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Evaluation of private investment performance: Evidence from Ethiopia

Abdela Ahmed Abdula

Lecturer of Economics and Dean of College of Business and Economics @ Oda Bultum University, Ethiopia
E-mail: abdellahmed2013@gmail.com

Ismael Hussein Malela

Lecturer @ Oda Bultum University, CBE, Department of Accounting and finance.
E-mail: ismaelhussein074@gmail.com

Abstract---In Ethiopia, there has been various economic and political reforms for the last ten years which can motivate private investors. Even though, some improvements have been registered as a result of such reforms, the performance of private sectors became low. This study conducted to evaluate the performances of private investment in regional distribution, sector contribution, and ownership structure and employment creation. The result shows that Most of private investment projects are concentrated around Addis Ababa, with manufacturing and service sectors. In Ethiopia, foreign private projects are capital incentive while Domestic private projects have higher share in employment creation. Emerging regions in the country exhibited small number of private projects as compared to other regions. Identified variables for the study includes private investment, inflation rate, abroad money supply, GDP per capital, interest rate, exchange rate, public investment, and external debt. To enhance the analysis, Econometrics model with OLS using multiple regression was applied. The result shows that GDP per-capital, and external debt have significant positive long run effect on private investment, while broad money supply and average exchange rate have negative long run effect. Broad money supply, GDP per-capital, and external debt have significant short run effect.

Keywords---Private investment, performance, GDP per-capital, Inflation rate and Ethiopia.

Introduction

Investment activities can be done by two main sectors, government and private. Majority of government or public investment commonly focused to finance physical and non-physical development infrastructure which could not be conducted by society. However, Private investment, both foreign and domestic, plays an important role in the economy. It increases the productive capacity, creates employment opportunities, promotes technical advancement, and reduces poverty in the country. The private investment is usually more volatile than consumption spending and is responsible for much fluctuation in economic growth (World Bank, 2014). This study is intended to analysis the performance of private investment activities and its role in Ethiopian economy, with the objectives like: to assess the trends of Private investment in Ethiopia, to assess the regional distribution of private investment in Ethiopia and to evaluate major factors that determine the performances of private investment in Ethiopia.

There are a lot of problems which are arising in Ethiopian economy, To begin with, Access to finance is an impediment to increased Ethiopian domestic private investment. While credit is available to investors on market terms, a 100% collateral requirement limits the ability of some investors to take advantage of business opportunities. Additionally, an April 2011 measure forcing non-government banks to invest the equivalent of 27% of each loan made in National Bank of Ethiopia (NBE) bonds has contributed to liquidity shortages that have reduced the ability of banks to lend to the private sector. Real interest rates have been negative in recent years mainly due to high inflation. (US Department of State: 2014 Investment Climate Statement of Ethiopia 2014).

An important consideration in any types of investment activity needs different types of inputs and facilities. Private investment has its own special feature, in this regards. Because their success or failure not only determined by themselves but also, other external bodies could hamper their activities. In recent years, Ethiopia has made significant progress in infrastructural development. Public investment rose from about 5 per cent in the early 1990s to 18.6 per cent of gross domestic product (GDP) in 2011, making it the third highest in the world (Moller and Konstantin, 2015). Its infrastructure indicators compare relatively well with other low-income countries. In an analysis of 124 countries over four decades, Ethiopia ranked among the fastest 20 per cent in terms of infrastructure growth (World Bank, 2015).

Ethiopian public investment rate is the third highest in the world but private investment rate is the sixth lowest; the current 'big push' of public investment – led development has delivered positive results in the past but the development of strong vibrant private sector and urgent improvement in trade logistics are needed to sustain high growth.(WB Ethiopian economic update 2013). However, the major challenges to the Ethiopian economy in relation to private investment are privatization (structural adjustment Program) process so slow; people saving capacity low, in turn low levels of capital accumulation, the location specific factors that can hamper private investment did not addressed properly, distribution problems in private projects exist (private projects highly concentrated around Addis Abeba), the implementation rate of private projects are

different in different regional states, lack of financial and economic infrastructure investment exhibited in some regions, thus All these and other challenge lead to poor performance in investments and involvement of private sector's investors in the economy.

Methods

Research Design

The main data source of the study is secondary data collected from various governmental and non-governmental institutions through CD and website. The collected data were analyzed by STATA 13 software; econometrics model with OLS multiple regressions analyses conducted in order to specify the model. Each variables properly define to avoid ambiguity, and finally both per and post diagnostic test conducted in order to avoid the inherent problems in time series data.

Research area

Ethiopia's vast land, favorable climate, and water and land resources combine to make it an incredible hub for investment. Located in the Horn of Africa, Ethiopia is at the crossroads between Africa, the Middle East and Europe. Within easy reach of the Horn's major ports, Ethiopia is close to its traditional markets for export products the Middle East and Europe. This geographical proximity provides the major exporters in the world.



Figure 1. Geographical location of Ethiopia

Data Sources and Methods of data collection

The main data sources of the study are secondary data collected from various governmental and non-governmental institutions such as Ethiopian economics

association(EEA); NBE (national bank of Ethiopia different reports), MoFED (Ministry of finances and economic development), CSA (central Statistics Authority), EIC (Ethiopia investment Commission) and other institutions report (various issues) in the nation. In addition to these, Secondary data from World Bank, Africa development Bank (AfDB) and IMF report of various years included in the study for comparison purpose.

Method of data analyses

The data was analyzed using STATA 13 software. Data analysis conducted based on the data obtained from different secondary sources. Simple descriptive statistics including the uses of mean, standard deviation, and correlation coefficient computed to assess the performances of private investment based on summarize the data. While, econometric model include the use of time serious econometrics models to verify the association of independent variables with the dependent variables.

Model Specification

The Classical (Traditional) methodology, which dominates empirical research in economics observes statement of hypotheses, specification of the mathematical model and specification of the statistical model in econometric modeling to enhance the analysis of an econometric problem (Gujarati; 2004).

The OLS regression model formulated for relationship between the dependent variable and explanatory variables.

$$Y_i = \alpha + \beta X_i + e_i \quad \dots\dots\dots(1)$$

Where; Y_i is (Dependent Variable) the ratio of nominal private investment to GDP, X_i is (Explanatory Variables) the observable variables representing factors affecting Private investment, α is constant intercept and β 's are Parameters to be estimated, and e_i is a random error term with a mean of zero.

Econometric model introduce hear in collaboration with coefficients of parameters and economic variables. In this case, an econometric model formulated and adequate econometric techniques adopted to assess the status and performance of private investment in Ethiopia.

$$pi = f(gdpc, pui, gir, alie, aer, eop, edb, m2, lagspi, stdmy2) \dots\dots\dots (2)$$

The Econometric model is:

$$\text{Logpi} = \beta_0 + \beta_1 \text{loggdpc}_t + \beta_2 \text{logpui}_t + \beta_3 \text{loggir}_t + \beta_4 \text{logalir}_t + \beta_5 \text{logaer}_t + \beta_6 \text{logeop}_t + \beta_7 \text{logedb}_t + \beta_8 \text{logm2}_t + \beta_9 \text{lagspi}_t + \beta_{10} \text{stdmy2}_t + \varepsilon_t \dots\dots\dots (3)$$

Variable definition

The dependent variable in this study is the ratio of Nominal Private Investment to GDP (Pi), which is proxy for the performance of private investment in the economy. It captures both domestic and foreign private investments in the country over the period under consideration. The explanatory variables are:

- Real GDP Per-capita (gdpc) /proxy for market size/ in this study the value of Real GDP Per-capita measured in birr.
- Nominal Public Investment as percentage share of GDP (pui) it measured the ratio of public investment to GDP.
- General Inflation Rate (gir)/proxy for Macroeconomic instability/; it measured in average rate of inflation in the year.
- Average Lending Interest Rate (alir) /Proxy for cost of capital/ it measured in average rate of lending interest rate in the year.
- Periodic weighted Average Exchange Rate (aer) it measured in average exchange rate in the year.
- (Export + Import) as percentage share of GDP (eop)/Proxy for economic openness/ it measured the summation of birr amount of both export and import as percentage share of GDP measured in birr.
- External Debt as percentage share of GDP: (edb) it measured the summation of birr amount external debt as percentage share of GDP.
- Private investment lags (lagspi). /Proxy for investment climate/ one period lag of private investment as percentage share of GDP.
- Broad money as percentage share of GDP (m_2)/Proxy for financial development/ birr amount of broad money supply as percentage share of GDP.
- Structural Dummy (stdmy)/D=0, and D=1 for time “before 1991” and “after 1991” respectively/ and Error term or a vector of stochastic disturbance term (ϵ)
- Investment means expenditure of capital in cash or in kind or in both by an investor to establish a new enterprise or to expand or upgrade one that already exists;
- Capital means local or foreign currency, negotiable instruments, machinery or equipment, buildings, working capital, property rights, patent rights, or other business assets;
- Investor means a domestic or a foreign investor having invested in Ethiopia;
- Domestic investor means an Ethiopian national or a foreign national treated as a domestic investor as per the relevant law, and includes the government, public enterprises as well as cooperative societies established as per the relevant law;
- Foreign investor means a foreigner or an enterprise wholly owned by foreign nationals, having invested foreign capital in Ethiopia or a foreigner or an Ethiopian incorporated enterprise owned by foreign nationals jointly investing with a domestic investor, and includes an Ethiopian permanently residing abroad and preferring treatment as a foreign investor;
- Private investor includes both foreign and domestic investors.

Tested hypotheses

The study tested the following hypotheses in order to analyze the performance of private investment in Ethiopia.

Hypothesis 1: Real GDP per capita expected to have a positive impact on private investment.

Hypothesis 2: Public investment expected to has a positive impact on private investment.

Hypothesis 3: Inflation expected to has Negative impact on private investment.

Hypothesis 4: Interest rate expected to has negative impact on private investment.

Hypothesis 5: Exchange rate expected to has negative impact on private investment.

Hypothesis 6: Economic openness expected to has positive impact on private Investment.

Hypothesis 7: External debt expected to has negative impact on private investment.

Hypothesis 8: Broad money supply expected to has positive impact on private investment.

Hypothesis 9: Private investment lags expected to has positive impact on private investment.

Hypothesis 10: Current Government structure expected to has positive impact on private investment.

In other words, β_1 , β_2 , β_6 , β_8 , β_9 and β_{10} are expected to be greater than zero or have positive sign. While, β_3 , β_4 , β_5 , and β_7 are expected to be less than zero or negative sign.

Diagnostic Test

In developing the model, important statistical techniques such as transformation, correlation test, Durbin-Watson Test, unit-root test and error correction techniques applied to account for the various inherent problems of time series data such as heteroscedasticity, multi-collinearity, autocorrelation and non-stationary.

Descriptive Statistics results/ Performances of Private Investment in Ethiopia /

According to table 1, The Ethiopian Investment Agency (EIA) and Regional Investment Offices licensed a total of 27538 projects having a combined investment capital of Birr 440,023 million in specified period. The total Private investment (both Domestic and foreign) projects constituted 99.7, 99.3 and 99.49 percent of the total pre-implemented, implemented and operational projects respectively. Out of the total private investment projects in 1992-2008, 29,190 were domestic with a capital of Birr 249,886 million had a percentage share of 87, 48.60 and 62.12 percent from the total investment in specified period in terms of number of project, capital invested and permanent job opportunity creation.

Table1
Licensed Investment Projects by Investment Status and Type (1990 - 2018GC)

Investment Type	Pre-Implementation			Implementation			Operation			Total		
	No. of Projects	Capital mln Birr	Perm. Empl.	No. of Projects	Capital mln Birr	Perm. Empl.	No. of Projects	Capital mln Birr	Perm. Empl.	No. of Projects	Capital mln Birr	Perm. Empl.
Domestic	23,955	213,835	889,160	1,599	14,659	77,619	3,636	21,391	117,146	29,190	249,886	1,083,925
Percentage	87.002	48.60	62.12	90.08	50.26	81.53	79.56	50.88	62.08	86.15	48.88	63.19
Foreign	3,524	195,997	533,006	164	8,671	16,916	911	16,002	67,270	4,599	220,671	617,192
Percentage	12.998	44.54	37.24	9.23	29.73	17.76	19.94	38.06	35.65	13.57	43.16	35.98
Public	59	30,191	9,242	12	5,832	673	23	4,648	4,279	94	40,671	14,194
Percentage	0.002	6.86	0.64	0.67	20.01	0.01	0.5	11.16	2.37	0.28	7.96	0.83
Grand Total	27,538	440,023	1,431,408	1,775	29,163	95,208	4,570	42,042	188,695	33,883	511,228	1,715,311

Source: Ethiopian Investment Agency

While 4,599 projects were foreign with total capital of Birr 220,671 million. The investment projects licensed during the specified period are expected to create job opportunities for about 617,192 permanent workers which consists a percentage share of 36 from the total investment in the period (Table1).

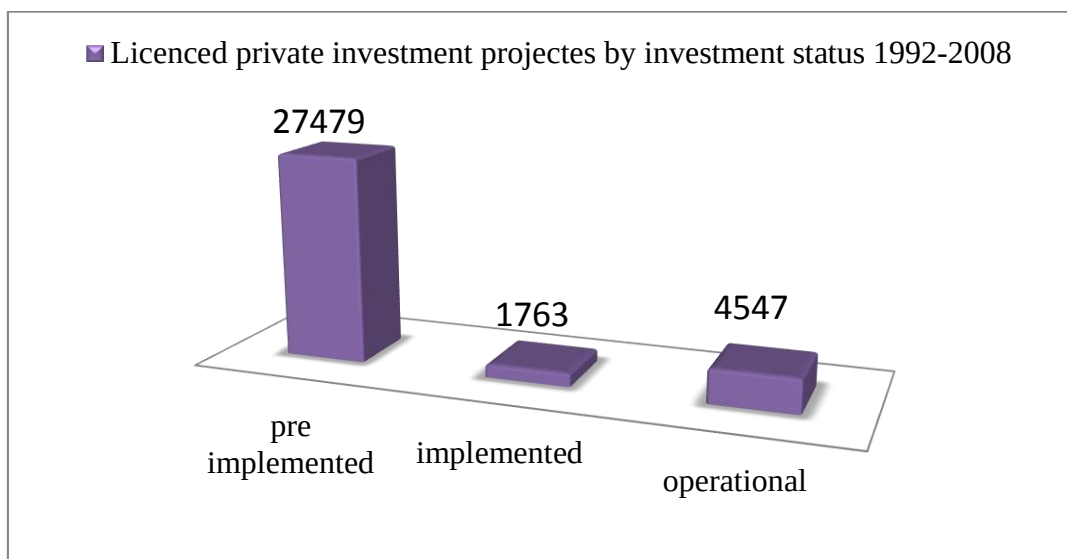


Figure 2. Licensed private investment projects by investment status 1990-2018
Source: Ethiopian Investment Agency

When we see the sector and sub sector composition of private investment in Ethiopia from Appendix 1 and 2 from all sectors manufacturing sector is the

leading followed by Agricultural in terms of both number of projects and employment opportunity creation. From the period 1992-2008, Manufacturing and Agriculture had 42% and 18% in number of projects while 42.29% and 20.69% in employment opportunity creation from the total private investment approved in the period. Thus both sectors alone consist above 60% of employment creation and registered number of private projects while around 48% of Capital invested in the private projects. Fishing is the least sector in all aspects of private investment in the period.

Looking at the investment commenced profiles of the Ethiopian Investment Agency and Regional Investment Offices, a total of 1157 investment projects involving Birr 2,047,030 million capitals were commenced operation during 2009 – 2018.

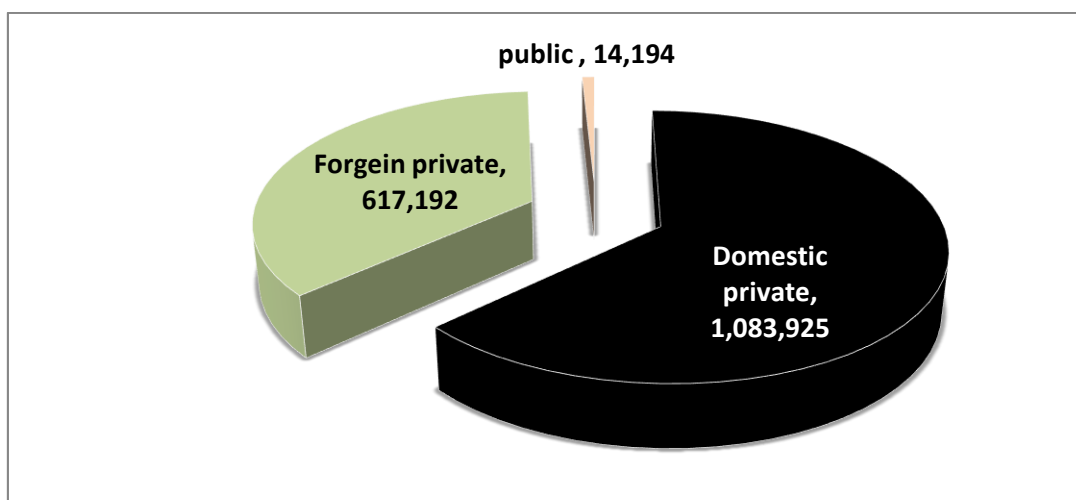


Figure 3. Licensed investment projects by ownership Structure and expected employment opportunity 1990-2018

Source: Author calculation based on Ethiopian Investment Agency; NBE and MoFED.

Out of the commenced operation investment projects in the period 2009 – 2018, we can observe from the table 2 that 1157 investment projects with investment capital of 2,047,030 million Birr were operational and create temporary and permanent job opportunity 66,385 and 35773 respectively.

Trends of Private Investment in Ethiopia

Private investment as a percentage share of GDP Exhibit different trends in Ethiopia from 10.40% of GDP in 1990 GC to the end of period specified in this study 21.78 % of GDP in 2018GC. In the period the maximum amount 67.99% registered in 2008, while the minimum 6.50% in 1997GC. In the study period on average the percentage share of private investment to GDP is 17.34%, the Ethio - Eritrean war period (1998-1999) registered a smallest while the Ethiopian millennium year (2008) largest share of private investment exhibited. The higher inflation rate after 2008 deteriorates the rate of private investment.

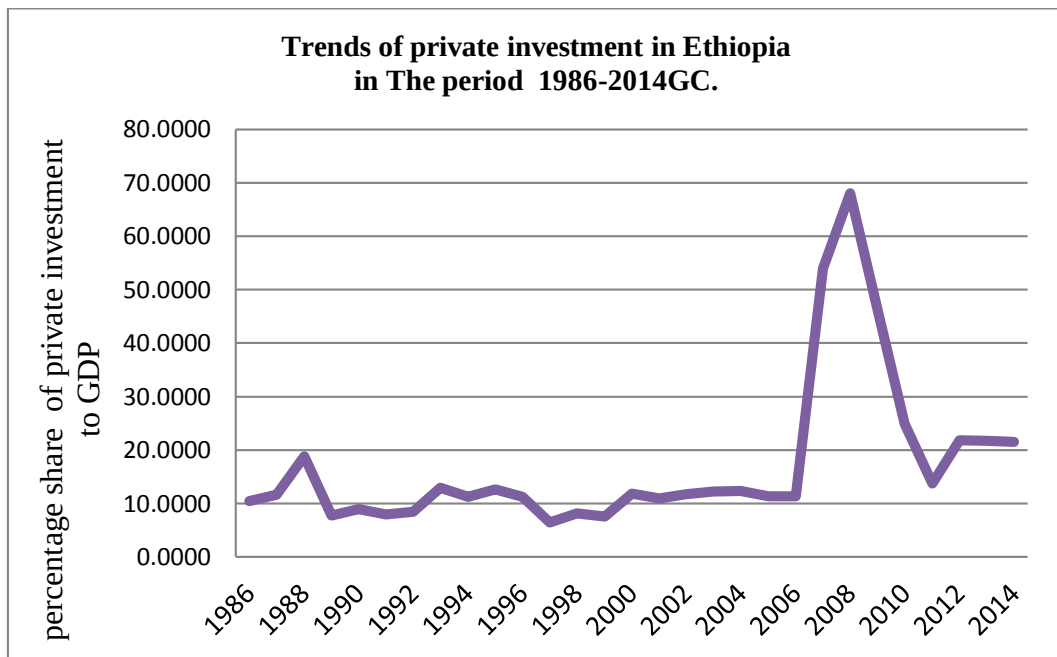


Figure 4. Trends of private investment as a percentage share of GDP (1990-2018)

Source: Author computation; NBE, MoFED, CSA, macro-economic and social indicators (adjusted at GDP current market price) various years' report

In General, the above figure indicates that in the early stage of the study period private investment as a percentage share of GDP had a lower share to GDP around 10% and between 10% to 18% for the long period and registered a record share of 67.9% in 2008 and stay above 50% in 2007 and 2008 and started to decline until 2011 and stay above 20% for the last four Years. The last four years record is a minimum benchmark for developing countries to achieve sustainable development for the nation.

Regional distribution of private investment in Ethiopia

The regional distribution of the operational private investment projects in table 4 revealed that Addis Ababa, being the capital city with relatively better facilities, enjoyed the largest share (about 44.8 percent) from the total operational private investment projects. This amounted Birr 165,586 million investment capital (35.19 percent of the total investment capital) during the period (1992-2008GC). Oromia, SNNPR and Amhara appeared to be the largest investment attractors with a respective share of 21.70 percent, 11.49 percent and 9.22 percent from the total operational private investment capital. The multiregional projects had 12.66% and 16.04 % share in terms of capital outlay and employment creation respectively. Gambella region is the least in terms of capital outlay and number of project but Ethiopian somali region was the least in employment following

gambella in number of projects and capital outlay. All developing regions*, Harari and Dire Dawa have insignificant shares both in terms of number and capital outlay of approved investment projects (Table 3). The continued concentration of most of investment projects in urban areas and non-agricultural activities

Table 3
Operational private Investment Projects by Region of Investment, capital outlay and permanent employment creation (1992GC - 2008GC)

Region	Domestic			Foreign			Total private investment projects		
	No. of Projects	Capital mln Birr	Perm. Empl.	No. of Projects	Capital mln Birr	Perm. Empl.	No. of Projects	Capital mln Birr	Perm. Empl.
Addis Ababa	12,755	119,407	434,584	2,390	46,179	105,662	15,145	165,586	540,246
Afar	113	8,093	15,591	13	230	1,082	126	8,323	16,673
Amhara	2,980	17,333	143,329	136	26,812	43,248	3,116	44,144	186,577
B.Gumze	314	1,431	10,340	10	142	530	324	1,573	10,870
Dire Dawa	900	5,313	22,846	47	6,919	4,431	947	12,232	27,277
Gambella	65	431	5,575	3	46	242	68	477	5,817
Harari	429	984	9,226	3	10	21	432	994	9,247
Multiregional ²	155	5,919	12,389	636	53,633	260,519	791	59,552	272,908
Oromia	6,137	57,477	249,106	1,196	75,917	172,694	7,333	133,394	421,800
SNNPR	3,768	18,339	118,871	116	9,610	21,594	3,884	27,949	140,465
Somali	101	841	3,121	11	85	1,536	112	926	4,657
Tigray	1,473	14,319	58,947	38	1,087	5,633	1,511	15,406	64,580
Grand Total	29,190	249,886	1,083,925	4,599	220,671	617,192	33,789	470,557	1,701,117

Source: author calculation; Based on Ethiopia Investment Agency

* Regions relatively few or little development activates/ infrastructures existed and traditionally called as developing regions. Benishangulgumz, Afar, Ethiopian somale and Gambela regions included in the list.

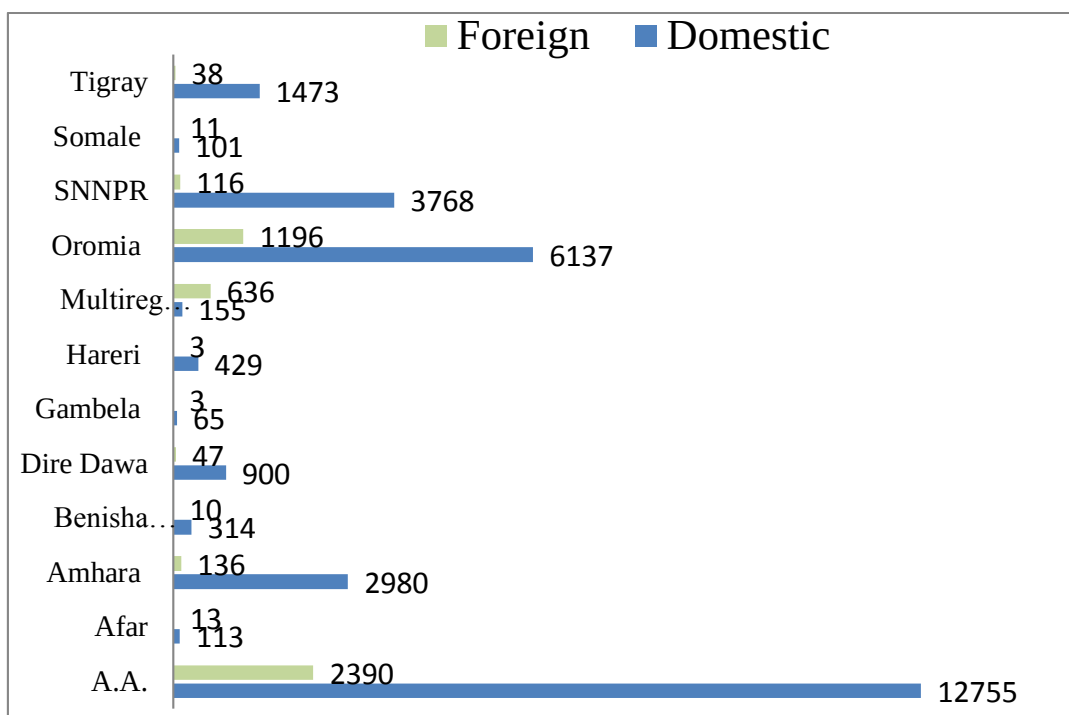


Figure5. Operational private investment projects by region of investment and ownership structure 1992GC - 2018GC

Source: author calculation; Based on Ethiopian Investment Agency.

Out of the total 1168 private investment projects that went in to operation in the period 2009-2015, about 387 private projects (33.13 percent) with Birr 10135.5 million capital were commenced operation in Addis Abeba, followed by 357 projects (30.56 percent) with Birr 3393.7 million capital were in Oromia, 234 projects (20.03 percent) with investment capital of Birr 909.5 in Tigray; 105 projects (8.99 percent) with Birr 396.7 million capital in Amhara, and 39 projects with investment capital of Birr 346.6 million in Afar regional state. Dire Dawa, Benishangulegumz and Gambella commenced only one project for each region, Ethiopian somale region pass the period without a single project commenced. (Table4)

Table 4
Number and capital invested (in millions of birr) private projects which have commenced operation by region. (2009GC - 2015GC)

Region	Private investment		
	No. of Projects	Capital mln Birr	Average capital invested for single project (millions of birr)
Addis Ababa	387	10135.5	26.19
Afar	39	346.6	8.89
Amhara	105	396.7	3.78

B.Gumze	1	13	13
Dire Dawa	1	6	6
Gambella	1	750	750
Harari	3	26.5	8.83
Multiregional	29	1082	37.31
Oromia	357	3393.7	9.51
SNNPR	11	102.9	9.35
Somali	0	0	0
Tigray	234	909.5	3.89
Grand Total	1168	17162.4	14.69

Source: Authors calculation; based on Ethiopian Investment Agency

When we look at the regional distribution of private investment in sector, manufacturing and real estate and service rendering sector are dominantly implemented in Addis Abeba and special zone surrounding Addis Abeba zone. Agriculture dominant implemented in Oromia, Amhara and SNNPR regions. Most of the developing nations are don't properly utilized their animal population and water resources (rivers) with wide range of potentially irrigated land in the regions.

Factors affecting the performances of private investment in Ethiopia /Econometrics Results/

Any sequence that contains one or more characteristic root/s/that are equal to one is known as a unit root process. For OLS estimation in general to be valid, the error term must be time-invariant, that is, stationary. in estimating the short-run dynamic model, a unit root test was made both for the dependent and independent variables using the Augmented Dickey Fuller Technique /ADF/ and the result is presented in the following table.

Table 5
Augmented Dickey Fuller (ADF) Unit-Root Test Result

Variables	ADF in level 5 Critical Values = - 2.99	ADF first Difference 5% Critical Value = - 2.99	Order of integration
logpi	-2.14	-3.06	I(1)
loggdpc	-2.17	-3.38	I(1)
logpui	-4.23	-3.49	I(1)
logm2	-2.01	-3.07	I(2)
Logedb	-2.15	-3.72	I(2)
Loggir	-4.27	-3.49	I(1)
Logalir	-2.69	-4.12	I(2)
Logaer	-2.27	-3.45	I(1)
Lagspi	-2.14	-3.06	I(1)

Source: Author Computed from secondary data (2018)

Co-Integration Test

Deviations from long-run equilibrium relationship due to short run shocks will be corrected over time with error correction factor. Two or more time series variables are said to be co-integrated if the test statistics (t-value) of ECM is greater than the critical value in absolute terms. With this background, a co-integration test was made using Augmented Dickey-Fuller Technique to see whether the time series variables considered in this study are co-integrated or not, and the result is presented in table 6. The Augmented Dickey-Fuller Test in table 6 shows that the test statistic for co-integration test is significant at 1%, confirming that the data series under consideration are co-integrated in the long run.

Table 6
Augmented Dickey-Fuller Co-integration Test
No. of Observations = 27

Critical Values

Test Statistic		at 1%	at 5%	at 10%
Z(t)	-5.229	-3.736	-2.994	-2.628
<i>p-value for z(t)=0.0000</i>				

Source: Own computation, STATA output data from secondary sources (2015)

Long run OLS Result

In this portion the empirical results of data output of STATA 13 deeply interpreted. From The total variables, only one of them, this is investment lags (lagspi) in natural form. The rest of the variables are put in the form of natural logarithm. Except the structural dummy variable, all variables applied to robust OLS regression in order to address the problem of heteroscedasticity.

Table below shows the OLS estimated coefficients of each variable and their t-statistic and probability values. After the basic problems expected to affect time series data were accounted for in this manner, the OLS regression was run (as shown in table 7), and long run relationship between the dependent variable 'private investment as a percentage share of GDP' and the 'explanatory variables' is formulated as follow.

Table7
Long Run OLS Regression Result

Variables	Coefficients	Robust Standard Errors	T	P>t	95% Conf. Interval]	
Logpui	-0.179	0.095	-1.87	0.076	- .3797534	.206854
Loggdpc	0.212**	0.038	5.52	0.000	.1313135	.293089
Loggir	-0.070	0.056	-1.24	0.230	- .1885733	.0481707
logm2	-0.565***	0.198	-2.85	0.010	- 0.980564	-.151004

Logedb	0.305***	0.078	3.89	0.001	.1415317	.4697361
Logalir	-0.526	0.361	-1.46	0.160	- 1.280367	.2264364
Logaer	-0.231***	0.10340	-2.24	0.037	- .4480612	-.0152073
Lagspi	0.044	0.002	16.49	0.000	.038677	.04988811
stdumy2	0.486	0.403	1.20	0.243	- .3560142	1.32864
Constant	3.056	1.186	2.58	0.018	.5808287	5.531492
Number of observation	29					
<i>R-squared</i>	0.9680					
F(8, 20)	88.28***		<i>Prob>F =</i> 0.000	<i>Root MSE =</i> .12822		

Durbin-Watson d-statistic (11, 30) = 2.075366

Source: Own computation, data from secondary sources (2018)

The model can be restated as follow:

$$\text{Logpi} = 3.056 + 0.212\text{loggdpc} - 0.179\text{logpui} - 0.07\text{loggir} - 0.526\text{logalir} - 0.231\text{logaer} + 0.305\text{logedb} - 0.565\text{logm2} + 0.044\text{lagspi} + 0.486\text{Stdmy2}$$

R²= 96.80%, and N= 29 observation From $\Delta Y_t = \delta Y_{t-1} + \epsilon_t$; which is derived from the simplest unit root model for Auto Regressive of Order One AR (1)/ i.e. $Y_t = \gamma Y_{t-1} + \epsilon_t$, the null hypothesis takes the form of $H_0: \delta = 0$ (i.e. the data series is non stationary when $\gamma = 1$); or/and the alternative hypotheses $H_1: \delta < 0$ (i.e. the data series is stationary when $\gamma < 1$); where $\delta = (\gamma - 1)$, and Δ is the difference operator. The Augmented Dickey Fuller Unit-Root test has depicted that variables log general inflation rate (**loggir**), and log of public investment as percentage share of GDP (**logpui**) are stationary at level, while the rest of the variables are non-stationary. Thus, to address in built problem of unit root autoregressive component, the first difference is taken, and tested for unit-root. Accordingly, most variables of interest are found to be stationary at first difference (integrated of order one i.e. I(1). As presented in table 5 all variables are stationary at I(1) or I(2).

Error Correction Model

Engle and Granger two step Error Correction Model /ECM /version of the equation was estimated in order to derive the short-run coefficients of private investments model. The error correction term {ECT (-1)} was derived as the lagged residuals generated from the estimated static long-run co-integration equation.

In order to analyze both the short-run and long run investment behavior regarding the explanatory variables, a private investment function was developed and estimated at levels to determine the long-run behavior, and then re-estimated on differenced terms. A general-to-specific approach was utilized where insignificant repressors were sequentially deleted to arrive at the preferred

specification as shown in Table 8 below. The ECM is in differenced form to ensure stationary of variables.

Table 8
Short run OLS Regression Result

Variables	Coefficients	Robust Standard Errors	T	P>t
D(Logm2)	-0.411	0.186	-2.20	0.027
D(Loggdpc)	0.229	0.089	2.56	0.010
D(logedb)	0.283	0.097	2.91	0.004
D(logalir)	-0.1001	0.088	-1.14	0.256
D(logaer)	-0.067	0.131	-0.51	0.609
D(logspi)	0.040	0.002	14.47	0.000
ECM(-1)	-0.525	0.003	-3.87	0.000
Constant	0.066	0.865	0.08	0.938
Number of observation	29	Durbin-Watson d-statistic (9, 19) = 2.0414		
<i>R-squared</i>	0.9435			
F(9, 19)	65.09		<i>Prob> F = 0.000</i>	<i>Root MSE = .13816</i>

Source: Own computation, data from secondary sources (2018)

The coefficient of ECM shows that short run deviations of private investment is corrected/adjusted to long run equilibrium very fast at a rate of 52.5% each year. The negative sign shows that the short run private investment dynamics is below the long run equilibrium level.

Interpretation of Results

In this section, the above presented long run and short run relationship between the dependent variable and explanatory variables is briefly described and interpreted in light of theoretical Background and contextual realities of Ethiopia.

Broad Money Supply (logM2)

Financial development, which captures as indication for credit access to the private sector exhibit negative and significant effect on private investment activity in Ethiopia in both short and long run. The results of this study indicates that, when credit to the private sector increase across time by one unit, private investment as % of GDP decreases by 0.56 and 0.41 units in log run and short run respectively. Theoretically, financial requirement that is required to commence investment projects has encouraging effect on the development of private sector investments. Hence, it creates a favorable environment by creating linkage in facilitating decision to invest and increases technological specialization

and selection of projects to be launched and attached with further risk diversification. Conversely the result of the study contradicted with empirical investigation of (Harvey 1985; Oshikoya 1994; Kumar and Mlambo 1995; Workie 1997; Harupara 1998; Getachew1997).

External Debt (logedb)

External Debt (logedb) is also found to have significant positive effect (at 5% level of significance) on private investment (pi) both in the short run and long run. As the results in table 7 shows, a 1% increase in external debt ($exdt$) results in about 0.30% increase in private investment (pi) in the long run. Similarly, a 1% increase in external debt ($exdt$) results in about 0.28% increase in private investment (pi) in the short run. This finding is in line with the finding by Mbanga (2000), but contradicts with that of Frimpong& Marbuah (2010), and Ronge & Kimuyu (1997). Theoretically, too much external debt burden could have negative effect (as it could divert national resources towards debt servicing and by creating dependency behavior); or have a positive effect (as it could promote investment in productive capital projects). In Ethiopia, debt to GDP ratio is not so high, and a significant portion of it is soft loan with low interest rate. Besides, loan funds are usually used for productive investment projects essential for private investment such as physical and human capitals which justify the finding in this regard.

GDP Per-Capita (loggdpc)

The other determinant factor that is found to have significant positive effect on private investment (pi) both in the long-run and in the short run (at 5% level of significance) is GDP per-capita /**rgdpc**/. 1% increase in 'gdpc' result in 0.21% and 0.22% increase in private investment (pi) in both long run and short run respectively. The result in this study is in line with the findings of other researchers such as Frimpong and Marbuah (2010), Mbanga (2002), esbalew (2014), and Akpalu (2002); though it contradicts with that of Asante (2002). In the context of Ethiopia, this significant positive effect is expected as 'rgdpc' has nearly doubled during the period under consideration (though it is still very low in absolute terms). Since this variable considered as proxy for market size, this increase in 'rgdpc' is believed to have raised the effective demand in the economy through increased disposal income.

Average Exchange rate (logaer)

Unstable exchange rate movement affects private investment rates negatively. Real devaluation of exchange rate affects private investment negatively through raising the real cost of imported goods. The long run effects in this study shows that, 1% change in private investment need 0.23% change in average exchange rate. The result shows negative and significant at 5% level of significance.

Other Variables

- Public investment as percentage share of GDP (logpui) has significant negative long run effect on private investment at 10% level of significance. but insignificant negative effect at 5% level of significance.

- The regression results show that other variables such as private investment lags (lagspi) ,which is proxy for investment climate, has positive relationship in both short and long run but insignificant at 5% significant level.
- structural dummy(stdmy) /for the period before and after 1991 macroeconomic policy reform/ have all a positive long run contribution to the private sector investment though not significant.
- On the other hand, variable like general inflation rate (loggir) and average leanding interest rate (logalir) have insignificant negative long run effect on private investment.

Summary of the finding

This paper gives more emphasis to assess the status and performance of private sector investment in bringing robust economic growth where building strong economy from highest share given to the private sector involvement in the economy. In Ethiopia where poverty and underdevelopment persists and the private sector investment activity is not extensive enough, state-led system with highest percentage share of public investment exists. Privatization process is so slow and public sector uses significant resources to perform investment activities. The higher concentration of private investment in Addis Abeba and surrounding special Oromia zone indicates that the regional unbalance of private investment in Ethiopia. Investment incentives, Tax holiday by itself as such no difference (only 1 year) between Addis Abeba and other regions. Almost all of the so called developing regions including Harari and Dire Dawa commenced small number of private projects as compare to others.

The major macroeconomic variables that determine the performances of private investment in Ethiopia are GDP per capita, broad money supply, external debt and average exchange rate. Suitable policy prescription and proper management will help to achieve GTP II, Sustainable Development Goal and Agenda 2025of Africa Union.

Conclusion

In Ethiopia most of private investment concentrated in Addis Abeba and surrounding special zone of Oromia. Correspondingly, Manufacturing, Real estate, renting and business activities dominant sector in both Addis Abeba and Special Zone of Oromia regions. Agriculture and forestry, Manufacturing and Service rendering business are a dominate sectors to implemented private project in the rest of Oromia region, Amhara, Tigray and SPNNPR regions. In Other regions meaning in Gambella, Ethiopia somale, Afar, Benishangule Gumz , Harari and Dire Dawa Implemented small number of projects with different sector compositions. Job opportunity and Capital outlay of projects is in accordance with the number of private projects.

Domestic private projects has a line share in employment opportunity while foreign investments are more capital intensive and technologically capable and have a potential to create positive externality. In the early stage of study period, private investment as a percentage share of GDP had a lower share to GDP around 10% and between 10% to 18% for the long period and registered a record

share of 67.9% in 2008 and stay above 50% in 2007 and 2008 and started to decline until 2011 and stay above 20% for the last four Years. The last four years (above 20%) record is a minimum benchmark for developing counters to achieve sustainable development.

Accordingly, the results of OLS regression analysis show that, rising real per-capita income of the peoples has crucial positive effect on private investment by way of increasing market demand for goods and services, which in turn trigger private investment. Likewise, external debt, as long as it issued in productive investment (without creating serious debt servicing burden on the economy) has favorable effect on the private investment in countries like Ethiopia where there is serious shortage of finance.

On the other hand, real exchange rate appreciation in the time of higher export capacity causes to lose external competitiveness; and affects the rate of private investments negatively. Similarly, the need of financial deepening in enhancing private sector development in the economy captured by broad money as a percentage of GDP also shows a positive impact. But both long run and short run results indicates negative and significant impact on private investment activities in Ethiopia.

Recommendation

Based on the findings the following recommendation forwarded.

- Investment Incentive Mechanisms such as Tax holiday and others should have wider variations for investment project implemented in Addis Abeba (and around Addis Abeba special Oromia Zone) and other regions. It helps to diffuse private investment projects in different parts of the nation.
- Infrastructural investment especially for the so called developing region will stimulate the private sector involvement and participation.
- Enhance the real per-capita income of people by creating various employment opportunities and income generating means,
- Create fertile investment environment by ensuring consistent investment policies and requirements, by creating clear and efficient bureaucracy and good governance at all levels, and by opening more space/investment opportunities/ for private investors,
- Efficiently utilize external sources of finance (loan) for productive investment activities,
- Ensure macro-economic stability by containing the inflationary trend persisted over a longer period,
- Ensuring stability in foreign exchange by promoting exports or increasing import substitution mechanism.
- Ensuring financial development for private sector or increasing access to finance for private investors.

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