

DETERMINANTS AND CONSTRAINTS OF PRIVATE INVESTMENT IN ETHIOPIA

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ABSTRACT

This paper attempts to identify the macro-economic determinants of private investment. Using investor level information some of the constraints to entry, operation and expansion of private investment in Ethiopia were also identified. Private investment during the period 1975-1989 declined sharply and started to increase slightly during 1990 and 1991 as the previous government started "reform" in 1989. The rate of private investment continued substantially from 1992. These trends of private investment are analyzed using both econometric and survey methods. The econometric analysis, using time series data for the period 1975-1994, shows that private investment in Ethiopia is determined by the availability of finance, the real exchange rate, policy and external debt. The real interest rate, growth of per capita GDP, public investment and change in terms of trade did not affect private investment during the period of the study. The survey of investors/enterprises which have acquired investment certificates from 1992-1995 in the two regions (Region 14 and Region 1) shows that bureaucratic procedures, lack of infrastructure particularly power and access to finance are the leading constraints for entry, operation and expansion. In addition to the above constraints access to and cost of land are the specific leading entry constraints in Region 14. The other areas of business environment such as political/policy uncertainty and labor regulations are relatively of lesser importance. Hence both the econometric analysis and the survey have confirmed that the availability of finance rather than interest rate is a crucial determinant of private investment in Ethiopia which support the hypothesis of credit rationing. Whereas both the domestic inflation rate, a proxy for macro-economic instability in the econometric analysis, and political/policy uncertainty in the survey are not significant determinants of private investment.

1. INTRODUCTION

1.1. Background

In many developing countries the reduction in aggregate demand is often borne disproportionately by investment, especially in the public sector, rather than by

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consumption, which may be at already low levels. The recovery of private investment, particularly in the tradable goods sector, is critical for restoring overall capital formation and economic growth.

Recognizing the importance of private investment for economic growth, recent attention is focusing on its determinants taking into consideration the specific situation of developing countries i.e., lack of data for certain variables such as capital stock, real wages, real financing rates for debt and equity and imperfect capital markets.

The level of private investment in the country during the last two decades (1975-1994) was fluctuating. During the period of 1975-1989 the share of private investment to total domestic investment has declined in comparison to the share during the pre-1975 and post-1990 periods. In 1974, the share of private investment to total investment was 39.5 and it dropped to 11.7 percent in 1989. Private investment increased slightly in 1990 and 1991 as the 'Derg' Regime started "reform" early in 1989 and proclaimed a mixed economy in March 1990. The rate of private investment continued to increase substantially since 1992. This has been influenced by a substantial change in economic policy by the then 'Transitional Government' and the present government of Ethiopia which emphasized market principles and the encouragement of private sector investment through investment proclamation No. 15/1992 and recently proclamation No. 37/1996.

Specifically the rise in the level of private investment since the change of government in 1991 can be revealed based on the number of projects approved by the Ethiopian Investment Office and Regional investment offices. Following the issuance of proclamation No. 15/1992, starting from July 1992 to July 1998, 4398 projects have been awarded investment certificates with estimated investment capital of Birr 36,575.49 million. Of these projects only 1,184 projects with a capital of Birr 8731.66 million started production/service and 706 projects with a capital of Birr 6189.59 million are in their implementation phase. The remaining 2508 projects with a capital of 21654.24 million remain unimplemented as of 7 July 1998, which is 57% of the total approved projects. The case is severe when we look at the number of projects which have not yet started in Addis Ababa. In Addis Ababa, out of 1774 approved projects with a capital of Birr 19,093.75 million, only 208 projects with a capital of Birr 2950.97 million have started production/service and 278 projects with a capital of Birr 2718.17 million are in their implementation phase as of 7 July 1998. The remaining 1288 projects (73%) with a capital of Birr 13,414.61 million did not start operation after they had received their investment certificate.

During the past 4-5 years the ratio of actually fully implemented projects to approved has been very low. This low achievement rate is despite considerable effort to remove macroeconomic imbalances, the introduction of new investment legislation with far reaching incentives and an attempt to remove some of the restrictions imposed on

private investment in past legislations.

Despite the relative increase in private investment during the early phase of the structural adjustment program (1992-1996), private investment performance has been low in comparison with other developing countries (Dailami and Walton 1992). The ratio of private investment to GDP averaged 3.3 percent per annum for the period 1975-1994. This is much lower than the average for Sub-Saharan African countries which is 12.5, 8.8 and 9 percent for the periods 1970-1979, 1980-1989, and 1990-1994, respectively (Jaspersen *et al.*, 1995). The rate of private investment growth for Ethiopia is even lower than the above estimate if account is taken of the "investment" transfers from the public to the private sector following the introduction of the privatization program under Structural Adjustment Program (SAP). Thus, the low level and rate of growth of private investment has been a major problem confronting policy makers in the past two decades.

The present study is an attempt to learn more about the macro-economic determinants of private investment activity in Ethiopia during the 1975-1994 period and to identify entry, operational and expansion constraints encountered by private investors during 1992-1996. Specifically the objectives of the study are:

1. To identify macroeconomic variables that explain the low and fluctuating private investment growth;
2. To analyze the effect of policy reform on private investment growth over the long period since 1974;
3. To test for structural breaks;
4. To identify the major entry, operational and expansion constraints to private investment growth; and
5. To draw policy conclusions.

2. MACROECONOMIC DETERMINANTS OF PRIVATE INVESTMENT

The theory of investment behavior goes back to Keynes'(1936) "General Theory," who first called attention to the existence of an independent investment decision function in the economy. He observed that investment depends on the prospective marginal efficiency of capital relative to some interest rate that is reflective of the opportunity cost of the invested funds. He further pointed that because the rational assessment of the return on investment is bound to be uncertain, the "animal spirits" of private investors would be the main driving force in investment decisions.

After Keynes, the accelerator principle was the dominant theory of investment behavior especially during the 1950s and early 1960s. The accelerator theory postulated a linear relationship between investment and output. According to the

theory, given an incremental capital/output ratio, it is easy to compute the investment requirements associated with a given target for output growth. Hence there is a constant ratio of desired capital stock to output. The theory has several limitations as it disregards expectations, profitability and the cost of capital as determinants of investment. Some of the limitations are not removed by the modified version of the theory, i.e. the flexible accelerator model.

The flexible accelerator model based on the optimal accumulation of capital, associated with Jorgenson (1967) and Hall and Jorgenson (1971), assumes investment is a function of the level of output and the user cost of capital (which in turn depends on the price of capital goods, the real interest rate, and the depreciation rate). The theory has limitations with regard to its assumptions of perfect competition and exogenously determined output. The theory also disregards dynamic expectations with regard to future prices, interest rates and output.

Tobin (1969) postulated that investment decisions are a function of the ratio of the addition to the value of the firm due to an extra unit of capital installed to its replacement cost. If this ratio, called Tobin's q , is greater (less) than unity firms would want to increase (decrease) their capital stock.

As a result of the poor empirical performance of the flexible accelerator models and later Tobin's Q-theory, recent work on investment broadly falls into two categories: (1) studies on "investment, irreversibility, and uncertainty" and (2) work that has attempted to relate investment to measure of political and country risk. The latter branch of the literature is especially relevant to the determinants of investment in developing countries, since it tends to emphasize those macroeconomic or institutional features that are specific to developing countries such as vulnerability to external shocks, large external debt positions, credit rationing, complementarities between public and private investment, and shifts in income distribution (Jaspersen *et al.*, 1995).

As stated above neoclassicals argue that investment depends on the rate of interest and the level of income. Thus the theory that investment depends on the rate of interest focuses heavily on the cost of finance as the key variable; all other costs (including the availability of finance, economic infrastructure, source of capital, policy, etc.) being assumed given. However, private investment behavior in developing countries cannot be directly explained by using the standard approach based on the theory of the firm (Jansen 1992). This is because, it has been generally hard to test this model in developing countries like Ethiopia, as key assumptions (such as perfect capital markets and little or no government investment) are not applicable and data for certain variables (capital stock, real wages and real financing rates for debt and equity) are normally either unavailable or inadequate. Hence the empirical literature on private investment behavior in developing countries focuses instead on testing

several hypotheses advanced to explain variations in private investment. Accordingly, in order to overcome the limitations of the neoclassical flexible accelerator model, research has proceeded in several directions, in the process, identifying a number of variables that might be expected to affect the private investment. Such variables are expected to reflect the institutional and structural characteristics of developing countries such as lack of infrastructure, finance, as well as political factors. This may be referred to as a modified version of the basic accelerator model. The inclusion of such variables has often resulted in eclectic and ad-hoc equations, constructed for econometric convenience, without a strong and convincing theoretical basis. All these shows the attempts made by researchers to improve the theoretical basis of the macroeconomic determinants of private investment in developing countries.

Theoretical models of the determinants of private investment have been applied to developed countries with a fair degree of success. Nevertheless, empirical studies have not yet clarified which of these models is a more accurate representation of the way in which capital formation occurs in developed countries. This is more true of developing countries because of the absence of well functioning financial markets, the presence of imperfect markets, lack of data and resource constraints (see, for example, Matin and Wasow, (1992)).

Empirical studies of the determinants of private investment in developing countries have used a much more eclectic modeling approach of private investment designed to capture the distinctive institutional and structural features of those economies. They have combined the features of flexible accelerator, neo-classical and structural models in an effort to emphasize the effects of resource constraint faced by private investors in developing countries. As stated above, because of the difficulty of identifying the theoretically correct specification, this paper does not attempt to build and estimate a full scale structural model of private investment in Ethiopia. Rather it is more of an exploratory data analysis. The study used the model which takes into consideration the above problems, particularly the models used by Green and Villanueva (1991) and Oshikoya (1994). Nevertheless, the results of this study may be useful in identifying the more fundamental relationships between private sector investment and macroeconomic variables in the country, which can then be used to develop an appropriate model of investment behavior for the country. Private investment in developing countries, as reviewed by Greene and Villanueva (1991) and others like Oshikoya (1994), is determined by the real interest rate, availability of finance, economic growth, public investment, macroeconomic stability (as proxied by the rate of inflation), income per capita, the size of debt service burdens, availability of foreign exchange, changes in the exchange rate (devaluation), change in terms of trade, and uncertainty.

The following variables are treated in the regression:

where P/GDP	=	the ratio of of private investment to GDP
Pub/GDP	=	the ratio of public sector investment to GDP
GRT-1	=	the lagged percentage change in real GDP per capital
(DS/XGS) _{t-1}	=	the lagged ratio of external debt-service payments to exports of goods and services
CPI	=	the percentage change in the Addis ababa consumer price index
CR/GDP	=	the proportion of credit disbursed to the private sector to GDP
(DEBT/GDP) _{t-1}	=	the lagged ratio of the country's stock of external debt to its nominal GDP
Int	=	real interest rate
Rex	=	real exchange rate
ToT	=	change in terms of trade
D	=	dummy variable, with the value of 1 after the policy change 1991-1994 and 0 before the policy change, i.e., 1975-1990

The percentage change in the Addis Ababa consumer price index change in terms of trade, debt-service ratio and external-debt measure macroeconomic instability/uncertainty. Except for the consumer price index, the other three variables also measure foreign exchange constraints. Real exchange rate measures the impact of devaluation on private investment.

Univariate analysis, or the study of variables one at a time, is a foundation upon which multivariate analysis rests. Before moving to the regression of variables, analysis of each variable about its distribution (normal or skewed) and its trend (stationary or non-stationary) is important.

Using the methods of Box-plot and Histograms influenced by normal curve, the distribution of each variable was identified. It was found that: CR/GDP, P/GDP, (DS/XGS), (DEBT/GDP), Rex, Pub/GDP, ToT are positively skewed and CPI negatively skewed. GR and Int on the other hand are found to be almost normally distributed.

Power transformation was applied to each of the variable until they became normally distributed. Applying rule of power transformation, all of the positively skewed variables were transformed using logarithm i.e. $(\log_{10}X)$ and became normally distributed. CPI was transformed by squaring it and it is found normally distributed.

After the variables were transformed to normal distribution, each of the variables were tested for stationary using the autocorrelation function coefficient. All of them are found to be stationary. This is because, occasionally, transformations are useful in reducing a non-stationary time series to a stationary one. Therefore taking the logarithm of the original series will be useful in achieving stationary (Montgomery and Cliff 1976). Therefore, the regression is free of spurious regression problem. However, it is worth while to mention that the sample size is small (twenty years data).

2.2. Preliminary Evidence

As a first look at the evidence regarding the various factors affecting private investment, it is interesting to compare the values of independent variables with the values of the dependent variable, i.e., the ratio of private investment to GDP.

Table 1, which reports the respective values of the relevant variables during the 1975-94 period, provides support for many of the hypotheses outlined earlier. The data suggests that public investment may affect private investment through the crowding out effect as the ratio of public investment to GDP is increasing through out the period when the private investment to GDP ratio is decreasing. The data also suggests the rate of real GDP growth per capita is decreasing as the ratio of private investment to GDP decreases. The ratio of external debt-service payments to exports of goods and services is also increasing as the ratio of private investment to GDP is decreasing. Similarly the ratio of the country's stock of external debt to its nominal GDP is increasing when the ratio of private investment to GDP is decreasing which means both external debt-service payments and stock of external debt have a negative impact on private investment. The proportion of credit given to the private sector has decreased during the period of 1975-1989 when private investment was decreasing and it started to increase from 1990 onwards as private investment starts to increase in the same period (1990-1994), which means it had a positive impact through partly overcoming the financial constraints faced by private investors.

The inflation rate in the period is up and down and it is difficult to associate a specific trend, either increasing or decreasing. The real interest rate has been, for half of the period of study, negative which is usually associated with severe credit rationing, which lends itself to rent seeking and corruption in the allocation of credit. Negative real interest rates represent the presence of financial repression. The relation between real interest rates and private investment is difficult to associate with a specific trend. For example when real interest is declining during the period of 1975-1980 private investment has also declined, where it should have been increasing. This leads to the presumption that interest rate must have played a secondary role in the determination of private investment. If the interest rate has not played a major role in the behavior of private investment, it is likely that credit rationing and other factors have. Therefore, the availability of financing seems to be an important factor in explaining private investment. The terms of trade are deteriorating, and this is in line with theoretical understanding. As the terms of trade is deteriorating the availability of foreign exchange also declines which has a negative impact by limiting the capacity to import machinery and inputs. The Real Effective Exchange rate index has increased significantly since 1992 as a result of the devaluation of the domestic currency. The relation with private investment seems positive as private investment has increased since devaluation. Generally, the variables included in the analysis are appropriate; they have shown the hypothesized trends in relation to the private investment rate.

2.3. Estimation and Results

Six equations for the private investment rate were estimated for the country, using a time series data for the period 1975-1994. Because the current values of the per capita GDP and the debt-service ratio may be affected by the private investment rate, lagged values of these variables were used. In addition, the lagged value of the ratio of external debt to GDP was employed, because the information is usually available only for the end of the year and is, therefore, generally known retrospectively. A test of structural break was made. The null hypothesis of no structural break is tested using the methods of cumulative sum of recursive residual squares (CUSUMQ). It is found that there is structural break between the period 1975 and 1994. When a dummy variable is introduced in the regression, to catch the policy change, the problem of structural break is avoided. Hence the dummy variable catches the problem of structural break and represents the policy change. This tests the difference in intercepts between the two periods.

The results of the estimated six equations using OLS are presented in Table 2. From this table we realize that credit to the private sector to GDP, real exchange rate, debt service payments ratio, the country's external debt to GDP ratio and the dummy variables are variables that significantly affect private investment. All other variables—Int, ToT, CPI, Pub/GDP and GR—are insignificant. The results yield evidence in favor of the hypothesis of credit rationing since in the specifications of private investment equation the credit variable turned out to be strongly positive and significant. On the other hand, the real interest rate was not a significant variable in any of the private investment equations. The estimated elasticities imply that a 10% increase in credit to the private sector to GDP ratio will be associated with a 2.5% increase in the ratio of private investment to GDP.

Private investment appears to be positively influenced by the real exchange rate index. This implies that the devaluation of the domestic currency has favored private investment. However, it is difficult at this point to conclude that devaluation has increased the profitability of tradables which can off-set the increase in the cost of imported capital goods, inputs and materials in the country.

The significance of the dummy variable with a positive coefficient shows the positive impact of the policy change in private investment as it increases the intercept on average by 0.19 for the 1991-1994 period. This result is consistent with the preliminary evidence of increased private investment during the period 1991-1994. The existence of permissive policies (e.g. lifting of the capital limit, permission of engaging in more than one business by an individual, etc.) has contributed to the increment in the private investment rate. The magnitude of the coefficient suggests that private investment during the 1991-1994 period has increased on average by about 19 percent greater than in the period 1975-1990.

The ratio of external debt-service payments to exports of goods and services has confirmed its negative and significant impact as the preliminary evidence suggested. Similarly, the country's stock of external debt to its nominal GDP has a negative and significant impact on private sector investment as it was increasing during the period. The negative impact of both these variables could be either because of the shortage of the foreign exchange they created or the debt overhang.

3. MICROECONOMIC DETERMINANTS OF PRIVATE INVESTMENT

3. 1. Private Investment and the Business Environment

Programs of reform that eliminate macro-economic imbalances are necessary to ease the constraints on development. The investment recovery in intensive adjustment lending countries is partly a consequence of the success of adjustment policies in improving macro-economic stability and efficiency. Higher private investment responses occurred in countries with lower fiscal deficits, lower inflation, and more liberal trade regime and, for the low-income countries, lower parallel market premia in the late 1980s (Brain 1991).

While relative price reforms and macro-economic stabilization are necessary, these are not sufficient for the recovery and expansion of private investment. There are micro-economic and institutional constraints which do not lend themselves to the familiar analytical technique and policy remedies of their macro-economic counterparts (The World Bank 1992).

Private investment response among the low income (and Sub-Saharan African) countries, in addition to macro-economic stability is surely also constrained by long-term factors— a weaker human capital base, inadequate and often deteriorating infrastructure, less diversified economies, and poorly functioning institutions and factor markets. Much of the problem of the recovery and expansion of private investment in low-income countries is therefore a long-term problem of developing the private sector.

The recovery of private investments particularly during adjustment depends on four elements that might be labeled the business environment: the degree of certainty about government policies, the legal and regulatory framework, the state of physical infrastructure, and the efficiency of labor and financial markets. World Bank (1992a) Country case studies support the view that macro economic and structural reforms are necessary for the recovery and expansion of private investment, but are not necessarily sufficient. Among the findings of recent work, the experience of Ghana and Bolivia clearly points out that establishing market oriented rules alone may be insufficient to convince the private sector that it is worth committing resources to investment. Improvements in the business environment are also necessary.

The importance of Ethiopia's laws, regulations and procedures that govern business entry and business operations for the development of the private sector is also emphasized in a recent study of the Foreign Investment Advisory Service (FIAS, 1997). Hence it is hightime to identify laws, regulations and procedures which impede private investment in the country at present.

It is also argued that one of the reasons for the success of East Asian countries is the creation of a business friendly environment, particularly a hospitable legal and regulatory structure to private investment World Bank (1992b). Hence, along with macroeconomic stability, a business friendly environment is one of the factors, to be considered for the recovery and expansion of private investment.

The constraints faced by private investors differs from country to country although countries share common elements of the business environment. This is because the specific institutional situation of each economy affects the extent to which firms are constrained by any specific factor. The following table (Table 3) shows the different constraints faced by the respective country investors.

Because of the difference between countries of constraints affecting the development of the private sector, specific country study on the elements of business environment is vital. Thus, this study attempts to identify the major constraints to private sector development in Ethiopia in the area of business environment.

3.2. Methodology of the Survey

Interviews were conducted to learn from investors themselves what entry, operational and expansion constraints they faced. A printed questionnaire, highlighting obstacles in the area of business environment was verbally administered by the author directly to the owner or an officer of each project.

Rather than interviews in a specific sector, the survey focused on a broad group of sectors. This different sectoral approach enables us to have a general understanding of the entry, operational and expansion constraints faced by investors. The risk is that generalization of constraints in entry operation and expansion might fail to provide specific sectoral constraints where there is sharp difference from sector to sector in the character of the constraints. This is so when the sample of that specific sector is relatively small. Here an attempt of specificity is made only on the specific constraints faced by investors to entry, operational and expansion irrespective of sector. Constraints associated with bureaucratic procedures, financing, and uncertainty are common to entry, operation and expansion stages. By contrast access to and cost of land, access to and cost of raw materials, lack of skilled worker and market constraints are specific either to entry or operation or expansion stages.

The survey was originally planned to be undertaken only in Region 14/ Addis Ababa, but when the author got the opportunity to attend the Tigray Investment Conference (held from April 5-8, 1997) through the good offices of the Ethiopian Investment Authority, the survey also included investors in Region 1. The inclusion of the Region 1 permitted the identification of constraints faced by investors investing in this region and a comparison of these constraints with those in Region 14 and as well as the identification of constraints common to the two regions.

In the case of Region 14, a sample of 100 investors were selected to be interviewed out of a total number of projects of 1,117 which have been granted investment certificate from July 1992 to end of 1995. Out of the total number of projects, 898 projects have not started yet, 122 are in the implementation phase, and the remaining 87 projects are at the production/service stage. Those projects which have been granted investment licenses for the year 1996 are not included in the population to allow for the time needed for implementation of a project. This is because we can not expect a project to be in implementation phase as soon as it is granted an investment certificate. Time is needed to acquire land, capital (bank loan), etc. That is why the population is one year back from date.

In order to identify the sample from the population a stratified sampling method was used. The population was stratified into eleven strata/sector as: Agriculture, Construction, Education, Health, Hotel and Tourism, Industry, Mining, Real Estate, Social Service, Trade and Transport services. The author decided to have a Sample of 50 out of those projects which have not started yet and 50 from those projects which are in implementation and production/service stages. Adopting proportional allocation (depending on the population in each sector/strata), the sample size was determined for each sector. Simple random sampling method was used to select the samples from the respective strata/sector using random numbers.

After identifying the location of each investor through a telephone call, questionnaires were dispatched to the selected 100 investors by the author in person. A lot of problems have been encountered in identifying the location of each investor as it was impossible to get some by telephone. Most addresses of investors are different from the addresses given in their files in the Ethiopian Investment Authority. Further, when they were identified, it was difficult to get the investor or an officer to fill-in the questionnaire. And when found, they did not want to fill the questionnaire on the spot. They usually give an appointment and are not around at the appointment time. Generally, most investors were not willing to fill the questionnaire though they were told the purpose of the questionnaire (and that it will remain confidential). It proved very hard to collect the questionnaire in spite of the fact that I had all the access, their addresses, and am working at the Ethiopian Investment Authority.

After all efforts, it was only possible to collect 34 samples. Of the 34 samples, 11 are projects which have not yet started and the remaining 23 are either in their implementation or operational phase.

3.3. Results

3.3.1. An Overview of the Constraints

The survey in regions 14 and 1 elicited from the investors their assessment of the relative magnitude of obstacles inhibiting their efforts to entry, operation and expansion. The interview yielded a list of constraints to entry, operation and expansion. Investors were presented with the relevant list and asked to rank each constraint on a scale of 1 to 5 according to its degree of severity. Tables 4, 5 and 6 summarize entry and operational constraints in Region 14 (Tables 5 and 6), and common constraints to entry and operation in both regions (Table 6). Scores provided by individual investors were converted to a scale of zero (least severe) to one (most severe),¹ and averaged across investors. The resulting statistics provide cardinal measures of the relative severity in each stage of operation i.e., entry and operation.

As Table 4 reveals, access to and cost of land, bureaucratic procedures and lack of infrastructure are the leading constraints; access to and cost of finance are second and political/policy uncertainty, labor regulation, access to and cost of equipment are found to be the third or relatively minor constraints to entry in Region 14.

From Table 5, we realize that, again, bureaucratic procedures, lack of infrastructure, access to finance and cost of raw material are the leading constraints, whereas cost of finance, lack of market are secondary and the others such as political/policy uncertainty, labor regulation, lack of skilled workers, access to raw material and foreign exchange constraints are the third constraint to operation in Region 14.

Table 6 combines the common constraints for both entry and operation in Region 14, Region 1 and the two regions together. Bureaucratic procedures, infrastructure and access to finance are the leading constraints, cost of finance is secondary, political/policy uncertainty and labor regulations are the third constraints in Region 14. Whereas, in Region 1 access to and cost of finance are the leading constraints, infrastructure and bureaucratic procedures are secondary and political/policy uncertainty and labor regulations are the third constraints (Note that as the sample size for Region 1 is small it was only possible to identify the common constraints for both entry and operation). When the two regions are taken together, bureaucratic procedures, infrastructure and access to finance are the leading, cost of finance is secondary and political/policy uncertainty and labor regulations are the third constraints to both entry and operation in the two regions.

Generally, from the above three tables it appears that bureaucratic procedures, access to finance, and infrastructure are common leading constraints to both entry and operation in both regions and access to and cost of land are the specific leading constraints to entry in Region 14. The next sub-sections review and interpret in depth the results obtained for the leading constraints identified.

3.3.2. Common Constraints to both Entry and Operation

3.3.2.1. Constraints on Access to Finance

As Table 7 summarizes, the financing mechanism of private investment in both Region 14 and Region 1 exhibits some similarities. One feature common to both regions is the dominant role of own savings. This is seen as a poor strategy in a country where the average private marginal propensity to save is low (Teshome Mulat 1994). And the second most important source of finance is formal financial institution (Bank) in both Regions.

Generally problems with banks are common between the two region: long time, high collateral requirement and in some cases lack of genuine assessment of assets by bank officials. In order to further activate private investment in the two regions in particular and in the country in general these regulatory (high collateral requirement and unacceptability of machinery as collateral) and administrative (longer time and lack of genuine assessment by Bank officials) problems should be addressed.

3.3.2.2. Regulatory Constraints

1. Bureaucratic Procedures

Table 8 summarizes the relations between investors and the different service-giving public institutions in both Region 1 and Region 14. From the table it is clear that there is problem of bureaucratic procedures in Region 1, with about 19% of the investors having a difficult relationship with each institution. Bureaucratic procedure is much more severe in Region 14 where 71% of the investors are having a difficult relationship with Region 14 administration.

The main reasons explained, among others, by the investors are:

1. It is almost impossible to transfer ownership in an acceptable period of time and this prevents investors from obtaining a loan from the Bank. Banks require that the asset be in the name of the borrower before taking it as collateral. The overall effect is a shortage of finance.
2. As there are not enough competent workers in the administration, it is impossible to start operating quickly, even it takes a lot of time to know what kinds of activities can be performed in an identified site according to the

master plan of the city.

3. Most importantly it is difficult to acquire land; in recent days the investor is required to find the land himself and then negotiate the rate he/she will have to pay. Getting land is a difficult procedure. Identification and negotiation are not easy.

With regard to Custom Authority, it takes a very long time to clear items and one cannot see the item while it is with the Custom Authority. It is only possible through the transitors but the transitors cannot explain the items to the officers as they do not know the items well. Specially when there is damage, the problem is aggravated as the Custom Authority does not permit the owners to show their items to insurance officers.

In addition to the above institutions, some investors, particularly in Region 14, have cited Health Bureau, the Inland Revenue and the Bank as difficult institutions. In the case of the Health Bureau, its requirement for a permit for permanent/operational license is cumbersome. In this regard, it is reported:

...unable to meet the requirements for "permanent license" (because of failure to show "real" financial and other commitments toward establishing an enterprise or due to stringent health codes, municipality regulations, etc.) only a few succeed to obtain permanent licenses, and most applicants either stay on temporary license for another period (could not start production as a result), with draw completely, or go underground and operate as an informal business (Teshome 1996).

With regard to the Inland Revenue, investors, particularly those that are in the operational phase are complaining of double taxation of sales tax. When inputs are imported they are taxed at a rate of 12% when they are cleared from custom and the product using these inputs is taxed again at 12%, which means in actual fact that the sales tax is 24% in these industries. The regulation says the sales tax paid on inputs should be refunded but it is actually difficult to get it back. As a result, capital, particularly working capital, is being depleted. In addition partly because many investors do not have the financial documents, the income tax levied by the Inland Revenue is based on estimation (personal judgment) and this has been the ground for corruption.

As noted above the severe bureaucratic procedures particularly in Region 14, i.e., the time spent to deal with the bureaucracy and in some cases side payments (in Banks) represent deterring costs to entry and operation, comprising both financial elements and the opportunity cost of the fixed resource of the investor's time.

2. Infrastructure

Table 8 also reveals the problem with regard to the availability of infrastructural services. The availability of infrastructure (power, telephone and water) is generally poor with the supply of power and telephone being particularly limited. Hence public investments in the area of power and telecommunications are crucial for the development of the private sector.

3. Access to and Cost of Land

As noted from the ranking of the severity of constraints, lack of access to land is one of the leading constraints. In fact all of the investors in Region 14 that have not yet started operation labeled access to land as a serious constraint for entry (all of them have given the highest scale, 5). When we take all of the investors, those that have not yet started and those that are in the operational phase in Region 14, 25 have said there is a problem of access to land, 5 have responded that there is no problem of access to land (as it be obtained by lease) and 4 have not commented on it as they are working in rented houses or on sites which they have owned before. Whereas in Region 1, of the 16 investors only 5 have responded that there is problem of access to land and the remaining 11 have said there is no problem.

The reasons for the lack of access to land in Region 14 are mostly associated with the high rate of lease cost which they did not take into account as a project cost at the inception of the project. Secondly, one cannot get the type and size of land that one needs and the present experience of identification of the land by the investor himself is difficult (in one case the agreed rate was changed for unknown reasons and followed by a threat that the investor would be denied the site unless he pays the new higher rate). Third, it takes long-time to get land (one respondent has said it is a life-time process). In Region 1 lack of access to land is associated with the longer time it takes to get (one respondent has said, there was no reply for about 2 years and another that it took 3 years to get the land); temporary provision of land which does not enable the investor to get a plan and hence hinders investment activities and does not guarantee the implementation of the project.

Generally, the cost component and the administration of land provision are not conducive for private sector development, in particularly in Region 14. On the strategy of collecting unaffordable fees from the value of land by the Region 14 administration, one respondent has commented, that it is better to provide land at reasonable rate to those industries which can create employment opportunities, increase domestic production and increase the tax base of the government than trying to get the whole sum of revenue only from land. And the benefit of this will exceed that obtained by collecting revenue only from the price of land.

4.3. Expansion Constraints

Almost all the projects which are in operational phase are not working to their full capacity in both Regions. On the average all the enterprises are working at 50 percent of their capacity. A variety of reasons are given for operating at below capacities. In Region 14, lack of finance, high cost of raw materials and lack of a market are the major reasons. Whereas in Region 1 lack of finance, power and access to raw materials are the major reasons. In Region 1 all the enterprises have a plan to expand and also in Region 14 all the enterprises except two have plans for expansion. The reasons forwarded by the two enterprises are high cost of land, lack of market and high cost of raw materials. In sum, lack of access to finance, the cost of land and infrastructure (power) are problems to entry, operation and expansion in both regions although the severity between the two regions differs.

5. CONCLUSION AND IMPLICATIONS

This paper identified some of the macro-economic determinants of private investment. Using investor level information some of the constraints to entry, operation and expansion of private investment in Ethiopia were also identified. Private investment during the period of 1975-1989 declined sharply and increased slightly during 1990 and 1991 as the previous government started "reform" in 1989. The rate of private investment continued to increase substantially from 1992 as a result of a substantial change in economic policy by the then Transitional Government and the present Federal Government of Ethiopia. However, a portion of the additional investment is a result of transfers from the public sector following the implementation of the privatization program. The number of projects completing the project cycle is low. Although many project applications are received for investment certificates, the number of projects that make the transition to permanent license (to operation) are very few indeed. The trends of private investment were analyzed using both econometric and survey methods. The empirical results of the study leads to the following conclusions and implications:-

1. Using time series data for the period 1975-1994, the econometric result has shown that private investment is determined by the availability of finance, the real exchange rate, investment policy (private investment policy), debt-service payments and debt-overhang. The real interest rate, growth of per capita GDP, public investment and changes in terms of trade did not affect private investment during the period of study.
2. The survey results of investors/enterprises which have acquired investment certificates from 1992-1995 in the two regions (Region 14 and Region 1) show that Bureaucratic procedures, lack of infrastructure (particularly power) and access to finance are the leading constraints for entry, operation and expansion. Access to and cost of land are the specific leading entry constraints in Region 14 in addition to the above. The other areas of business environment such as political/policy uncertainty and labor regulations are relatively less important. Hence both the econometric analysis and the survey confirmed that the availability of finance rather than the interest rate is a crucial determinant of private investment in Ethiopia which support the hypothesis of credit rationing. Both domestic inflation rate, a proxy for macro-economic instability in the econometric analysis, and political/policy uncertainty in the survey are not significant determinants of private investment.

3. In addition investigation of the sectoral distribution of projects which are granted investment certificates since 1992 revealed that the share of projects in non-productive sectors is 30%. This shows the need for a change to the structure of private investment i.e. to shift to productive investment areas using incentive mechanisms.

In all, a rapid expansion in private investment is dependent upon improvements in infrastructure, particularly, power, in the proper functioning of institutions and markets. The implications of the study are that the encouragement of private investment is not only a question of relatively liberal investment laws (which permits the participation of the private sector in almost all areas, provide incentives, etc.), establishment of investment institutions which facilitate investor needs, but also is a question of making resources available particularly land, finance and infrastructure. As the survey and econometric results have shown these resources are lacking. Bureaucratic procedures in these institutions (in the provision of land and finance) have to be improved in order to activate private investment. Therefore, promotion of private investment needs cooperation of all relevant institutions; it is not only a question of one institution (investment office) and/or one policy (investment policy). These constraints and their implications are also equally important to those regions which the survey of the study did not include.

Notes

1. This paper is based on the Thesis of the author presented to the School of Graduate Studies, Department of Economics, of Addis Ababa University in June 1997.
2. Calibration of each investor's assessment of the severity of the obstacles on a scale of 0 to 1 controls for differences among entrepreneurs in their subjective perceptions of absolute level of difficulty posed by the obstacles they confront.

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Table 1 Empirical Values of Relevant Variables

	GR***	DS/ XGS	CPI	DEBT/ GDP	TOT	REX	Int**	Pub/ Gdp****	P/ Gdp****	CR/ GDP
1975	-2.40	11.80	4.66	14.87	8.5	130	4.63	10.40	6.80	0.09
1976	-0.30	9.80	18.93	16.29	9.3	124	-9.57	8.50	3.60	0.09
1977	-21.0	8.60	21.85	16.19	197	110	-12.57	8.20	3.10	0.09
1978	-3.40	9.30	18.57	16.84	126	96	-9.27	7.50	3.10	0.10
1979	2.90	6.30	12.53	18.60	144	95	-3.57	8.70	2.90	0.12
1980	2.50	8.10	12.53	19.52	100	95	-3.17	10.00	2.70	0.06
1981	3.90	10.70	1.93	23.88	83	98	7.43	10.40	2.50	0.03
1982	-1.10	13.80	7.28	29.48	86	98	2.03	11.80	2.60	0.04
1983	5.80	18.30	3.84	31.29	88	87	5.53	11.20	2.50	0.04
1984	-8.30	19.30	-0.25	34.50	87	93	9.53	12.80	2.70	0.03
1985	-9.20	38.60	18.36	38.19	82	82	-9.07	14.00	2.20	0.02
1986	3.40	38.00	4.63	33.60	123	96	3.62	12.70	2.00	0.02
1987	6.20	51.40	-9.45	32.80	69	105	17.72	14.60	2.00	0.02
1988	-1.10	62.90	2.16	34.70	77	96	6.02	15.60	2.00	0.02
1989	-1.60	67.50	9.59	38.60	89	98	1.38	14.40	1.90	0.02
1990	-3.40	55.17	5.16	38.50	75	100	3.02	9.90	2.40	0.02
1991	-9.00	74.72	20.90	40.60	76	84	12.68	7.60	2.80	0.02
1992	0.20	76.90	20.99	37.80	80	202	-12.78	2.90	6.00	0.02
1993	20.60	48.60	9.99	32.10	70	149	2.75	14.40	6.40	0.05
1994	0.60	44.00	1.17	72.10	75	201	11.55	20.60	5.80	0.08

* Source: Deresse Degefu (1996)

** calculated by the Author

*** Percentage change in real GDP percapita.

**** Source: Pefferman and Madarussy 1993

Table 2. Determinants of Private Investment in Ethiopia: 1975-1994

Explanatory Variables	Equations					
	1	2	3	4	5	6
L Pub/GDP	.018 (.13)	-.01 (-.07)	.008 (.05)	.19 (1.59)	.12 (.80)	-.008 (-.06)
Int	-.004 (-1.2)	-.002 (-.52)	-.008 (-.28)	-.002 (-1.08)	-.001 (-.33)	-.002 (-.71)
GR(t-1)	-.002 (-.95)	-.002 (-.71)	-.002 (-.80)	-.003 (-1.25)	-.003 (-1.09)	-.002 (-.86)
D	.13* (1.80)	.19* (3.25)	.18* (3.24)	.26* (4.90)	.21* (3.05)	.14* (2.57)
L ReX	.83* (3.28)	.63* (2.73)	.63* (.01)	.90* (.003)	.77* (3.40)	.63* (3.04)
(LDS/XGS) _{t-1}	-.18* (-2.14)			-.19* (-5.22)		
LDEBT/GDP) _{t-1}	.45 (1.43)				-.34* (-2.10)	
CPI*CPI	-.0006 (-.06)	-.001 (-.49)				
L ToT	-.3 (-1.67)					-.28 (-1.47)
LCR/GDP	.27* (2.05)	.19* (3.02)	.18* (2.92)			.24* (3.34)
constant	-.67 (-.93)	-.54 (-.94)	-.60 (-1.08)	-1.34* (-3.45)	-.77 (-1.25)	.05 (.07)
ADJ. R-Squ	.88	.81	.80	.92	.73	.81

Notes: t-ratios in parenthesis,

L stands for logarithm in base ten,

* significant variables at different levels of significance (1%, 5%, and 10%).

Table 3. Recent Studies of Constraints to Enterprise Growth and Operation in the Private Sector

Country, Sector, and Study	Leading Constraint	Second Constraint	Third Constraint	Fourth Constraint
Brazil-Garments (stone levy, and Paredes 1992)	Political and Policy Uncertainty	Inflation and Price Instability	High Taxes	Tax Bureaucracy
Chile-Garments (Stone, Levy, and Paredes 1992)	Lack of Competent Workers	Political Uncertainty	Inflation and Price Instability	Lack of Technicians
Kenya-Multiple Sectors (Schankerman & Stone 1992)	Inflation	Access to Finance	Political and Policy Uncertainty	Infrastructure
Tanzania-SMEs in Furniture, Construction, Horticulture (Levy 1991b)	Lack of Access to Finance	Bureaucratic Procedures of Regulation	Lack of Access to Industrial Sites	-
Egypt-Food, Textiles, Engineering (Galal 1991)	Political Uncertainty	Tax structure	Tax Administration	Access to and Cost of Finance
Cote d'Ivoire-SMEs in Multiple Sectors (Rueda-Sabater and Stone 1991)	Tax and Fee Administration and Cost.	Policy Uncertainty	Access to Finance	-
Ghana-Multiple Sectors (Steel and Webster 1991)	Lack of Access to Finance	Taxes	Lack of Demand	Economic Uncertainty

Source: The World Bank (1992), Adjustment Lending and Mobilization of Private and Public Resources for growth. Policy and Research series (22), p.39.

Table 4. Entry Constraints Rating in Region 14

	SCORES
Regulatory Constraints	
Bureaucratic Procedures*	1
Political/Policy Uncertainty	0.49
Labour Regulation	0.40
Access to Land*	1
Financing	
Access to finance	0.64
Cost Constraint	
Cost of Land*	1
Cost of Finance	0.60
cost of equipment	0.31
Access to equipment	0.36
Infrastructure*	1
Number of Investors	11

*Note: Leading Constraints in each Table

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Table 5. Operational Constraints in Region 14

REGULATORY CONSTRAINTS	SCORES
Bureaucratic procedure	0.72
Political/policy uncertainty	0.52
Labor regulation	0.35
FINANCING	
Access to finance*	0.64
COST CONSTRAINT	
Cost of finance	0.63
Cost of raw material*	0.80
INFRASTRUCTURE*	0.78
LACK OF SKILLED WORKER	0.50
ACCESS TO RAW MATERIAL	0.55
LACK OF MARKET	0.60
FOREIGN EXCHANGE	0.25
NO. OF INVESTORS	23

Table 6. Common Constraints to Both Entry and Operation

REGULATORY CONSTRAINTS	SCORES		
	Region 14	Tigray	Both Regions [†]
bureaucratic procedure*	0.85	0.56	0.76
political/policy uncertainty	0.51	0.23	0.42
labor regulation	0.38	0.20	0.32
Access to finance*	0.74	0.67	0.71
cost of finance	0.62	0.64	0.62
INFRASTRUCTURE*	0.64	0.56	0.75
NO. OF INVESTORS	34	16	50

Table 7. Main Source of Finance for 50 Region 14 and Tigray Region Investors (Number of Investors that obtained Finance from each source)

	Region 14	Tigray
1 Own Saving	18	9
2 Family or Friends	1	-
3 Partners	5	-
4 Formal Financial Institutional (Bank)	10	7
5 Information Financial Institution	-	-
Number of Investors	34	16

Table 8. No. of investors and the Percentage which have difficult relationships with each institution

	Region 14	Tigray
Region 14 Administration/Tigray (Concerning Provision of Land)	24 (71%)	3 (19%)
Custom Authority	14 (41%)	3 (19%)
Power Authority	12 (35%)	3 (19%)
Telecommunications	16 (47%)	2 (13%)
Water Authority	7 (21%)	3 (19%)
No. of Investors	34	16

[†] Computed taking into consideration the number of respondents in each region.