. This approach stresses that any expenditure budget must be expanded in line with taxation that is when tax revenue increase for the government then the government spending is rise and therefore that expenditure must follow revenue. Thus, the amount of tax revenues available determines the level of government spending. The view here is that if taxes are raised they propel a growth in government spending. Friedman (1982) suggests cutting taxes as a remedy to budget deficits,

since taxes have a positive causal impact on government expenditure. According to Friedman, a cut in tax leads to higher deficits, which should influence government to reduce its level of spending.

Buchanan and Wagner (1978) share the same view that taxes lead government expenditure but that the causal relationship is negative. Their point of view is that with a cut in taxes the public perceive that the cost of government programs has fallen. As a result they are demand more programs from the government which if undertaken result in an increase in government spending. Higher budget deficits is then be realized since tax revenue is decline and government spending is increase. Their remedy for budget deficits is therefore an increase in taxes.

The third hypothesis is that government spending actually leads revenue. Advanced by Peacock and Wiseman (1961) and others like Barro (1979), this view is based on their observation that any large-scale exogenous disturbances like wars and other unstable political conditions or natural disasters, induce an increase in government spending and therefore an increase in tax revenues. The solution suggested here to problems of budget deficits is that government spending should be reduced. Empirical work to support this hypothesis has been done in the case of United States of America (USA) by Jones and Joulfani (1991). They examine this relationship for the period 1792 to 1860. Their data support the spend-and-tax hypothesis in the short run and that in the end there exist a bi-directional causality between taxes and expenditure. Vamvoukas (1997) also finds that the spend-and-tax hypothesis exists in the case of Greece in the short run while in the end his study seems to support the fiscal synchronization hypothesis.

Fiscal policy is the use of government expenditure and revenue collection to influence the economy. Fiscal policy can be contrasted with the other main type of macroeconomic policy, monetary policy, which attempts to stabilize the economy by controlling interest rates and the money supply. The two main instruments of fiscal policy are government expenditure and taxation.

Fiscal policy is the means by which a government adjusts its spending levels and tax rates to monitor and influence a nation's economy. It is the sister strategy to monetary policy through which a central bank influences a nation's money supply. In other words, Fiscal policy refers to the use of the government budget to influence the Economic activity, Economic effects of fiscal

policy and fiscal straitjacket[1]. These three possible stances of fiscal policy are neutral, expansionary, and contractionary. In most countries where government spending is fully funded by tax revenue and hence the overall has budget outcome has a neutral effect on the level of economic activity. An expansionary stance of fiscal policy involves government spending exceeding tax revenue. A contractionary fiscal policy occurs when government spending is lower than tax revenue. However, these definitions can be misleading because, even with no changes in spending or tax laws at all, cyclical fluctuations of the economy can result in cyclical fluctuations of tax revenues and of some types of government spending, altering the deficit situation; but these are not considered to be policy changes. Therefore, for purposes of the above definitions, "government's spending" and "tax revenue" are normally replaced by "cyclically adjusted government spending" and "cyclically adjusted tax revenue." Thus, for instance, a government budget that is balanced over the course of the business cycle is considered to represent a neutral fiscal policy stance.

Governments do spend money on a wide variety of things, from the military and police to services like education and healthcare, as well as transfer payments such as welfare benefits. This expenditure can be funded in a number of different ways, such as borrowing money from the population or from abroad, consumption of fiscal reserves and sale of fixed assets (e.g., land), benefit from printing money, etc. All of these except taxation are forms of deficit financing. Borrowing or fiscal deficit is often funded by issuing bonds, like treasury bills or consuls and gilt-edged securities. These pay interest, either for a fixed period or indefinitely. If the interest and capital repayments are too large, a nation may default on its debts, usually to foreign creditors. Consuming prior surpluses, a fiscal surplus is often saved for future use, and may be invested in local (same currency) financial instruments, until needed. When income from taxation or other sources falls during an economic slump, reserves allow spending to continue at the same rate without incurring additional debt. Thus, economic effects of fiscal policy can be seen when governments use fiscal policy to influence the level of aggregate demand in the economy, in an effort to achieve economic objectives of price stability, full employment, and economic growth.

[1] The concept of a fiscal straitjacket is a general economic principle that suggests strict constraints on government spending and public sector borrowing, to limit or regulate the budget deficit over a time period.

However, Keynesian economics suggests that increasing government spending and decreasing tax rates are the best ways to stimulate aggregate demand. It is normally used in times of recession or low economic activity as an essential tool for building the framework for strong economic growth and working towards full employment. Governments can use a budget surplus to do two things: to slow the pace of strong economic growth and to stabilize prices when inflation is too high. The Keynesian theorist posits that removing spending from the economy is reducing levels of aggregate demand and contracts the economy, thus stabilizing prices. Economists debate the effectiveness of fiscal stimulus. The argument mostly centers on crowding out, phenomena where government borrowing leads to higher interest rates that offset the simulative impact of spending. When the government runs a budget deficit, funds are need to come from public borrowing (the issue of government bonds), overseas borrowing, or monetizing the debt.

2.2.2. Principles of Taxation (Canons of Taxation)

The government requires funds for the performance of its various functions. These funds are raised through tax and non-tax sources of revenue. Imposing tax on income, property, etc. raises tax revenues. In fact, tax is the major source of revenue to the Government (Kabinga, 2016). No one likes taxes, but they are unavoidable in any civilized society. Whether taxpayers believe in big government or small government, governments must have some resources in order to perform their essential services. So how does one go about evaluating a particular tax? Taxation is an important instrument for the development of economy of the country. A good tax system ensures maximum social advantage without any hardship on taxpayers. While framing the tax policy, the government should consider not only its financial needs but also taxable capacity of the community (Organization for Economic Cooperation and Development, 2016). Besides the above, government has to consider some other principles like equality, simplicity, convenience etc. The following paragraphs will provide a summary of the major principles of taxation that many scholar and institutions endorsed. The summary is made based on the ideas of Organization for Economic Cooperation and Development (2016), Kabinga, 2016 and Hancock (1850).

1. Principle of Equality

This canon of taxation dictates that the given taxation system should be fair. Two of the most important principles of tax equity are the benefit principle and the ability to pay principle.

a. The Benefit Principle

Benefit principle was accepted by the political theorists of the 17th century. Taxation in those times was considered as a price for the services rendered by the state. The entire philosophy was based on the contract theory of the state. According to this principle, the state provides goods and services to the members of the society and they contribute to the cost of these supplies in proportion to the benefits received. It is an exchange relationship.

According to this principle, the burden of' taxation should be divided among the people in proportion to the benefits received from the state. The persons receiving equal benefits from the state should pay equal amount as taxes and those who receive greater benefits should pay more as taxes than those getting less benefits. The benefit approach is, in fact, a combination of two principles: the cost of service and the value of service principle.

According to cost of service principles, the taxes should be divided in proportion to the cost of services rendered by the state. As per value of service principle, every individual should contribute in proportion to the value of the services he has received from the government. In fact, both the principles come to the same conclusion that the cost of services rendered by the government should be recovered from individuals in proportion to the benefits received by each of them.

b. Ability to Pay Principle

Ability to pay is interpreted as the money income of the taxpayer. It is the most generally accepted theory. According to this theory, each person should contribute to the income of the state in proportion to his ability to pay. Ability is the "ideal ethical basis of taxation. Every taxpayer should feel that he has made equal sacrifice in the payment of tax. The concept of ability to pay depends upon the bold concept of equity in taxation. Equity implies just tax payment. When the taxpayer is required to pay tax according to his ability to pay, it may be called equity in tax payment. As Dalton puts it, "the burden of taxation should be so distributed that the direct real burden on all tax-payers is equal." According to Seligman, “the basic point of the ability to pay principle is that the burden of society should be shared amongst the members of the society so as to conform to the principle of justice and equity."

According to this principle, a citizen has to pay taxes because he can, and his relative share in the total tax burden is to be determined by his relative paying capacity. J .S Mill sharply rejected the

benefit approach, based on the concept of protection of life and property. He concluded that application of benefit rule would lead to regressive taxation, as poor are more in need of protection. A quite different principle of taxation is thus needed. This new principle i.e., the principle of ability to pay is based on the dictum that all should be treated equally under law. Equality in taxation means equality in sacrifice, which may be stated as the concept of equal sacrifice.

2. Principle of Economy

The next important canon of taxation is economy. According to Adam Smith, "every tax ought to be so contrived as both to take out and keep out of the pockets of the people as the little as possible over and above what it brings into the public treasury of the state". This principle states that the minimum possible amount should be spent on tax collection and the maximum part of the collection should be brought to the government treasury. Thus the canon of 'economy' is naturally sub-divided into two parts viz., Taxation should be inexpensive in collection', and Taxation should retard as little as possible the growth of wealth.

3. Principle of Certainty

Another important canon of taxation advocated by Adam Smith is certainty. According to him, "the tax which each individual is bound to pay ought to be certain and not arbitrary. The time of payment, the manner of payment, the quantity to be paid, should be clear and plain to the contributor and every other person."

4. Principle of Convenience

According to Adam smith, "every tax ought to be levied at the time or in the manner in which it is most likely to be convenient for the contributor to pay it." That is, the tax should be levied and collected in such a way that convenient for taxpayer. It includes the selection of suitable objects for taxation, and choice of convenient periods for requiring payment. The canon of convenience is a special form of the general principle that the public power should as far as possible adjust its proceedings to the habits of the community, and avoid any efforts to directing the conduct of the citizens in order to facilitate its own operations.

5. Principle of Productivity

According to this principle, the tax system should be productive enough i.e. it should ensure sufficient revenue to the Government and it should encourage productive activity by encouraging the people to work, save, and invest.

6. Principle of elasticity

The taxes should be flexible. It should be levied in such a way to increase or decrease the tax revenue depending upon the need.

7. Principle of Diversity

According to this principle, there should be diversity in the tax system of the country. The burden of the tax should be distributed widely on the entire people of the country. The burden of the tax should be decentralized so that everyone should pay according to his ability. To achieve this, the Government should impose both direct and indirect taxes of various types.

8. Expediency Principle

According to this principle, a tax should be levied after considering all favorable and unfavorable factors from different angles such as economical, political, and social. Generally, every government imposes tax to fulfill its normal social obligations in the form of defense, maintenance of law and order and socio-economic growth, but in actual practice, the tax policy is determined by the pressures, which are exerted on the government by different pressure groups in society. In practice, every legislature and every authority is pressurized by various economic, social, and political groups to orient its taxation policy in certain directions. Every group would try to resist a change that goes against its interests. The authorities, in many cases, have to adopt certain policies simply because there are pressures to that effect. The authorities must frequently reshape the tax structure depending upon the changing political strength of different economic groups.

It is also clear that while choosing and imposing a tax, the authorities would be making a great blunder if they lose sight of the administrative feasibility, the cost of collection, and so on. Therefore, when the government bends before the pressures of various pressure groups and formulates its tax policy accordingly, we call it the expediency principle.

9. Canon of Simplicity

This principle states that the tax system should be simple, easy, and understandable to the common person. If the tax system is complex and vague, the taxpayer cannot estimate his tax liability and it will cause irregularities in the payments and leads to corruption.

10. Canon of Co-ordination

In a federal set up like Ethiopia, Federal and State Governments levy taxes. Therefore, there should be a proper co-ordination between different taxes imposed by various authorities. Otherwise, it will affect the people adversely.

11. Canon of Neutrality

This principle stresses that the tax system should not have any adverse effect. That is, it should not create any deflationary or inflationary effects in the economy.

2.2.3. Determinants of Tax Revenue Performance

The determinants of tax revenue are enormous in number; the main and important variables as they are repeatedly used in different studies include the Economic growth (Real GDP), Inflation, Openness and Investment. Regarding the GDP, most of the studies concluded that the growth trend of an economy matter whether the tax revenue collected in one's country is larger enough or the reverse. With this regards, the following section presents the detail

2.2.3.1. Economic Growth

Economic growth, we mean expansion of the supply side of the economy and of potential Gross Domestic Product (GDP). This expansion could be an increase in the annual growth rate, a one-time increase in the size of the economy that does not affect the future growth rate but puts the economy on a higher growth path, or both. Our focus on the supply side of the economy in the long run is in contrast to the short-term phenomenon, also called "economic growth," by which a boost in aggregate demand, in a slack economy, can raise GDP and help align actual GDP with potential GDP. There is no doubt that tax policy can influence economic choices, it is by no means obvious, on an ex ante basis, that tax rate cuts will ultimately lead to a larger economy in the long run. While rate cuts would raise the after-tax return to working, saving, and investing, they would also raise the after-tax income people receive from their current level of activities, which lessens their need to work, save, and invest. The first effect normally raises economic activity (through so-called substitution effects), while the second effect normally reduces it (through so-called income effects. A country develops; tax bases are wider and grow more than the growth in income. A higher per capita income reflects a higher level of development, which implies a higher capacity to pay taxes as well as a greater capacity to levy and collect taxes (Chelliah, 1971).

2.2.3.2. Investment

Related with Investment, savings are a necessary condition for accumulation of capital, but not the sufficient one. In order to accumulate fixed capital, savings must turn into investments, which means that entrepreneurs must be ready to invest in capacity building. Taxes can influence the level and allocation of domestic investments. However, in the conditions of integration of international financial markets, domestic investments are not necessarily constrained with domestic savings. Thus, the measures stimulating the growth of domestic savings do not necessarily mean growth of domestic investments. Increased domestic savings can leave the country in search of investments with better return. In addition, tax incentives for increasing return on domestic investments can increase investing without increasing domestic savings if free foreign capital inflow is allowed. The impact of tax on investments depends not only on the rate, but also on other characteristics of the tax system. The depreciation rate and investment relieves are just a couple among these (Marina, 2010). Thus, investment exerts effect on tax revenues, which is channeled through its effect on the most important component of tax revenues, the taxes on goods and services. Similarly, the link establishes the critical importance of collecting tax where possible on economic profit in order to finance public expenditures that strengthen host country fundamentals and attract FDI. Perhaps the framework most widely used by public finance economists to analyze tax effects on domestic and cross-border direct investment is the neo-classical investment framework. A main attraction is its incorporation of main statutory tax parameters influencing capital costs and establishing the statutory tax burden on investment returns.

In particular, parameter-based marginal and average effective tax rates derived from the neo-classical investment model may be analyzed to determine the percentage change to these tax burden measures resulting from a single or package of corporate tax policy adjustments. When combined with empirical estimates of the sensitivity of FDI to these effective tax rates, the framework lends itself to estimating the long-run effects of corporate tax reform on FDI.

2.2.3.3. Education

On the side Education, Economic theory provides a foundation for this belief. Many papers in the endogenous growth literature have formalized a link between government education expenditures, human capital accumulation, and long-run economic growth. While theory assigns expenditures, a key role in growth empirical support of the link is mixed. As highlighted by

Blankenau and Simpson (2004), there is disconnect between theory and data can be reconciled by taking a closer look at the theory. In nearly every model where growth is fueled by government education expenditures, a non-monotonic relationship between expenditures and growth can arise. Spending increases growth while taxes may decrease growth, leaving the net effect ambiguous. Moreover, literacy is more than being able to keep records on books. It includes knowledge and usage of information technology. Taxes yield less revenue in less literate economies (Chaudhry and Munir, 2010).

2.2.3.4. Level of National Debt

The growth of public spending has generated large fiscal deficits in many countries, leading to increases in the share of public debt relative to GDP (Tanzi & Blejer 1988). With a large debt, the government needs to raise the revenues necessary to service it. When the interest on the debt exceeds net borrowing plus the possible reduction in non - interest expenditure, the level of taxation must go up unless the rate of growth of the economy is high enough to neutralize the increase. Therefore, public debt plays a role in determining the extent to which countries may take advantage of their taxable capacity. However, a high debt burden can also create macroeconomic imbalances that may tend to reduce the tax level. Servicing of a foreign debt requires a trade account surplus, which in turn may require a reduction in imports. This affects revenue given the high dependence of the tax system on the external sector (Tanzi, 1989). In general, however, on balance, a high debt burden would tend to raise the tax level, ceteris paribus (Tanzi, 1992). On the other hand, however, countries faced with an increased trade deficit may try to restrict imports as an alternative to exchange rate adjustment irrespective of the source of the trade imbalance. This will reduce revenue from import duties

2.2.3.5. Trade Openness

Trade openness degree measured as the share of international trade in GDP, and may have a significant impact on tax revenues. It could also be considered as an indicator of liberalization level of the economy. Certain features of international trade make it more amenable to taxation than domestic activities. In developing countries, the international trade sector is typically the most monetized sector of the economy. Entrance and exit to the country takes place in specified locations. Thus, import and export shares could be an important determinant of tax revenues.

Openness is a country volume of exports and imports expressed over its GDP. It shows how a country is opened to international trade and its impact on tax revenue performance. According to Seade (1990), the relative size of the overseas sector, which is a measure of openness, reflects the degree of exposure of an economy to external economic influences. Hence, in the presence of inward capital flows, the overall level of activity in the economy is increased artificially through foreign borrowing and so is the aggregate tax base. Consequently, tax revenues become artificially buoyant and volatile.

The country may choose to increase import tariffs or other taxes with a view to generate a primary budget surplus to service the debt. Debt has also been identified as a factor that may affect revenue performance. A key distinction appears to be whether the debt is used productively or simply to finance current consumption expenditures. Moreover, the composition debt has an important effect on revenue performance (Rodrik, 1998). Despite the efforts toward trade openness, many developing and emerging market economies however, continue to rely heavily on trade taxes as a source of government revenue. In Sub-Saharan Africa, for instance, trade taxes still account for an average of about one-quarter of all government revenues, and in the developing countries of Asia and the Pacific they account for around 15 percent (Simone, 2004).

In the early stages of liberalization, the revenue consequences of reform may be relatively minor. Indeed the first steps of trade policy reform often involving the reduction of prohibitively high tariffs, tariffication of quotas, elimination of exemptions, and raising of low tariff rates in moving towards a uniform tariff may plausibly lead to an increase in trade tax revenues (Ebrill, 1999).

There must come a point, however, at which further movement towards freer trade reduces trade tax revenues. The question then is whether such revenue losses can be recouped from the domestic tax system while maintaining the gains from the trade reform itself. In theory, it is easy to do so, most obviously by strengthening domestic indirect taxes, and there is now an extensive theoretical literature on how to do this. Keen & Ligthart (2001) show that for a small economy, a strategy of increasing domestic consumption taxes (slightly less than) one-for-one with tariff cuts has the attractive properties of leaving consumers better off (because the consumer price falls). It also preserves the production efficiency gain from the tariff reform, and increasing the government's revenue (since consumption is a wider tax base than imports) (Michael, 1993)

In principle, however, is not always easy in practice. In particular, the well-known relative administrative ease of collecting customs duties may mean that replacement from other sources requires significant reform of wider tax practices. Much of the revenue from a value added tax (VAT), for instance, is collected at the border (often half or more, in many developing countries) but implementation of the inland part rests on methods of self-assessment quite different from those commonly used to collect customs duties.

Theoretically, the influence of trade openness on imports and revenue performance is considered an indirect outcome. This indirect outcome is derived from the response of consumption and production decisions to price changes, of which the price changes are triggered by trade reforms. For example, a reduction in import tariffs is likely to influence imports and revenue performance depending on the elasticity of import demand and price elasticity of supply for import substitutes i.e. if the demand for imports is inelastic it's likely that import volumes and revenue performance is remain unchanged irrespective of the changes in import tariffs and prices. On the other hand, if the demand for imports is elastic it is possible that import volumes and revenue performance is increase owing to changes in import tariffs and prices. It has argued that the reduction or removal of barrier to free trade, such as import tax lowers import prices but also reduces an array of taxes charged at importation. The gains from removal of barriers to free trade are expected to increase domestic output using better-imported skills and technology. This in turn lowers import categories of imports but also increasing domestic productions and revenue performance.

2.2.3.6. Inflation

The link between the change in price levels (inflation), and its tax effects on profit levels and output were not specifically articulated in classical growth theories. However, the relationship between the two variables is implicitly suggested to be negative, as indicated by the education in firms' profit levels through higher wage. Taxes are a central feature of economic life but not of the growth models that different studies conducted the long-run effects of monetary and fiscal policies. Taxes in current monetary growth models are lump sum transfers that alter disposable income but do not directly affect factor rewards or the cost of capital. In contrast, the actual personal and corporate taxes do influence the cost of capital to firms and the net rate of return to savers. The existence of such taxes also in general changes the effect of inflation on the rate of interest and on the process of capital accumulation. Accordingly, neoclassical model of economic growth has direct relation with inflation and taxes.

2.3. Review of Empirical Literature

A number of empirical studies have attempted to identify the determinants of tax performance in both developed and developing countries, and several factors have been identified. These include; the general level of development (reflected in per capita income and levels of literacy, urbanization, communication, etc.), the administrative and political constraints on the fiscal system, social-political values, indigenous institutional arrangements, popular desires for government spending, plus other factors which condition overall willingness to pay taxes.

Ahmed and Mohammed (2010) attempted to search the determinants of tax buoyancy of 25 developing countries. Their study revealed that growth in import and manufacturing sector has positive impact on growth of tax collection. The effects of the agriculture is insignificant but unlike of the previous studies which found insignificant impact of service sector on tax buoyancy this study found positive and significant impact on tax buoyancy due to the development of service sector in 1990s. Monetary growth also influence positively on tax collection. Finally increase in budget deficit has positive influence on tax collection by demanding more resource mobilization from the governments, however, at the same time the growth in grants inversely influences on tax collection because government in developing countries avoids unpopular steps of imposing taxes for domestic resource mobilization.

Diego (2006) examined the effect of foreign direct investment (FDI) on tax revenue performance for a group of Latin American countries in the period 1980-2000. His study showed that FDI exerts a significant positive effect on central government tax revenues, which is channeled through its effect on the most important component of tax revenues, the taxes on goods and services. According to the researcher, this gives support to the economic policies enforced in Latin America for the last decades in order to spur economic growth. This is now empirically demonstrated that the larger flows of FDI into the region do not only contribute to improvements of real GDP per capita growth rates, but it also contributes to the better performance of a factor that perhaps is more relevant to domestic standards of living, from the perspective of the inhabitants of a country. The researcher has also concluded that the positive effect of FDI on tax revenues is especially important for less developed economies, as it is shown that its effect is even greater than the overall effect for these economies, but very small for the more developed countries.

Adam et al (2001) also examined the relationship between tax revenue, exchange rates, and trade openness in Sub-Saharan Africa and find that openness raises overall tax revenue in Franc zone countries while it has little effect in countries outside the zone. They concluded that the poor tax revenue performance in these countries in the 1970-96 period reflected mainly differences in environmental and structural factors and to different responses to changes in the equilibrium real exchange rate, but that misalignments of the exchange rate played a role.

Samuel (2015) has conducted a study on the relationship between trade openness and tax revenue performance in Uganda. The study showed that trade openness leads countries to have higher trade volumes and increase in tax revenue performance. The possible explanation for the positive result according to the researcher is that trade openness increases access to consumer goods, intermediate imports, and export markets, which combine to improve indirect taxes particularly VAT and Excise tax.

Botlhole (2010) used a panel of Sub-Saharan African countries over the period of 1990 to 2007 to see the factors affecting tax revenue. For that purpose, he used two stages least squares (2SLS) and generalized method of moments (GMM) for econometric and empirical analysis. Tax revenue was taken as the explained variable while national income, quality of institutions, foreign aid, and trade openness, ratio of urban population to total population, inflation, underground economy, share of agriculture, industry, and share of services in GDP were economic factors affecting the revenue in Sub-Saharan African countries. Factors that caused tax revenue to grow were trade openness and growth of agriculture sector while value added in industry and services were unfavorable indicators of tax revenue. At the same time, bad governance, political instability, corruption, narrow tax base and bad economic conditions such as unemployment and poverty were the elements, which were responsible for lower tax-to-GDP ratio in Sub-Saharan African countries. Final remarks of the research indicated that tax-to-GDP ratio could be improved by two major ways through more resources and income, secondly, by improving the performance of political, social, and economic institutions.

Chaudhry and Munir (2010) analyzed empirically the determinants of low tax revenue in Pakistan by employing time-series econometric techniques over the period 1973-2009. Their study investigated whether economic policies, external variables, and social indicators along with elements of tax base can account for part of the variation in the tax revenue performance in Pakistan. The empirical results suggested that openness, broad money, external debt, foreign aid,

and political stability are the significant determinants of tax efforts in Pakistan with expected signs. The results also indicated that the determinants of low tax revenue in Pakistan are narrow tax base, more dependence on agriculture sector, foreign aid, and low level of literacy rates. Finally, they have concluded that Pakistan economy can generate high tax to GDP ratio by boosting the openness, literacy level, political stability and broadening the tax base.

Tanzi (1989), considered the impact inflation and debt on tax revenue on developing countries. The result indicated that inflation and debt have positive effect on tax revenue performance. Clausing (2007), regression analysis showed that the share of the value added of the corporate sector, profit level GDP per-capita and GDP growth have a positive impact on revenues of tax.

James (2011) examined the determinants of tax revenue with evidence from Ghana using quarterly data from 1988 to 2008. The tax effort function is used by regressing government expenditure, real gross domestic product, and financial deepening on tax revenue. The study employed Auto Regressive Distributed Lag (ARDL) approach to cointegration. Results from the analysis showed that government expenditure is vital in generating tax revenue in the long run while it has a negative effect in the short run on tax revenue for the period selected for the study. It implied that government expenditure is a good policy instrument in raising tax revenue in the end. In addition, real gross domestic product exhibited a positive effect on tax revenue in the short run while it showed a negative impact on tax revenue in the end over the study period. Furthermore, the study revealed that, financial deepening had a negative impact on tax revenue when both the short run and long run dynamics were employed.

The study recommends that the government of Ghana increase government expenditure in the productive sectors that would affect positively on all forms of taxes that would ultimately lead to increase in tax revenue. In addition, the number of years of tax holidays and tax exemptions should be reduced to increase tax revenue that would enhance economic growth and development.

Ghura (1998) concluded in his paper “Government revenue in Sub-Saharan Africa: Effects of economic policy and corruption” that the tax ratio rises with income and degree of openness, and falls with the share of agriculture in GDP. He also finds that other factors like corruption, structural reforms, and human capital development affect the tax ratio. While a rise in corruption is linked with, a decline in tax ratio, structural reforms, and an increase in the level of human capital is associated with an increase in tax ratio.

Teera (2002), used time series data on Uganda to examine the determinants of tax revenue share in that country. He used the Augmented Dickey Fuller (ADF) and the Error Correction Model (ECM) and found that, there is a positive relationship between per capita income and total tax revenue as well as income taxes. This finding lends support to the hypothesis that, as countries develop tax bases develop more than proportionately to the growth in income.

Chelliah, (1971) also found that a higher per capita income reflecting a higher level of development is held to indicate a higher capacity to pay taxes as well as a greater capacity to levy and collect them. There is also the consideration that, as income grows countries generally become more urbanized. Urbanization thus brings about a greater demand for public services while at the same time facilitating tax collection.

Nwosa et al (2012) examined the impact of trade openness on tax revenue of trade for Nigerian economy. They used annual data from 1970 to 2009. Johnson Cointegration technique was applied for econometric and empirical findings. For empirical analysis, the study used several explanatory variables such as trade openness, exchange rate, external debt, and GDP and labor force participation rate. The explained variable was tax on trade. Findings of the study suggested that GDP, external debt, labor force and trade openness were positively related to trade tax revenue. However, exchange rate was inversely related to trade tax revenue. The study also suggested that Nigerian economy should adopt strong macro-economic policies to stimulate tax revenue and trade tax revenue.

Delessa (2014) conducted a study on Tax Reforms and Tax Revenues Performance in Ethiopia and the main the purpose of the study was to analyze and compare tax revenues performances of the two governments in power in Ethiopia during the last 39 years. Descriptive analysis is used to compare different categories of tax performance of the Derg and EPRDF regimes. In light of this, major tax categories of tax to GDP and total tax revenues ratios over the period of 1974/75 to 1912/13 (39 years) were computed and analyzed. In addition, comparison has been made between pre and post-tax reforms to compare tax system flexibility in terms of raising tax revenues during the EPRDF regime. The period after 2002/03 was considered as post comprehensive tax reforms years.

The researcher concluded that the comparison of two governments' different categories of tax ratios shows a slight increment from an average 3.77 percent to 9.95 during EPRDF period. Comparing pre and post-tax reforms during the period 1991/92 to 2012/13 the ratios of different

category tax revenues showing significant change for post comprehensive tax reform period. Comparing direct versus indirect tax categories, direct tax shows the tendency of declining contrary to the comprehensive tax reform main objective which gave due attention to increase the share of the direct tax to total revenues. The overall analysis of researcher reveals that tax reforms failed to boost total tax revenues and to bring tax structure change from indirect tax to direct tax.

Dasalegn (2014) conducted a research "The Role of Value Added Tax on Economic Growth of Ethiopia"; he attempted to analyze the role of VAT on economic growth of Ethiopia using the time series macro-economic data of GDP, VAT, total tax revenue excluding VAT, non-tax revenue, and foreign revenue from 2003 to 2012. The study employed descriptive statistics and multiple regressions to analyze the data. The finding of the study revealed that as compared to sales tax, VAT boosts the general economic growth of Ethiopia but the issue of regressively resembling to sales tax still continues. During the periods under review, the growth rate of VAT was 66.27% on average. For the periods of sales tax, the average growth rates of GDP were only 2.53%.

However, after executions of VAT, such growth rate reached about 21.9% on average. The analysis also showed as the average ratio of VAT to GDP becomes 2.95%. The finding also reveals that, VAT, total tax revenue, and non-tax revenue except foreign revenue were significant at 5% level of significance but all of them positively contributed for economic growth during the periods under review. However, to be effective, it requires strong administrations and cooperation's of the taxpayers with taxing authority and the government in general.

Workineh (2015) conducted study on tax revenue determinants in Ethiopia. According to his study, tax revenue in Ethiopia was below the average of sub Saharan African countries. The researcher attempted to examine the major determinants of tax revenue in Ethiopia for the period ranging from 1975-2013, using Johansen maximum likelihood co-integration approach. The result revealed that in the end real GDP per capita income, foreign aid and industrial value added share of GDP positively and significantly affect tax revenue. However, inflation exerted a negative and significant influence. Whereas, in the short run Real GDP per capita income and inflation have negative effect, whereas industrial Value added share of GDP has positive effect on tax revenue in Ethiopia.

Finally, the study recommends measures such as a boost in per capita income growth, structural transformations, introduction of new tax bases and efficient utilization of foreign aid inflow have to be considered by the concerned bodies to bring efficient tax administration and enhance revenue growth. Moreover, the government shall give a due recognition to the development of the industrial sector.

Anware (2014) conducted a study on determinants of tax revenue performances in Ethiopia for the time series data set that consists of 21 years. For the time period covered 1990/91 to 2010/11 with identifying six variable industry , agriculture, inflation, GDP per capital income, export and import he concluded that structural factors such as exports of goods and services (% of GDP) and import of goods and service (% of GDP) significantly affect tax revenue performance of Ethiopia. Alemayehu and Abebe (2005) conducted a study to investigate the tax performance of Ethiopia. The study used descriptive analysis and found that GDP, investment, and education have a positive relation with the tax revenue. Tadele (2013) investigated the determinants of tax buoyancy (the ratio of percentage change of tax revenue to percentage change of GDP) using descriptive analysis. The result shows the contribution tax to GDP increase across time.

2.4. Research Gaps and Concluding Remarks

The role of tax revenue is imperative in bringing economic development, where its working or efficiency is determined by different socio economic and political factors. Furthermore, the ability to generate adequate fiscal revenue is determined by different socio economic and political factors, which may have different effects on tax revenue either negatively or positively. Therefore, examining the effects of tax revenue on economic performance depends on identifying the factors affecting tax revenue. Therefore, the rationale understanding for low level of tax revenue poses remedial mechanisms to correct prevailing problems of tax revenue.

It is infrequent to find country-specific time series studies on the issue as most empirical studies performed to investigate the determinants of tax revenue rely largely on cross-sectional and panel data set. In panel data set, it is not easy to distinguish country-specific behavior of tax revenue determinants, and hence country-level time series analysis is more appealing. Moreover, the above studies pointed that, factors affecting tax revenue vary across countries, which necessitate the need for country level analysis of tax revenue. To the knowledge of the researcher, a study on the determinants tax revenue in Ethiopia is scant. Only a little has been dealt with the issue of tax revenue performance in Ethiopia.

Few studies in the literature like studies by Workneh (2015), Anwar (2014), Belay (2016), Tesfaye (2015), Alemayehu & Abebe (2005), and Tadele (2013) have attempted to investigate the determinants of tax performance of Ethiopia using different variables. Alemayehu & Abebe (2005) have studied the tax performance of Ethiopian government. However, they studied only the tax performance of Ethiopia across regimes, they did not try to show what specific factors contribute to the tax revenue generation of Ethiopia. On the other hand, Tadele (2013) investigated the determinants of tax buoyancy (the ratio of percentage change of tax revenue to percentage change of GDP); the study did not attempt to search for determinants that would affect tax revenue generation in Ethiopia. Belay (2016) and Tesfaye (2015) conducted a study to determine tax revenue performance in the country taking various variables. These studies incorporated sectoral variables like, agriculture value added share of GDP and industrial share of GDP. However, they did not include policy variables like inflation, investment contribution to GDP and total expenditure on general education and others. On the contrary, international organizations and scholars (Organization for Economic Cooperation and Development, 2014; Aloo, 2012; Wawire, 2011 and Gupta, 2007) states that these policy variables are essential to be considered in studies in determining tax revenue performance in Ethiopia. Therefore, it is invaluable to investigate the determinants of tax revenue in Ethiopia with a special emphasis on the effect of policy variables of the economy.

This study hence, considers itself as different from those studies previously conducted, in the sense that the econometrics procedure aiming at assessing the impact of the variables included in the model is different and at the same time, as of researcher's knowledge, it has been some years ago that the studies on the determinants of tax revenue have been conducted. Thus, this paper is in a position to update how the current trends of the economic variables are affecting each other. Moreover, the study tried to show the main challenges faced in tax collection focusing on Ethiopian Revenue and Custom Authority.

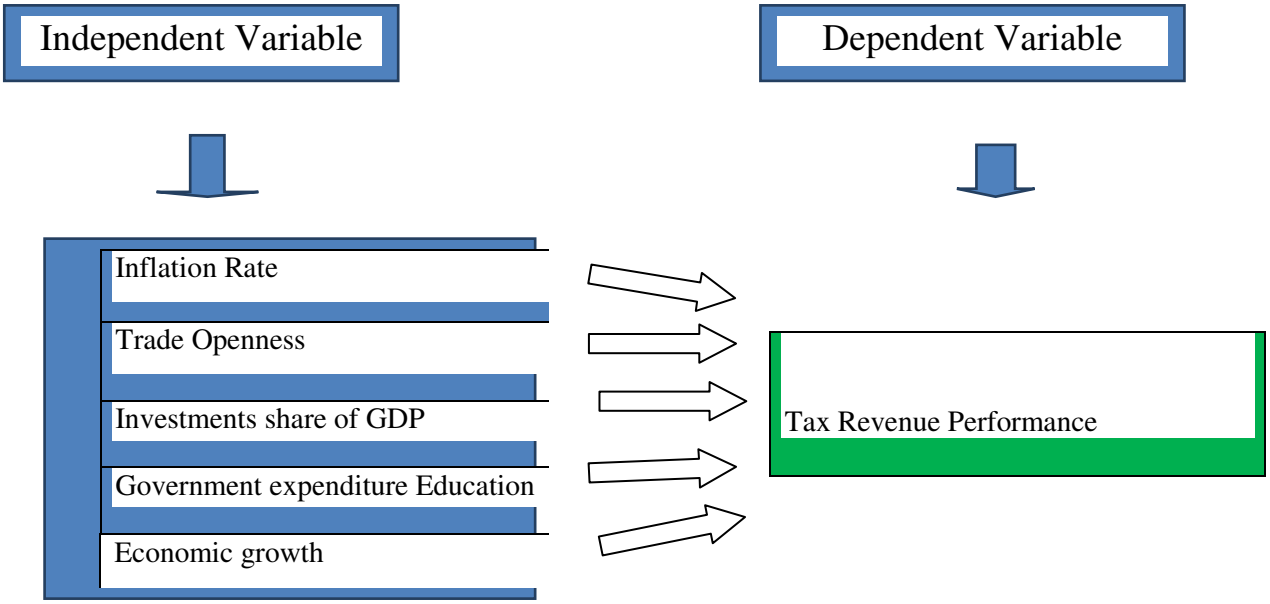
To summarize, internationally, most of studies found out that the determinants of tax revenue for are various in different countries. These studies have conducted studies using panel data methodology. However, in Ethiopia there are some researches conducted on the topic, taking maximum of twenty to twenty five years of panel data. These studies have also focused predominantly considered few of the determinants of tax revenue performance in the country. With this regards, this study brought a light on the major determinants of tax revenue in the

country taking an extended period of thirty-six years panel data. In addition, it has also identified the challenges of tax revenue collection in the country.

2.5. Conceptual Framework

Based on the objectives of the research and review of existing literature regarding the determinants of tax revenue performance, the study has developed the following framework that is expected to explain the determinants of tax revenue performance in the study area. The following figure depicts the relationship between the independent and dependent variables of the study.

Figure 2.1: Conceptual frameworks of the study



Source: Modified and adopted by the researcher from Review of Literature

CHAPTER THREE

RESEARCH METHODOLOGY AND DESIGN

3.1. Introduction

The previous chapter clearly identifies the knowledge gap which together with the problem statement shown in chapter one necessitates the conduct of this research. This chapter provides the details of the research methodology. The chapter is organized in three sections. The first section presents the research hypotheses that are following by a discussion of the nature of research approaches in section 3.2. Section 3.2 discusses the nature of the research methodology adopted in this study while the last section (3.4) presents the conclusion to the chapter.

3.2. Research Approaches

Creswell (2003) discussed three research approaches, namely quantitative, qualitative, and mixed research approaches. The following paragraphs briefly discuss the nature of each of these research approaches.

Quantitative Research Approach

The study is classified as quantitative if the researcher wants to quantify the variation in a phenomenon, situation, problem, or issue; if information is gathered using predominantly quantitative variables; and if the analysis is geared to ascertain the magnitude of the variation. The main function of statistics is to act as a test to confirm or contradict the conclusions that the researcher has drawn based on her/his understanding of analyzed data. Statistics, among other things, help the researcher to quantify the magnitude of an association or relationship, provide an indication of the confidence the researcher can place in her/his findings, and help to isolate the effect of different variables.

Qualitative Research Approach

A study is classified as qualitative if the purpose of the study is primarily to describe a situation, phenomenon, problem or event; if the information is gathered through the use of variables measured on nominal or ordinal scales (qualitative measurement scales); and if the analysis is done to establish the variation in the situation, phenomenon or problem without quantifying it.

Mixed Method Research Approach

As both qualitative and quantitative approaches have their strengths and weaknesses, and advantages and disadvantages, 'neither one is markedly superior to the other in all respects' (Ackroyd & Hughes 1992). The measurement and analysis of the variables about which information is obtained in a research study are dependent upon the purpose of the study. However, it is strongly recommended that the researcher should not 'lock her/himself' into becoming either solely a quantitative or solely a qualitative researcher. It is true that there are disciplines that lend themselves predominantly either to qualitative or to quantitative research. The research problem itself should determine whether the study is carried out using quantitative or qualitative methodologies.

3.3. Research Approach Adopted

Considering the research hypotheses and question as presented in the introduction part of the study, the study adopted mixed method research approach. The adoption of the mixed method research approach is for the following major reasons. Firstly, the quantitative approach is more appropriate in the sense that this paper was searching for the factors, which were affecting tax revenue performance in Ethiopia, and because of the fact that those variables can be easily quantified and measured objectively with numerical terms. On the other hand, the quantitative method is also used to measure how the tax revenue can grow if there is a growth. In the subsequent section, the quantitative and qualitative components of the research are presented. Secondly, the qualitative research approach is more appropriate to answerer the research question that the study has formulated. The detail explanation on the choice of mixed method research approach is presented in the following paragraphs.

3.3.1. Quantitative Aspect of the Study

As indicated in above, this study has used quantitative approach. The quantitative approach intends to assess the impact of such factors as Economic growth (Real GDP), Inflation, Openness and Foreign direct investment on the revenue performance of Ethiopia. The study has used survey of records as a strategy of inquiry. Time-series analysis technique is employed in the study in order to identify the major determinant of tax revenue performance in Ethiopia. The data set is composed of data obtained from different institutions such as Ministry of Finance and Economic Cooperation (MoFEC), Central Statistics Agency (CSA), National Bank of

Ethiopia (NBE) and the Ethiopian Revenue and Custom Authority (ERCA). The data covered the period from 1980-2015. The subsequent sub-sections present definition of variables and model specification.

According to Koul (2006), using appropriate data collection techniques help researchers to combine the strengths and amend some of the inadequacies of any source of data to minimize risk of irrelevant conclusion. He further argues that consistent and reliable research indicates that research conducted by using appropriate data collection techniques increase the credibility and value of the research findings. The subsequent subsections present definition of variables and model specification.

3.3.1.1. Definition and Measurement of Variables

The study has operationalized both the dependent and independent variables of the study in line with the literature. The following summary is the discussion on the definitions and measurement of variables.

Dependent Variable: Tax-Revenue Performance: the revenues collected from taxes on income and profits, social security contributions, taxes levied on goods and services, payroll taxes, taxes on the ownership and transfer of property, and other taxes. In most studies, tax revenue is measured by the total tax revenue as a percentage of GDP, which indicates the share of a country's output that is collected by the government through taxes. In this study hence, the same definition is taken and tax revenue is measured by the percentage of total tax revenue as percentage of GDP. It can be regarded as one measure of the degree to which the government controls the economy's resources.

Independent Variables:

1. Current GDP

It is a proxy for the overall development of the economy and is expected to be positively correlated with tax share as it is expected to be a good indicator of the overall level of economic growth and sophistication of the economic structure. The GDP is measured by expenditure, income and value added approaches. GDP is total market value, measured in current prices, of all goods and services produced within the political boundaries of an economy during a given period, usually one year. The key is that nominal gross domestic product is measured in current, or actual prices, the prices that buyers actually pay for goods and services purchased. Nominal

gross domestic product is also termed current gross domestic product. In this study, therefore, GDP is measured in the current gross domestic product.

2. Inflation

It refers to a situation where the rate at which the general level of prices for goods and services is rising and consequently, the purchasing power of currency is falling. Central banks attempt to limit inflation, and avoid deflation, in order to keep the economy running smoothly.in this study, the consumer price index is used a proxy to the variable inflation. Inflation is measured by three methods. These are Consumer Price Index (CPI), Producer Price Index (PPP), and GDP deflator. The study used CPI as a proxy for inflation. In most of the country's economy including Ethiopia, CPI is used to measure inflation. The consumer price index expresses the current prices of a basket of goods and services in terms of the prices during the same period in a last year.

3. Country openness

The degree of international trade measured by the share of exports and imports should also matter for revenue performance. Imports and exports are amenable to tax as they take place at specified locations. The effect of openness on revenue mobilization may be ambiguous. If this liberalization occurs primarily through reduction in tariffs then one expects losses in tariff revenue. On the other hand, Keen and Simone (2004) argue revenue may increase provided openness occurs through tariffication of quotas, eliminations of exemptions, reduction in tariff peaks and improvement in customs procedure. Rodrik (1998) also points out that there is a strong positive correlation between trade openness and the size of the government, as societies seem to demand (and receive) an expanded role for the government in providing social insurance in more open economies subject to external risks. Openness measures export plus import over GDP.

4. Investment

An investment made by a company or individual in one country in business interests in another country, in the form of either establishing business operations or acquiring business assets in the other country, such as ownership or controlling interest in a foreign company. In the context of this study, investment is measured through percentage share of Investment to GDP.

5. Debt

The degree of external indebtedness of a country may affect revenue performance as well. To generate the necessary foreign exchange to service the debt, a country may choose to reduce imports. In such a scenario, import taxes are lower. Alternatively, the country may choose to increase import tariffs or other taxes with a view to generate a primary budget surplus to service the debt. It refers to the current outstanding obligations for which the Central Government and is responsible. It is measured by Debt to GDP ratio.

6. Education

Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs, and habits. Educational methods include storytelling, discussion teaching, trainings, and direct research. It is measured by total government expenditure on education sector to GDP.

Variables Explanation Source of data Expected sign

Variables	**Explanation**	**Measure**	**Expected sign**
Tax-Revenue	Total tax revenue to GDP ratio	Percentage total tax revenue to GDP	Dependent variable
GDP	Level of economic growth	Measured by Current GDP	+
Inflation rate	Annual inflation rate as deflator of GDP	Annual inflation rate	_
Trade openness	Export and import as percentage of GDP	Export +import/GDP	+
Investment	Percentage of investment to GDP	Percentage of Investment to GDP	+
Debt	Country's ability to pay back its debt	Debt to GDP ratio	_
Education	Government investment on Education	Investment on education to GDP ratio	+

Table 3.1: Variables Explanation, Source of data and expected sign of relationship

3.3.1.2. Model Specification

In the study, classical linear regression model were used while fulfilling the requirements of ordinary least square. It is assumed that the characteristics of the model and proposed variables are expected not to violate the classical assumption underlying the OLS model. The justification to adopt and use the OLS method is to find the line of "best fit," that is, the line which minimizes the total distance between the actual data points and the predicted line (or residuals).Time series data was used from1980-2015.

In developing the model, the researcher has reviewed various prior research-works. Accordingly, prior studies included different variables while analyzing the determinants of tax revenue across the world. For instance, Teera (2003) tried to estimate the tax share of Uganda, by incorporating import share of GDP, gross domestic product per capita, foreign aid (%GDP), Manufacturing value added (%GDP), agriculture value added (%GDP) and population density as tax correlates. Whereas, Chaudhry and Munir (2010) included the following variables in estimating tax revenue in Pakistan: Tax base (agriculture value added (percentageGDP), manufacturing value added (percentageGDP), service value added (percentageGDP), per capita income, and openness), economic policy variables (exchange rate, inflation, and monetization), foreign aid, political stability, remittance, and social variables (urbanization, literacy rate). Workineh (2015) conducted study on Tax revenue determinates in Ethiopia by including the effect of policy variable (inflation), tax base (agriculture value added share of GDP, industrial value added share of GDP and GDP per capita income), education, and foreign aid on tax revenue percentage of GDP.

However, in developing the model for determinants of tax revenue in Ethiopia, including all variables is impossible due to unavailability of data, time shortage and financial resource scarcity, and small sample size problem. Therefore, following empirical literatures, this study attempts to investigate the impact of Economic growth (Current GDP), Inflation, Openness, education, debt, and investment on the tax revenue of Ethiopia empirically. The model specification indicated mathematically is represented as follows:

$$TR_t = \beta_0 + \beta_1 CGDP_t + \beta_2 INF_t + \beta_3 Open_t + \beta_4 I_t + \beta_5 Debt_t + \beta_6 Education_t + \varepsilon_t$$

Where:

TR = Tax Revenue

CGDP = Current Gross Domestic Product

INF = Inflation

Open = Countries Openness

I = Investment

Debt = Foreign debt by the Ethiopia government

Education = Educational Expenditure as a share of GDP and

εi is an error term that captures other unobservable factors

In addition to the above research methodology, the source of the data is analyzed for enhancing the quality of the study. There are two major approaches to gathering information about a situation, person, problem, or phenomenon. To undertake study, in most situations, the researcher needs to collect the required information; however, sometimes the information required is already available and need only be extracted. Based upon these broad approaches to information gathering, data can be categorized as primary data and secondary data.

The research process was started by collecting secondary data about tax revenue and economic performance situation in Ethiopia and reviewing that data. More specifically, data for the study is collected from Ethiopian Revenue and Customs authority (ERCA), National Bank of Ethiopia (NBE) and Ministry of Finance and Economic Cooperation (MoFEC) to check the level of tax revenue collected and the amount and percentage of independent variables in the country.

3.3.1.3. Model Assumption Test

It is indicated by Ibragimova (2016), time series data requires to pass various tests to be free from fake or false result. The major tests, which have been conducted, includes stationarity test and classical linear regression diagnostic tests, which involves hetroskedasticity test, normality test, multicollinearity test, and autocorrelation test.

I. Classical Linear Regression Diagnostic Testing

1. Normality (Bera-Jaque)Test

Brooks (2008) has stated that test for normality assumption is required in order to conducts single or multiple hypothesis tests about the model variables. Hence, to conduct diagnostic test for normality, the study has opted for the most common test of Bera Jaque (BJ) and conducted the test accordingly. The test result is shown in the following figure number 4.1. As it is observed from the figure, since the histogram is bell-shaped and Bj statistic is not significant, which means P-value given at the bottom of the normality test is 0.82 and it is bigger than 10%, the distribution is assumed normal. The following graph shows the normality output.

Figure 3.1: Normal distribution test

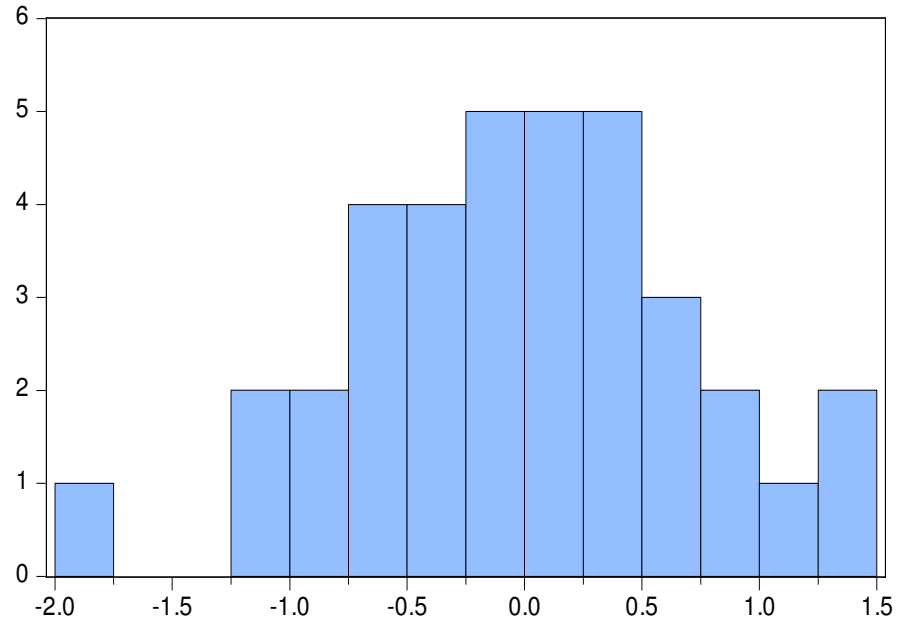


Table: 3.2: Normality Test Result

Series: Residuals	
Sample 1980 2015	
Observations 36	
Mean	2.71e-16
Median	0.006810
Maximum	1.452785
Minimum	-1.948675
Std. Dev.	0.736397
Skewness	-0.227423
Kurtosis	3.227874
Jarque-Bera	0.388217
Probability	0.823568

Source: EViews 8 test result

2. Test for Hetroskedasticity

Within the OLS assumption, the second diagnostic test, which was conducted in this study, is looking for the problem of Heteroscedastic. The study has applied White's heteroskedasticity test in order to check the aforementioned problem. The test statistic is computed by an auxiliary regression, where the researcher regress the squared residuals on all possible non-redundant cross products of the regressors. Based on the assumption of test, the study established and tested the following hypothesis.

Ho: Constant Variance (Homskadastic)

H1: Non-constant Variance (Hetroskadastic)

The following table indicates the summary of the test.

Table 3.3: White's Hetroskedasticity test

F-statistic	0.569567	Prob. F(27,8)	0.8692
Obs*R-squared	23.68089	Prob. Chi-Square(27)	0.6480
Scaled explained SS	17.11786	Prob. Chi-Square(27)	0.9282

Source: EViews 8 Result

Accordingly, the above table reveals that the null hypotheses is not rejected because, the corresponding P-value of F-test, Obs*R2, and scaled explained is greater than 5%.This shows that variance of the errors is constant (i.e. there is no the problem of Heteroscedastic to the model. For further consolidation of the above result, the study has also conducted Breusch-Pagan-Godfrey test. The test statistic shows that P-value of F-test, Obs*R2, and scaled explained is greater than 5% and we do not to reject the null hypothesis of constant variance. The following table shows the result of the test.

Table 3.4: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.541258	Prob. F(6,29)	0.2002
Obs*R-squared	8.704132	Prob. Chi-Square(6)	0.1909
Scaled explained SS	6.291831	Prob. Chi-Square(6)	0.3913

Source: EViews 8 Result

3. Test Result for Multicollinearity

A correlation is the number that explains the degree of relationship between the dependent and independent variables. In the study Pearson Correlation test is conducted to see if there is a problem of multicollinearity among the explanatory variables. The following table presents the results of the correlation matrix. A test is conducted through Pearson correlation matrix to see whether there is a problem of multicollinearity.

Table 3.5: Correlation Matrix

	Education share of GDP	Inflation rate	Investment share of GDP	Current GDP	Openness	Debt to GDP	Tax revenue share of GDP
Education share of GDP	1						
Inflation rate	-0.157	1					
Investment share of GDP	-0.151	-0.320	1				
Current GDP	-0.306	0.198	-0.610	1			
Openness	-0.310	0.265	-0.714	0.764	1		
Debt to GDP	0.067	0.238	-0.658	0.516	0.665	1	
Tax revenue share of GDP	-0.284	-0.080	0.182	0.371	0.364	0.424	1

Source: Views 8 Result

According to the above table, the Pearson Correlation Coefficient of all variables among the predictor was less than 0.80 this is in line with what Field (2009) stated. Therefore, correlation coefficient value indicates that there was no problem of multicollinearity among explanatory variables of the study.

4. Assessment of Autocorrelation

In order to check for the problem of autocorrelation, the study has conducted Durbin-Watson test and tested the hypothesis. The hypotheses were;

Ho: Zero autocorrelation in the residuals at the 1% level of significance

H1: The residuals are positively auto-correlated at the 1% level of significance.

Accordingly, the test result show that the Durbin-Watson tests result is 1.591. However, as the Durbin-Watson test statistic is less than 2, a test for positive autocorrelation should be conducted. From the Durbin-Watson statistic table, when number of predicator variables is six and number of observations thirty-six at 5% error level, it becomes clear that dL is 1.114 and dU is 1.876. If the test statistic value (d) found as $dU < d < 4 - dU$, the test is conclusive and we do not reject the null hypothesis that states no autocorrelation, positive or negative (Gujarati, 2003). Hence, we do not reject the null hypothesis of no autocorrelation (with a 5% error level). It is claimed that there is not sufficient prove as to the existence of autocorrelation among variable of the study that justify taking any corrective action. The detail of the result is shown on the following table.

Table 3.6: Durbin-Watson test for Autocorrelation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.678595	Prob. F(2,27)	0.5158
Obs*R-squared	1.722980	Prob. Chi-Square(2)	0.4225

R-squared	0.047861	Mean dependent var	-4.36E-15
Adjusted R-squared	-0.234255	S.D. dependent var	0.736397
S.E. of regression	0.818116	Akaike info criterion	2.648692
Sum squared resid	18.07146	Schwarz criterion	3.044572
Log likelihood	-38.67645	Hannan-Quinn criter.	2.786865
F-statistic	0.169649	Durbin-Watson stat	1.987481
Prob(F-statistic)	0.993249		

Source: EViews Result

II. Test for Stationary

Empirical works based on time serious data assume that the underlying time serious is stationary. Yet, the problem with many time serious data is non-stationary (random walk) and regressions based on non-stationary time series data are often misleading for the reason that regressions based on such a data will give a spurious(or a false) result (Anwar, 2014 and Gujarati, 2003). While working with time-series data, testing for stationary is needed (2016). To have reliable result, we have to transform non-stationary to stationary by making it differencing. To determine the stationary property of the variables, ADF (Augmented Dickey Fuller) test is employed with constant and trend at their level and first and second difference.

In light of the above argument, in the study, stationary test is conducted against the variables using Augmented Dickey Fuller test (ADF). In the test, hypothesis is established so as to check whether the study variables have a unit root or not. Accordingly, the test is conducted and found that inflation rate and investment to GDP is stationary at level while tax revenue share of GDP, trade openness, and education to GDP and debt to GDP are stationary at first difference. Finally, current GDP is stationary at second difference. The summary of the test result illustrated in the following table. Besides the detail of the test, result is also attached at the end of the study as annex number one.

Table 3.7: Unit root test result

Variable	**Augmented Dickey Fuller Test**					
	Level	**1st (d)**	**2nd (d)**	**Critical value (1%)**	**Critical Value (5%)**	**Critical value (10%)**
Tax Revenue Share of GDP	2.57	-5.49	-	-2.63	-1.95	-1.61
Trade Openness	2.67	-7.62	-	-4.25	-3.54	-3.20
Inflation Rate	-5.40	-	-	-3.63	-2.94	-2.61
Investment Share of GDP	-2.87	-	-	-2.64	-1.95	-1.61
Education Share of GDP	0.59	-5.23	-	-2.63	-1.95	-1.61
Current GDP	13.67	2.07	-6.63	-3.65	-2.95	-2.61
Debt share to GDP	0.83	-4.15	-	-2.63	-1.95	-1.61

Source: EViews 8 Result

3.3.2. Qualitative Aspect of the Study

In addition to the quantitative research approach, the study has used qualitative research approach. The purpose of the qualitative component is to identify the key challenges facing in

tax revenue collection in Ethiopian Revenue and Custom Authority. The qualitative research approach was applied in the research to guide the collection and analysis of qualitative data to through key informant interview in order to answer the research question. The qualitative data was gathered through interviews made with two Ethiopian Revenue and Custom Authority offices' managers and three staffs (auditors, assessors, and disk officers) and the interview was applied to identify the challenges of tax collection. As the determinants of tax revenue in the quantitative part was simply exploring the effect of the explanatory variables on the tax revenue performances of Ethiopia, this approach is solely concerned with mentioning the challenges that tax collectors faces as well as the factors that adversely affects the tax collection method. The findings of the qualitative study are substantiated with available literature and researcher's own observation

3.4. Research Design

Creswell (2003) defines a research design as the scheme, outline, or plan that is used to generate answers to research problems. He notes that a research design is the structure of the research that serves as the glue that holds all elements of a research project together. This implies the fact that it gives direction and systematizes the research as it involves the process, which the investigator will follow from the inception to completion of the study. In light of this, the study has adopted a mixed method research approach, which according to Kothari (2004), is used when the problem has been defined specifically, and where the researcher has certain issues to be examined by the research about the problem. This design would also help in conducting statistical analysis to reach at conclusive results about the phenomenon under the study.

3.5. Sources and Type of Data

Kothari, (2004) notes that there are two major sources of data namely; primary and secondary data sources that could be used in any study. Hence, the data sources for the research were both secured from primary and secondary sources. The primary data was collected from purposively selected senior officials working in tax department of Ethiopian Revenue and Custom Authority through key informant interview. In utilizing secondary sources, statistical reports from National Bank of Ethiopia, Ethiopian Revenue and Custom Authority, Ministry of Finance and Economic Cooperation, published articles, research works, previous studies, books, and other sources were reviewed. In addition to this, qualitative data was collected from respondents through interview while quantitative data was collected from secondary sources.

3.6. Conclusions

It has been discussed that both qualitative and quantitative approaches have their strengths and weaknesses, and advantages and disadvantages, neither one is markedly superior to the other in all respects. For those reasons, researchers are more acceptable if they attempt to include a mixed of both quantitative and qualitative research approach so that a very strong, powerful and sound conclusions to be made and essential policy recommendations to be forwarded to relevant body who is working on the subject matter. In line with this, this research employed both approaches. The quantitative approach intends to assess the determinant factors as Economic growth (current GDP), inflation rate, trade openness, debt, expenditure on general education, and investment on the revenue performance of Ethiopia. The study used survey of records as a strategy of inquiry. Time-series analysis technique is employed in the study to identify the determinants of tax revenue performance in Ethiopia. In general, in the co-integrating regression, the residuals are constrained by the co integrating relationship; hence, they are never far from the regression line. In a spurious regression, the residuals would most likely be often far away and increasingly far with time from the regression line. Because the two co-integrated variables are trended, each additional observation spreads out the range of the sample and so enables more precise estimation than would be the case of

Besides, the qualitative approach is followed in order to answer the research question formulated in the first chapter of the thesis. Content analysis of interview result is made to achieve the qualitative aspect of the study.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1. Introduction

This chapter presents the results of the study and discusses the major findings of the study in line with the knowledge in the literature and the realities in Ethiopia. The chapter is presented in four sub-sections. The results of the descriptive statistics of data gained from financial documents from National Banks of Ethiopia, Ministry of Finance, and Economic Cooperation and Ethiopian Revenue and Custom Authority are presented in the first sub-section of the chapter. In the second sub-section the regression estimate results is presented. In the third sub-section of the chapter, the results of in-depth interviews will be thoroughly analyzed and interpreted in line with the research objective. In every aspect of the data analysis and interpretation, objective –wise analysis is followed and where required the interpretation of data is substantiated with relevant literature. Finally, the conclusion of the result is indicated in the end part of the chapter.

4.2. Descriptive Analysis of Data

Before proceeding to the main econometrics analysis, a detailed descriptive statistical summary of the data is carried out. The time-period of the study was thirty-six years that went from 1980 to 2015 G.C and data on each variable of the study was analyzed accordingly. As it is shown in the table 4.1 below, the average of Ethiopia's current GDP of the last thirty-six years was ETB 186,404.6 millions and the average of total revenue collected during the same period was ETB 21,534.4 million. Similarly, the average of the gross fixed capital formation and the average of the expenditure on education were ETB 70,660 million and 7630.2 million respectively. The mean value of expenditure on education indicates that there is very low human capital development in the country during the sample periods in spite of the increasing expenditure trend made by the government.

Besides, the mean of trade/ GDP ratio measuring the degree of openness is found to be very low indicating that Ethiopia's overall international trade policy is not adequately opened to international market, which is not advisable according to most research works (Karagöz, 2013 Anware, 2014, Tesfaye, 2015). It is also argued by Belay (2016) that the higher level of trade openness promotes the exchange process of goods and services with other countries and encourages economic growth. A country is considered to benefit from trade by creating employment

opportunity and is assumed the main channel for technological transfer from those developed countries. Concerning inflation rate, the mean inflation rate for the specified period was 8.90 representing a one-digit rate, which is assumed a within an increasing inflation rate. In relation to public debt, the country has indebted an average of 52,601 million Ethiopian birr. The following table presents the descriptive summary of the variables.

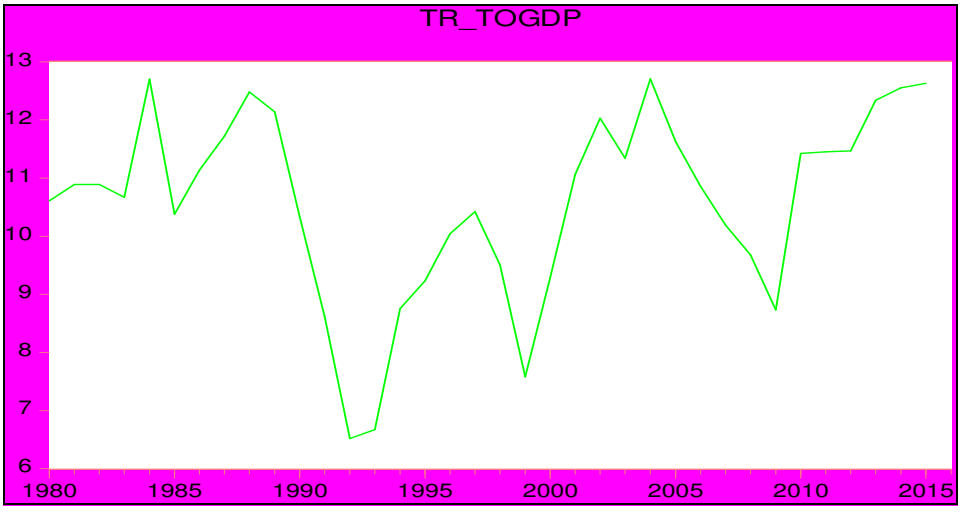
Table 4.1: Summary Statistics, using observations 1980 – 2015

Variable	Mean (Million)	Median(Million)	Maximum (Million)	Minimum(Million)	Std. Dev. (Million)	Obs.
Tax Revenue	21534.39	5325.585	156162	1298.2	38602.63	36
Investment	70660.45	42942.95	293896	16066.8	70702.04	36
Expenditure on Education	7630.236	1484.025	57290.6	200.6	13478.63	36
Total Public Debt	52601.86	26798.8	380647	1488.5	79654.61	36
Current GDP	186404.6	53534.5	1236678	12238.9	311590.4	36
Inflation rate	8.904367	6.58325	55.2414	-11.8	13.86183	36
Level of Trade Openness	0.1362	0.07555	0.5653	0.017	0.157866	36

Source: EViews 8 Descriptive Analysis result

The minimum and maximum value of these variables indicates the range of the value. Standard deviation also shows measure that is used to quantify the amount of variation or dispersion of a set of data values across years. Graphically, the trend of total tax revenue share to GDP is illustrated in the following figure.

Figure 4.1: Trends of tax revenue to GDP in Ethiopia between 1980 to 2015



Source: Eviews 8 Output

4.3. Regression Analysis Between Explanatory and Dependent Variable

The following section presents the regression results found based on the regression analysis conducted between the dependent variable (Tax revenue performance measured as tax revenue share of GDP) and the explanatory variables (Inflation rate, trade openness, debt share to GDP, current GDP, investment share of GDP, and Education share of GDP). The discussion of the result also incorporates the interpretation of the results with the support of relevant literatures. As it is described earlier, before conducting the regression analysis, the study has established and tested for the assumptions of classical linear regression and test of stationary and has proved that there are no problems of normality, mulitcolliniarity, autocorrelation and hetroskedasticity problem in the variables of the study. Besides, it has also established the stationary of the variables. The analysis and interpretation is made based on the output from the EViews 8 software and the discussion is substantiated with empirical studies and researcher's own ideas.

As it is indicated in the objective of the research, the study sought to identity the major determinants of tax revenue in Ethiopia based on time-series macroeconomic data analysis. The analysis is made based on objective-wise /thematically focusing on testing the research hypotheses formulated and shown in chapter one and two. In each sub-section, description and discussion on the result of each variable is made based on the statistical result. This implies that regression analysis is made on each variable to test the hypotheses of the study.

The following discussion is made based on the multiple regressions, which was conducted to see the combined effects model. In the following table presents the summary on the coefficient, standard errors, t-values, and P-values explanatory variable and R2, adjusted R2, F-statistics, prob (F-st) for regression and number of observations of the study.

Table 4.2: Multiple Regression Result

Dependent Variable: Tax share of GDP				
Method: Least Squares				
Date: 13/12/17 Time: 12:13				
Sample: 1980 2015				
Included observations: 36				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.683674	1.027083	2.612908	0.0141
Inflation rate	-0.006164	0.010789	-0.571274	0.5722
Trade Openness	5.273282	6.934471	0.760445	0.4531
Inv' share of GDP	0.035969	0.005375	6.692157	0.0000
Educ' share of GDP	0.004984	0.009353	0.532864	0.5982
Current GDP	1.28E-06	2.65E-06	0.483885	0.6321
Debt to GDP	1.108192	0.257236	4.308070	0.0002
R-squared	0.753267	Mean dependent var		10.57444
Adjusted R-squared	0.720494	S.D. dependent var		1.619597
S.E. of regression	0.808998	Akaike info criterion		2.586625
Sum squared resid	18.97984	Schwarz criterion		2.894531
Log likelihood	-39.55924	Hannan-Quinn criter.		2.694092
F-statistic	18.54621	Durbin-Watson stat		1.591036
Prob(F-statistic)	0.000000			

Source: Eview 8 Output

The above table number 4.2 explains the summary of the regression result conducted to test the research hypotheses. The above table shows that the model if fit with p-value of 0.000 which is even less than 0.01. Besides, it is viewed from the table that the explanatory variables explain 75% of tax revenue performance. According to the regression estimation result, investment, and debt to GDP ratio are significant variables but inflation rate, level of trade openness, current GDP, and expenditure on education are not significant variable. The result shows that although inflation rate has no significant relation with tax revenue; the variable inflation has negative effect on the tax revenue performance, as the test coefficient is -0.006164. This implies that an increase in inflation by 1birr results in a decrease in tax revenue by 0.006164 birr. Similarly, trade openness has a positive effect on tax revenue although the relationship is not a significant relationship. It is indicted in coefficient statistic is 5.273282. This might be related with the fact that the influence of trade openness on imports and revenue performance is considered an indirect outcome. This indirect outcome is derived from the response of consumption and

production decisions to price changes, of which the price changes are triggered by trade reforms. According to Edward et. al. (2017), a reduction in import taxes is likely to influence imports and revenue performance depending on the elasticity of import demand and price elasticity of supply for import substitutes i.e., if the demand for imports is inelastic it's likely that import volumes and revenue performance will remain unchanged irrespective of the changes in import taxes and prices. On the other hand, if the demand for imports is elastic it is possible that import volumes and revenue performance will increase owing to changes in import duties and prices.

Investment has also a positive effect, which is automatic; the increase in investment 1 birr leads a rise in tax revenue by 0.035969 birr. As the investment level is higher in the economy, it will have a positive impact on the aggregate demand, which in turn have a positive effect on the level of income that individuals earn. This in turn will result in higher likelihood to increase the income tax and other taxes, which are collected from different businesses.

Similarly, this study found that the variable expenditure on general education is linked positively with the tax revenue performance. That is, a 1-birr increase in expenditure on education leads to a 0.004984-birr increase in the tax revenue although it is not statistically significant at 5%. This is for the reason that the more the tax collectors and the taxpayers are educated, the more the probability that the taxpayers will able to understand and become aware of their taxpayer rights and obligation. Besides, the educated tax payers will able to clearly understand the procedure of paying taxes, gained understanding on the basic tax laws and procedures and degree of tax evasion will be decline as they are more educated.

On the other hand, the main reason for the insignificant result the current GDP growth comes from the government investment rather than other factors. Related to debt, the credit the country get from different sources does not pay reasonable taxes.

Besides, the study has conducted a regression analysis to see the effects of explanatory variables on tax revenue performance by omitting current GDP. Since most of the variables are part of GDP, it is believed that the result is dominated by the existence of GDP as explanatory variable. The following table indicates the scenario if GDP is omitted from the regression result.

Table: 4. 3: Regression Result without GDP

Dependent Variable: Tax Revenue to GDP				
Method: Least Squares				
Date: 05/30/18 Time: 02:38				
Sample (adjusted): 1980 2015				
Included observations: 36 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.549101	0.976012	2.611752	0.0139
Inflation rate	-0.006510	0.010627	-0.612573	0.5448
Investment to GDP	0.037244	0.004625	8.053225	0.0000
Education share to GDP	1.022587	0.184343	5.547183	0.0000
Trade Openness	8.521728	1.715202	4.968353	0.0000
Debt to GDP	0.007278	0.007959	0.914340	0.3678
R-squared	0.791597	Mean dependent var		10.57444
Adjusted R-squared	0.756864	S.D. dependent var		1.619597
S.E. of regression	0.798605	Akaike info criterion		2.539111
Sum squared resid	19.13309	Schwarz criterion		2.803030
Log likelihood	-39.70399	Hannan-Quinn criter.		2.631226
F-statistic	22.79043	Durbin-Watson stat		1.630595
Prob(F-statistic)	0.000000			

Source: Eview's 8 Output

The above table shows that absence of GDP from the regression made changes in the number of explanatory variables, which significantly determine tax revenue performance and model adequacy. Accordingly, in table number 4.8, it is viewed that investment share of GDP, expenditure on education share of GDP and trade openness significantly affect tax revenue performance. The remaining variables namely, inflation rate, and debt to GDP had no significant influence upon tax revenue performance in Ethiopia. With regards to model fit, the regression result show that the model is fit with R-square 0.79 implying that the model is fit and 79% of the variation in the dependent variable (tax revenue performance) is attributable to the explanatory variables (investment share of GDP, expenditure on education share of GDP and trade openness). In addition, the test of model adequacy shows that the model is fit with significance level of 0.000, which is even, less than 0.01. The t-statistics show that only inflation rate negatively affects tax revenue while the remaining variables do positively affect tax revenue performance.

4.4. Discussion and Interpretation of the Result

This section discussed the interpretations made on the regression results as presented in the preceding section.

1. Relationship between Current GDP and Tax revenue Performance

It is a proxy for the overall development of the economy and expected to be positively correlated with tax share as it is expected to be a good indicator of the overall level of economic growth and sophistication of the economic structure. The GDP is measured by expenditure, income and value added approaches. GDP is total market value, measured in current prices, of all goods and services produced within the political boundaries of an economy during a given period, usually one year. The key is that nominal gross domestic product is measured in current, or actual prices, the prices that buyers actually pay for goods and services purchased. As the regression result shows, however, current gross domestic product has no significant relationship with tax revenue performance and the study has accepted the sign of null hypothesis, which say there is no significant relationship between current GDP and tax revenue performance of Ethiopia at 5% level of significance. This might be attributable to the reason that the economic growth in Ethiopia comes from government investment rather than private investment. This is supported by the World Bank Report published in 2014. This implies that government investment is not bearing much tax relative private investments thereby have not increase tax revenue performance.

In comparing the finding with existing literature, the finding is similar with what Aloo (2011) found out in a study conducted in Kenya. He concluded that growth in GDP has little or no effect on tax revenue performance of Kenyan government. However, the finding of this study is also in opposite to what Clausing (2007) has found out. His finding concluded that gross domestic product has strong positive relationship with tax revenue performance. This implies that further comprehensive study is needed to validate one of the two opposing findings stated in the above.

2. Relationship between Inflation Rate and Tax Revenue Performance

Inflation represents an increase in the overall level of prices of goods and services. The study used CPI as a proxy for inflation. According to the regression result, the inflation does not have a significant effect on tax revenue performance. In considering the t-statistic, it has a negative

effect although it is not significant on tax revenue. Hence, in this context, we do not reject the null hypothesis, which tells there is no significant relationship beween inflation, and tax revenue performance. This result is in contradiction with the study finding of Tanzi (1989). In Tanzi's research, high inflation rate in a country forces the government to increase tax on goods and services by increasing the price. Moreover, if the government collects taxes based on the value product, the price increment in product leads a rises in tax revenue collection. In contrast with this, Workineh (2015) result shows, there is a positive relation between inflation and tax revenue. Furthermore, the findings of Muibi & Sinbo (2013) indicate that there is no significant relationship between inflation rate and tax revenue performance in case of Nigeria federal government context.

3. Trade Openness and Tax Revenue Performance

Trade openness degree measured as the share of international trade in GDP, and may have a significant impact on tax revenues. It could also be considered as an indicator of liberalization level of the economy. In line with this, the study has formulated a hypothesis and tested its validity. Accordingly, the findings of the study show that there is no significant relationship between trade openness and tax revenue performance. Hence, we do not reject the null hypothesis. However, from the sigh of t-statistic it is possible to determine that trade openness has a positive effect on tax revenue. This study finding is similar with the findings of study conducted by Muibi & Sinbo (2013). They have stated that trade liberalization policy seems not to have adverse or positive effect on tax revenue. However, the findings of Belay (2016) clearly show that openness has positive relationship with tax revenue in Ethiopia and it was similarly indicated by Baunssgardetal (2005) that tax revenue and openness has positive relationship. From the results obtained,

Thus, it implies that the decision to open up domestic market/ liberalizing the market is likely to have a no impact on the revenue performance of the country. However, it is not in line with the Studies by Micah Samuel (2015) who has concluded trade liberalization leads countries to have higher trade volumes and increase in tax revenue performance. The possible explanation for the positive result according to the researcher is that trade openness increases access to consumer goods, intermediate imports, and export markets, which combine to improve indirect taxes particularly VAT and Excise tax.

In contrast to the study by Micah Samuel, this research has found that the more the trade is opened to other economies, the lower the tax revenue performance will be due. This is because as the economy of countries becoming more open to international trade, the amount of import coming from other countries will increase and/or the opened economy will be more destinations for the products exported by the rest of the world. Consequently, the revenue might be increased because of the increase in the quantity of imports coming from the rest of the world. However, in developing countries, the spending capacity is not as higher to compensate the tax revenue losses.

With the movement of internationally traded goods entering into and departing from a country through a few specified points, they become relatively amenable to tax. However, when the effect of openness is taken into account, this outcome could be nullified. Nwosa et al (2012) points out that if trade openness occurs primarily through reduction in tariffs then one expects losses in tariff revenue and reduction on taxes. This study also generate the same result with Nwosa et al (2012) paper, that refer to openness has a negative effect on tax revenue that is openness leads to trade liberalization which result a reduction in tax revenue

4. Investment Share of GDP and Tax Revenue Performance

Investment means additions to the physical stock of capital. Practically, investment includes housing construction, building of machinery, construction of factories and offices, and additions to a firm's inventories of goods. Investment is more generally as any current activity that increases the economy's ability to produce more output. According to Diego (2006), investment has positive and significant effect for on tax revenue performance. This study also gets the same result with Diego (2006), meaning that investments share to GDP has a positive and significant impact on tax revenue leading to the conclusion that we reject the null hypothesis that there is no a significant influent of investment and tax revenue performance. This is an important phenomenon that investment is helpful in raising general welfare through raising tax revenue to the government. Investment is a category of activities in which an investor resident in on economy establishes a lasting interest in and a significant degree of influence over enterprises identical in other economy. With this regards, a study conducted by Belay (2016) is also testifies the findings of this study. Belay's finding indicates that the relationship between tax revenue and investment is positively related and statically significant.

5. Debt share to GDP and tax Revenue Performance

Debt refers to the current outstanding obligations for which the Central Government and its branches are responsible. It is measured by Debt to GDP ratio and show country's ability to pay back its debt. As this study indicates, the sign of public debt revealed positive relationship with tax revenue performance; however, this finding is very common in the literature. The growth of public spending has generated large fiscal deficits in many countries, leading to increases in the share of public debt relative to GDP (Tanzi & Blejer 1988). With a large debt, the government needs to raise the revenues necessary to service it. When the interest on the debt exceeds net borrowing plus the possible reduction in non-interest expenditure, the level of taxation must go up unless the rate of growth of the economy is high enough to neutralize the increase. However, the result in this study differs from Tanzi & Blejer (1988) research output, the outcome of Debt shows, the variable is insignificant. Because, the debt used by the government so does not pay reasonable taxes.

6. Expenditure on General Education and Tax Revenue Performance

Education is the most vital element for successful collection of tax revenue. Because, the documentation of the economy is essential for an effective tax payment made. Literacy is more than being able to keep records on books. It includes knowledge and usage of information technology. As indicated in the estimation result, however, education has no significant influence on tax revenue performance. From t-statistic result is it is found out that there exist a positive effect on tax performance. This outcome is opposed by the findings of Chaudhry and Munir (2010). Their study demonstrates that taxes yield less revenue in fewer literates, the fact that peoples that are more educated are expected to have the knowledge of tax; and pays their tax accordingly. This implies that education has a positive effect on tax revenue. In this study, however, we do not reject the null hypothesis. Hence, we concluded that there is insignificant relationship between expenditure on education and tax revenue performance.

4.5. Challenges of Tax Revenue Collection in Ethiopian Revenue and Custom Authority

The efficiency of a tax system is not determined only by appropriate legal regulation but also by the efficiency and integrity of the tax administration. In many countries, especially in developing countries, small amounts of collected public revenue can be explained by either incapability of the tax administration in realization of its duty, or with some degree of corruption (Karagöz,

2013). Regardless of how carefully tax laws have been made, they could not eliminate conflict between tax administration and taxpayers. Tax administration with a skilled and responsible staff is almost the most important precondition for realization of "tax potential" of the state. It is generally known that tax laws and tax policy are as good is the tax administration (Kaldor, 1980).

In light of this, the study has aimed to determine the challenges of tax revenue collection in the central government level through conducting key informant interview with purposively selected government officials. Key informant interviews are conducted with two mangers and three staffs of Ethiopian Revenue and Custom Authority (ERCA) working at head office and branch offices. According to the interview result, in ERCA, human resource recruitment, and selection is conducted in a centralized approach and it is conducted by the head office, which conducts theses activities and distributes employees to branch office. Since this process takes longer time, in most cases branch offices were forced to work with limited staff. In addition, transfers of employ in different working place were based on the education and workload as well as the social problem of the employees. However, the demand for staff transfer and human resource supply to fill vacant posts left by the transferee is not properly addressed and filled timely. This implies that, some employees were dissatisfied in the working environment due to exercise workloads. This issue is explained by Pynes (2004) as that absence of proper human resource development programs and transfer system, the performance of offices would significantly be affected.

Besides, the interviewees strongly affirmed that lack of capacity building and trainings programs was negatively affecting the tax collection performance in the office. They have also stated that the system of accountability established both at the head and branches offices were not backed up by proper reward and punishment instruments. This in turn affects the organizational performance. In line with this, Michael (1995) and International Civil Service Commission (2001) argued that organization in general and financial institutions in particular need to develop and implement an effective and efficient accountability system that commensurate with motivation schemes. The interviewees have also acknowledged that there were practices and attempts to take advantage of official authorities and there were staff vulnerable for corruption and scandal activities. There was also evidence that the level of corruptions committed by some

employees especially in cash register controller was increasing. This is also a major threat to the performance of ERCA and negatively affects tax collection performances.

It is confirmed in literature that the evaluation of the employees' performance must be supported by well-established performance measurement system. However, it is indicated in the interview conducted with the employees of ERCA that there were inadequate performance evaluations system and the practice was characterized as the performance of even senior staff of the organization was appraised by fresh staff who were insufficiently equipped with the required skills and techniques. This statement is attested by Leggat, Bartram & Stanton (2011) as they argue that organizational performance appraisal systems should be made based on well-structured performance evaluation methods and conducted by well-trained and experienced staff of the organization. Employees were also having objection on the nomination and approval of employees sent for experience sharing visit both within domestic and abroad. Employees stated that there were no clear and objective criteria set to let staff gain experience fro inland and foreign experience sharing activities.

In relation to organizational communication system, the interviewees stated that the electronic media transmission was poor in creativity to address the necessary message on attractive way. Published media provided the information in Amharic language. Therefore, there was a problem in getting the meanings of the directives and other publication made in English language. Administration and modernization of webpage was not done on sustainable manner. Key informants stressed that even though Ethiopia is the member of World Custom Organization (WCU), ERCA had failed to create effective communication and partnership with international organization and different foreign countries to exploit recent global opportunities that aid in modernizing tax collection activities. On the other hand, limitation on applying good governance procedures, weakness to make timely decision, insufficient complain handling and resolution mechanisms and limitation of listening the voices of taxpayers were also other critical challenges the organization was facing in rendering efficient and effective services.

ERCA has used different software for the different tasks. As result, a single employee had to know and apply more than five software programs to accomplish a single task. This creates burden on employees and in turn weaken organizational performance (Plessis & Bergh, 2011). In addition to this, network connection problem made the administration of modern information communication technology more difficult. Moreover, the supplies and distribution of cash

register machines faced limitation, as there were shortage of suppliers and foreign currency problem**.** Problems related to usage of the cash register machine by taxpayers, incapable maintenance services, weakness of regional taxpayers to take taxpayers identification number timely, limited use of E-filling systems were also responsible factors for weak revenue collection performance of the organization. In addition to these, the limited use of E-filling system by few companies and its restriction for sole proprietorship made the tax payment system clumsy. Meanwhile, the cargo-scanning machine was not available as per the demand required and the single window service was not well developed. In general, challenges manifested at administrative, recruitment and selection of human resource, employees performance measurement, uses of communication and information technology, level of taxpayers' awareness, overload of employees, supply, and distribution of register machines, corruption, and other factors were contributing to inefficiency in tax collection activities in the country.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1. Summary of major Findings

The followings are the major findings of the study.

- The study revealed that investment share to GDP and debt to GDP is significantly affect tax revenue positively while the remaining variables do not have significant relation with the dependent variable.
- The regression result shows that 76% of the changes occur due to the change in the explanatory variables while the model adequacy is significant at p-value of 0.000.
- Besides, when current GDP as an independent variable is omitted from the model, the regression result totally changed and showed that trade openness, investment share to GDP and expenditure on general education to GDP significantly affect tax revenue performance while inflation rate and debt to GDP share are insignificant.
- During this case, the model is adequate at 1% significance level and the fitting model explains 79%.
- This implies that a change in the explanatory variable causes 79% change in the dependent variable.
- It is viewed in both the regression result tables that only inflation rate negatively affect tax revenue performance while the remaining affect tax revenue positively.
- In the first model, current GDP, trade openness, expenditure on education and inflation are not significant variable.
- The main rationale for the insignificant result is that the government budget increment is not highly dependent on the growth in the economy rather it follow the normal own trend highly influenced by government political decisions and policies.
- Besides, the findings of the study illustrate that tax revenue collection in the country in general and in Ethiopian Revenue and Custom Authority in particular faces various challenges. It is identifies in the study that,
  - Lack of capacity building and training programs
  - Accountability system is not backed up with reward and punishment as well

- Corruption rampantly hit employee who especially works on cash registration controllers.
- Performance appraisal and evaluation of the employee is not supported by the actual efficiency and performance of workers.
- Poor creativity in electronic media transmission to address the necessary message on attractive way,
- Unavailability of publication in English language as well a
- Administration and modernization of webpage is not done on sustainable manner.

- In addition; the tax system faced the following challenges;
  - Fear of decision making in proper period to avoid risks of the adverse consequences of decisions.
  - Unfair Institutional complain handling and resolution mechanism
  - Appeals presented by taxpayers are usually discarded;
  - Inadequate software application, and network connection problem,
  - Shortage of supply of cash register machine due to shortage of foreign currency, and weak maintenance services for the cash register machine,
  - absence of efficient registration process to get tax identification number at regional offices, are the major challenges, which ERCA faced in collecting adequate revenue.
  - Only few private limited companies (Plc) use the E-filling tax payment system due to lack of awareness and promotion linked with system and this service is not provided for sole proprietorship.
  - Cargo-scanning machine is not available as per the demand required;
  - Single window service is not well developed.

5.2. Conclusions

This study has examined the determinants of tax revenue performance and challenges in Ethiopia. The study used mixed research approach with time-series data analysis strategies. The quantitative component aimed at exploring how far the independent variables (inflation rate, trade openness, current GDP, debt level, investment share to GDP, and expenditure on education to GDP), which this study considers are explaining the dependent variable (tax revenue performance). In line with this, this study has used a time series data of the variables for a period ranging from 1980 to 2015. The purpose of the qualitative component (in-depth interviews) has been intended to identify the main challenges observed in collecting adequate tax revenue from the taxpayers' and tax collectors by the Ethiopian Revenue and Custom Authority.

The study revealed that investment share to GDP and debt to GDP is significantly affect tax revenue positively while the remaining variables do not have significant relation with the dependent variable. The regression result shows that 76% of the changes occur due to the change in the explanatory variables while the model adequacy is significant at p-value of 0.000. Besides, when current GDP as an independent variable is omitted from the model, the regression result totally changed and showed that trade openness, investment share to GDP and expenditure on general education to GDP significantly affect tax revenue performance while inflation rate and debt to GDP share are insignificant. During this case, the model is adequate at 1% significance level and the fitting model explains 79%. This implies that a change in the explanatory variable causes 79% change in the dependent variable. It is viewed in both the regression result tables that only inflation rate negatively affect tax revenue performance while the remaining affect tax revenue positively. In the first model, current GDP, trade openness, expenditure on education and inflation are not significant variable. The main rationale for the insignificant result is that the government budget increment is not highly dependent on the growth in the economy rather it follow the normal own trend highly influenced by government political decisions and policies.

Besides, the findings of the study illustrate that tax revenue collection in the country in general and in Ethiopian Revenue and Custom Authority in particular faces various challenges. It is identifies in the study that, lack of capacity building and training. Accountability system is not backed up with reward and punishment as well while corruption rampantly hit employee who especially works on cash registration controllers. In addition, performance appraisal and evaluation of the employee is not supported by the actual efficiency and performance of workers.

Moreover, it is found in the study that poor creativity in electronic media transmission to address the necessary message on attractive way, unavailability of publication in English language as well as administration and modernization of webpage is not done on sustainable manner. Fear of decision making in proper period to avoid risks of the adverse consequences of decisions is also another challenge that the office faces. Institutional complain handling and resolution mechanism is found to be unfair and appeals presented by taxpayers are usually discarded without providing solution. .

Inadequate software application, network connection problem, shortage of supply of cash register machine due to shortage of foreign currency, weak maintenance services for the cash register machine, absence of efficient registration process to get tax identification number at regional offices, are the major challenges, which ERCA faced in collecting adequate revenue. Only few private limited companies (Plc) use the E-filling tax payment system due to lack of awareness and promotion linked with system. In addition, this service is not provided for sole proprietorship. This makes the tax payment system clumsy, the cargo-scanning machine is not available as per the demand required, and the single window service is not well developed.

5.3. Recommendations

Based on the findings and conclusions drawn concerning the determinants of tax revenue performance and challenges, the following recommendations are made.

1. It is found in the study that the increase in government investment unlike the private one has made the contribution of economic growth to tax revenue low. Hence, government should promote adequate private investment in order to diversify its tax revenue sources.
2. Ethiopian Revenue and Custom Authority (ERCA) should enhance creativity in electronic media transmission to address the necessary message to taxpayers in attractive way.
3. ERCA should make the directives available in many local languages in addition to the one documented in English language.
4. ERCA administration and modernization of webpage should be done in sustainable manner.
5. ERCA should upgrade the management skills in decision-making based on merit instead of nepotism and political loyalty.
6. The government should work on adequate supplies and distribution of cash register machines as well as maintenance.
7. ERCA should expand the use of E-filling tax payment system by creating awareness and promotion about the system.
8. ERCA should increase the availability of the cargo-scanning machine at the border posts.
9. ERCA should develop the single window service where deemed necessary.
10. The government should consider developing its domestic tax base and gradually open up the market before liberalize the economy to the rest of the world. Now, the country is negotiating for Common Market for Eastern and South Africa Free Trade Area (COMESA FTA), Continental Free Trade Area (CFTA) and World Trade Organization (WTO) which advocate liberalization of trade. Therefore, the concerned body should give due attention and more emphasis for these negotiations to grasp the benefits of being member of such organizations. No country is going to be separated island while other countries are coming into one market system.
11. Education is essential variable for the tax revenue performance, so the policy maker should give further consideration to enhance the knowledge of ERCA staffs and taxpayers.

12. The government should encourage private investor to engage in different business activities to enhance the tax revenue performance because the current economic growth achieved through high public investment. Similarly, the government should be able to increase the investment sourced from the internal sector as well as be able to attract foreign investors by making the environment for investment more attractive and conducive which in turn have a positive impact on the tax revenue performance.

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