



**An Analysis of the Determinants of Private
Investment in the Manufacturing Sector:
The Case of the State of Tigray, Ethiopia**

By

Gizachew Yirtaw Gebrewubet

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Supervisor: Dr. P. Laxmikantham

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Gizachew Yirtaw Gebrewubet
March 2017

DECLARATION

I declare that *An Analysis of the Determinants of Private Investment in the Manufacturing Sector: The Case of the State of Tigray, Ethiopia* is my own work and that it has not been submitted before for any degree or examination at any other university. I further declare that all the sources I have used or quoted have been indicated and acknowledged by means of complete references.

Signed: _____

Gizachew Yirtaw Gebrewubet

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LIST OF ABBREVIATIONS

ARDL	Auto-Regressive Distributed Lags
AEO	African Economic Outlook
AERC	African Economic Research Consortium
APRM	African Peer Review Mechanism
CSA	Central Statistical Agency
DBE	Development Bank of Ethiopia
DFID	Department for International Development
EIA	Ethiopian Investment Authority
EIC	Ethiopian Investment Commission
EPRC	Economic Policy Research Centre
ERP	Economic Reform Program
FDI	Foreign Direct Investment
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focus Group Discussion
GDP	Gross Domestic Product
IAE	Investment Authority of Ethiopia
ICA	Investment Climate Assessment
IMF	International Monetary Fund
ISD	Investment Status Delay
KMO	Kaiser-Meyer-Olkin
MoFED	Ministry of Finance and Economic Development
MSE	Micro and Small Enterprises
NBE	National Bank of Ethiopia
NGO	Non-governmental Organisation
OECD	Organisation for Economic Cooperation and Development
OLS	Ordinary Least Square
PIMS	Private Investment in the Manufacturing Sector
PPP	Purchasing Power Parity
PSD	Private Sector Development
SPSS	Statistical Package for the Social Science

TIO	Tigray Investment Office
UNCTAD	United Nations Commission for Trade and Development
UBI	Uganda Business Inquiry
VAT	Value Added Tax

ABSTRACT

Economic and political reforms have been introduced in Ethiopia and these have boosted private investment over the last two decades. Reforms have brought about measurable improvements, but the progress of the status of private investment has remained slow. This study was conducted with the objective of investigating the microeconomic level determinants of private investment in the manufacturing sector. These micro-level determinants of private investment in the State of Tigray, Ethiopia, were analysed using both descriptive and econometric methods. Thus, an econometric method of data analysis using a duration model was applied to analyse the microeconomic data collected. In addition, descriptive analysis was employed to analyse the survey data. Here, a chi-square test and factor analysis were used to analyse the relationship between variables and their constraints on the operations of the manufacturing sector.

The major microeconomic determinants of private investment status in the State of Tigray were found to be investment areas, access to credit, infrastructure facilities, the judicial system, corruption, investment incentives and bureaucratic red tape. The econometric result revealed that infrastructure facilities, the judicial system, and investment areas negatively and significantly delayed the entire private investment status. However, interest rates and investment location were positively and significantly supported to continue their status of the entire private investors in the manufacturing sector. Infrastructure facilities, investment incentives, and investment areas were negatively and significantly related to the started group of investors' progress. However, investment location was related positively and significantly to the started group and the ability of the implementation and operation statuses of private investors to proceed to operation status. In the case of the non-started group, infrastructure facilities and investment areas are related significantly and negatively to investment status delay. By contrast, interest rates and investment location significantly and positively affect private investment status delay. According to the descriptive analysis, access to credit, bureaucratic red tape and corruption were the additional major factors that hinder private investment from progressing from one

status to the next. The investor's level of education, access to land and political instability risks in the survey were not determinants of private investment status. In addition, the survey of private investors for those who have already started production shows that infrastructural, technological, and economic and financial factors have the highest absolute value of the loading factors that hinders operations in the manufacturing sector.

The results of this study revealed that most of the problems encountered in the manufacturing sector were institutional but some were related to the private investors themselves. Thus, the government should take measures to establish a true, independent and efficient institution so as to create access to credit and provide infrastructure facilities to the private sector. This could be done by minimising corruption and ensuring transparent investment regulations. Thus, the State of Tigray, Ethiopia, must attract and encourage private investors by applying and improving policies which promote private investment. In this way they will actively contribute to the overall development and growth of the Ethiopian economy.

Finally, as this study is made on the causes of delay in each phases of investment, it contributes a new knowledge to all investment sectors in the developing countries as whole and particularly to all regions of Ethiopia for advanced polices and strategies development on investment decisions. Then, based on the results of the study and solving these identified problems of investment phases, all actors of investment can retain and encourage the existing and attract new private investors to enhance the economic development of the society. The findings from this study have important implications for prospective business owners, lenders, and policy makers on how to improve private investment and create conducive business environment.

Key words: Determinants, private investment, status of investment, groups, duration model, State of Tigray, Ethiopia

CHAPTER ONE: INTRODUCTION

This chapter provides a background to the study. In it, the statement of the study, research questions, objectives, significance, period covered by the study and organisation thereof are presented. It provides a definition of the term investment and addresses the problem gaps in the study area as well as the objectives of the study. The importance of the study to investors and other beneficiaries, the scope and limitation thereof and the chapter outlines are also discussed in detail.

1.1. Background of the study

The word investment can be defined in many ways and can be conceived in line with different theories and principles. Despite the fact that the word is defined in different ways, the meanings are more similar than dissimilar. Mertonson (cited in Bayai & Nyangara, 2013) states that the term 'investment' is essentially ambiguous. The definitions tend also to vary from one geographical area to the other. According to Legum (2005), the UK defines investment as 'every kind of asset,' and introduces a list of specific forms of investment with the indicative phrase. The list includes the following forms of investment: real estate or other tangible or intangible property that is acquired in the expectation or used for the purpose of economic benefit or other business purposes; interests arising from the commitment of capital or other resources put to economic activity; an enterprise; an equity security of an enterprise and a debt security of an enterprise. Generally, investment is the application of money for earning more money. Investment also means savings or savings made through delayed consumption.

Investment is widely considered as one of the main drivers of economic growth in the world because it is a flow that increases the existence of capital in the economy. Over the years, this has been a particularly dominant variable in macroeconomic

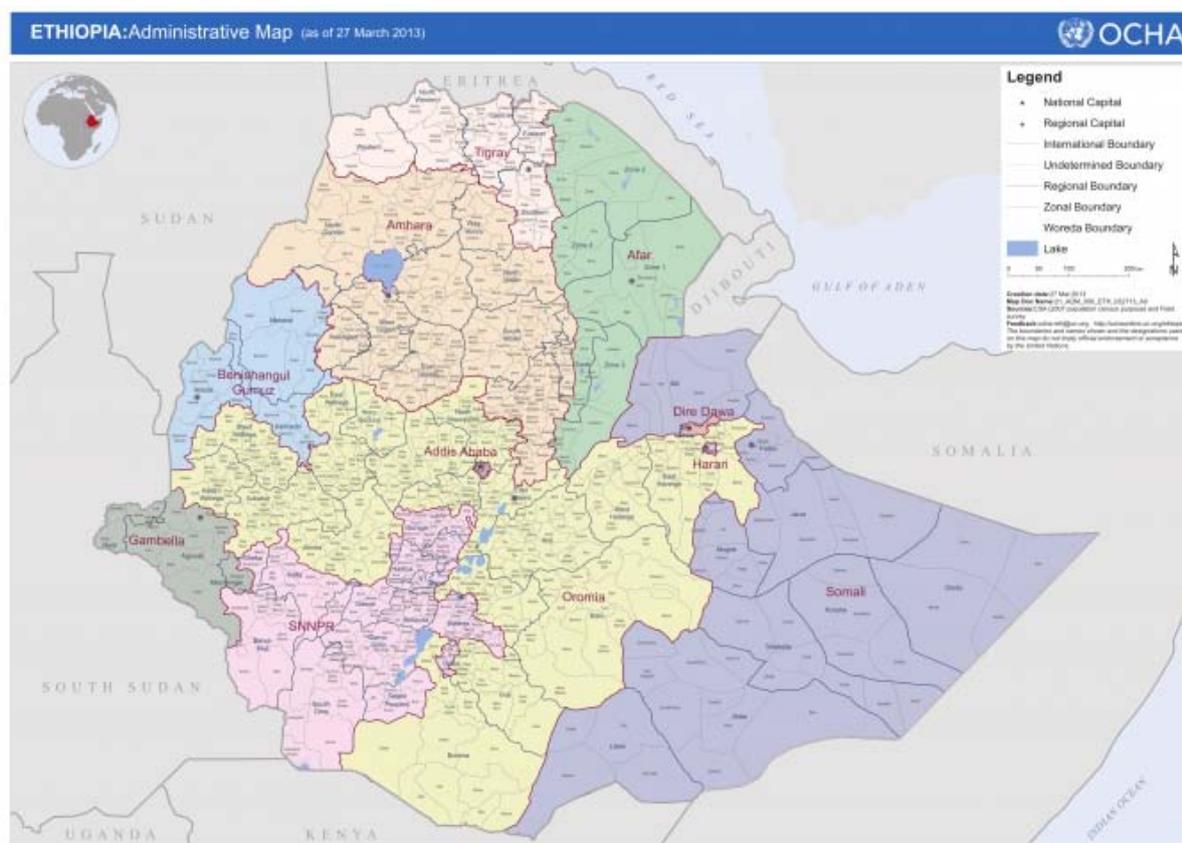
development in developing countries¹. Accordingly, practitioners and academicians have conducted a lot of research into the importance and determinants of the operations of investments. They argue that investment is key for economic growth because high investment rates are widely considered to be an essential condition for attaining a high and sustainable growth rate (Levine & Renelt, 1992).

To strengthen this argument, the Organisation for Economic Cooperation and Development (OECD, 2012) indicated that a strong investment sector contributes prominently to the economy of a country through creating more employment opportunities, generating higher production volume, increasing export and introducing innovations. Consequently, the promotion of investment has an important role to play in developing countries, and particularly in African countries where it will markedly improve the peoples' standard of living and so decrease poverty. Ethiopia has also benefited from investment in different sectors. Job opportunities have been created, there has been an increase in the productivity of the society, and hard currency has been earned through participation in the export sector.

Ethiopia had a total population of over 95 million in 2013, making it the second most populous country in Africa after Nigeria (World Population Review, 2014). According to the *Constitution of the Federal Democratic Republic of Ethiopia Proclamation No. 1/1995* (FDRE, 1995), Ethiopia is a federal democratic republic composed of 9 states: The State of Tigray, The State of Afar, The State of Amhara, The State of Oromia, The State of Somalia, The State of Benshangul/Gumuz, The State of the Southern Nations, Nationalities and Peoples, The State of Gambela Peoples and The State of the Harari People. The Federal Democratic Republic of Ethiopia (FDRE) also has two city administrations: the Addis Ababa city administration and the Dire Dawa City Council (FDRE, 1995).

¹ Developing countries incorporate all countries from Africa, Latin America and the Caribbean as well as Asia and Oceania (UNCTAD, 2008).

Figure 1.1: Map of Ethiopia



Source: <http://reliefweb.int/map/ethiopia/ethiopia-administrative-map-27-mar-2013>

From 1974-1991 the economy of Ethiopia was state-centered and state-controlled. After these 17 years, changes in the country enabled Ethiopia to start building a market-oriented economy. Numerous macroeconomic reforms have been implemented with the objective of achieving macroeconomic stabilisation and growth. The macroeconomic reforms included the privatisation of state-owned enterprises, liberalisation of trade policy, reduction of import tariff rates, elimination of non-tariff barriers, and the devaluation and deregulation of price and exchange rate controls (UNCTAD, 2002).

In general, Ethiopia has continued to maintain a double-digit growth rate which averaged 10% over the last eight years. In the 2014/15 fiscal year, the real Gross Domestic Product (GDP) growth was 10.2% compared to the 4.4% forecast for Sub-Saharan African countries. This robust and broad-based economic growth placed Ethiopia among the top performing African and developing Asian countries (NBE

annual report, 2014/15). In terms of economic sectors, agriculture and allied activities accounted for 38.8% of GDP, industry 15.2% and services 46.6 percent. Similarly, agriculture contributed 24.5%, industry 29.4% and service 46.1 percentage points to the 10.2% real GDP growth in 2014/15 (Ibid).

Investment in Ethiopia has been gradually increasing over the past seven years owing to the favorable investment climate. There are visible trends that Ethiopia is becoming an investment focal point in the horn of Africa. The Ethiopian Investment Agency (EIA) and regional Investment Offices licensed some 69,079 investment projects with an aggregate capital of Birr 1.3 trillion during 1992/93-2012/13. Of these projects, 58,735 (85%) were domestic, 10,220 (14.8%) foreign and 124 (0.2%) public. In terms of capital, Birr 518.2 billion (38.8%) was from domestic investors, Birr 515.6 billion (38.6%) from foreign investors and Birr 303.0 billion (22.6%) from the public sector. In 2012/13, a total of 7,011 investment projects with a combined capital of Birr 112.10 billion were approved. The number of domestic investment projects reached 6,273 which accounted for more than 89.5% of the total projects approved during the review period (NBE, 2012/13).

The most appropriate definition of investment as the term is used in this research is provided by Chhibber and Leechor (1995) who say that private investment is an investment which is made by privately owned business firms on new buildings, plants, and equipment that are used in the production of goods and services. Semenescu (cited in Bayai & Nyangara, 2013) describes private investment as the spending on additions to a firm's capital assets such as buildings and machinery. Private investment is one aspect of investment and as such it contributes significantly to economic growth and the ability of a country to reduce or alleviate poverty and improve the lives of its citizens. Jongwanich and Kohpaiboon (2006) and Frimpong and Marbuah (2010) attribute this to the fact that private investment plays an important role in the expansion of the economy's production capacity and long-term economic growth. They add that private investment is a crucial pre-requisite for economic growth because it allows entrepreneurs to set economic activity in motion by bringing resources together to produce goods and services.

Private investment has been the major economic driver in developing countries such as Fiji, Ghana and Pakistan, a fact that was foreseen by a number of researchers (Seruvatu & Jayaraman, 2001; Asante, 2000; Bayai & Nyangara, 2013). According to Reinhart, Ghura and Hadjimichael (all cited in Bayai & Nyangara, 2013), private investment is still key to solving economic problems such as poverty and unemployment, especially in developing countries.

Rapid and sustained growth is facilitated by a virtuous circle whereby entrepreneurship and investment lead to higher productivity, making it possible to invest larger sums in the future. During the course of this process, jobs are created and new technologies are introduced, especially through international trade and investment linkages. Successful mobilisation of private investment is thus increasingly important for creating employment, raising growth rates and reducing poverty. Private Sector Development (PSD) is about enabling the enhanced utilisation of labor and other resources through the growth of private business by creating an enabling environment both in the domestic and overseas markets (MoFED, 2000).

Although private investments play an important role in economic growth, there are factors affecting the status of private investment operations (Frimpong & Marbuah, 2010). Manufacturing is one of the private investment sectors whose operations are affected by various factors. Even if the performance of Africa's manufacturing sector has generally been quite poor, many people still believe that manufacturing can act as an engine of growth on the continent. This growth is fueled by the creation of skilled jobs which ensures positive spillover effects and also the modernising of the economy (Bigsten & Soderbom, 2006).

Many empirical studies have been carried out on the determinants of private investment in the manufacturing sector (PIMS) with a view to enhancing its performance and benefits. However, the validity of investigations into the determinants of the private investment sectors in Ethiopia are affected by time constraints and no study has been conducted to determine how the delay of

operations in each investment status² affects the manufacturing sector. Moreover, the gap between approved investment permits and implemented project operations provides insight into the fact that the implementation aspects of private investment is problematical in Ethiopia (Deneke, 2001). Deneke's (Ibid) research also shows that out of the total domestic private investment projects approved, only 32% were operational in eight years. The rest (68%) had either been terminated or were lagging well behind schedule because of numerous reasons which have yet to be studied. The researcher observed this and identified additional relevant and important points from reports and data at federal and state levels in Ethiopia. It is from these insights that the research problem addressed by this study was identified.

The investment sectors currently experience various problems in spite of the fact that one of the principal undertakings of the Ethiopian Government since 1991 has been to transform the country from a centrally commanded economic system into market oriented-economy. The government has instituted a broad range of policy reforms, including the liberalisation of the foreign trade regime, decentralisation of economic and political power, deregulation of the domestic price and a devaluation of the national currency.

In addition, the investment law has been amended several times in order to meet the demands of both domestic and foreign investors (Woldemeskel, 2008). Investment offices at federal and state levels were also established to encourage, promote and facilitate investment activities. Between 1992 and August 2012, 30% of the total private investments approved by the State of Tigray Investment Office were licensed to work in the manufacturing sector and these projects encompassed all three investment statuses (TIO, 2012). Their total capital and capacity of creating employment opportunity were about 19% and 10% respectively of the total private investments. However, although the government provides different support and reform mechanisms, around 75% of the total private investments in the manufacturing sector are in the pre-implementation and implementation status of

² The three different investment statuses are: 1) Pre-implementation: up to the point when new land, machines, building materials etc. have been bought; 2) Implementation: up to the point when the production plant is being built; 3) Operation: when the production plant is already in use (Federal Investment Bureau, 2009).

investment (TIO, 2012). The researcher observed that private investments in the manufacturing sector did not progress from one status to the next as per the requirements³ set by the municipal office of the State of Tigray. Consequently investors are held back and their investments delayed for long periods of time.

Despite the importance of these facts, the researcher was unable to find any research into the identified problems or gaps in the State of Tigray. The researcher therefore decided to focus on private investment in this area. Before the current government came to power, there was no public investment at all and very little has changed since then. In addition, most of the problems identified above are more apparent in the manufacturing than other sectors, and the government has decided to shift from an agricultural-led economy to an industrialised one. Manufacturing establishes important linkages throughout the economy. It is connected upstream and downstream to agriculture, resource industries, construction, transportation, telecommunications, utilities and services, as well as being a major activity driver in these sectors (Assefa, Bienen & Ciuriak, 2013). The researcher took all this into account in this study and focused specifically on the determinants of PIMS at micro economic level and the constraints for private investors in the production phase in the State of Tigray, Ethiopia.

1.2. Statement of the problem

The private investment sector plays a vital role in the growth process of developing countries and it determines the rate at which physical capital is accumulated (Jongwanich & Kohpaiboon, 2006). Private investment has been a major economic powerhouse for developing countries (Ouattara, 2005). Empirical evidence (Ghura, 1997) indicates that private investment has a stronger, more favorable effect on growth than government investment, probably because private investment is more efficient and less closely associated with corruption. In Ethiopia, private investment sectors also have an important contribution to make to economic development and poverty reduction (Haile & Assefa, 2005).

³ The requirements allow for six months for pre-implementation, two and half years for implementation then require that the project enter into operation status.

Lesotlho (2006) however identified that private investment sectors are affected by various factors that delay projects and so affect the importance they render to economic development. Other studies have shown that private investment in developing countries is determined mainly by microeconomic variables and macroeconomic instability (Khan & Khan, 2007). Because the manufacturing sector is so important, researchers have begun to investigate the determinants of private investment. However, knowledge in this area is still very sparse and no studies specifically examine the investment status delay (ISD) of the manufacturing sector in Ethiopia (Hussien, 2000).

The studies in this area that do exist have shown that the determining factors affect all private investment sectors and do not discriminate among the various statuses of investment. But, reports in Ethiopia (EIA, 2012) show that project stagnation and delays of operations exist at all statuses of the investment sectors. In addition, a study by Hussien (2000) shows that in spite of the enormous number of projects licensed, the real investment rate is very unsatisfactory and more than 50% of projects have not yet started to be realised. According to the empirical data analysed by Deneke (2001), the process of investment from preparation to implementation must pass through a long and cumbersome bureaucratic process. This accounts in part for the big gap between approved and operational projects, and also for the fact that the number of projects completing the project cycle is low (Workie, 1996). This reality shows that there are problems which should be investigated so as to encourage and promote private investors at each investment status. This problem is evident in the manufacturing sector of the State of Tigray and is negatively impacting the promotion of private investment and the overall economic development of the country.

In support of the problem highlighted above, the data of the Tigray Investment Office (TIO) in August 2012 shows that out of the total number of firms registered (i.e. those granted investment permits) and licensed as a PIMS, 47% are in pre-implementation, 28% in implementation and 25% in operation status. In addition, the number of private investments in the manufacturing sector is increasing from year to year, but the status of investment in the sector has shown a slowdown or even halt in

progression from one status to the next according to the requirements of investment in the State of Tigray.

In general, private investments in the manufacturing sector are delayed for a long period of time. According to the data of TIO (2012), out of the total number of private investors registered or who have secured investment permits in the manufacturing sector, most of them have not proceeded to the next status as per the schedule or requirement set by the municipal office of the State and EIA. That means that the duration to be promoted from the first status to the second and then the last was not met by the private investors in the manufacturing sector.

These problems have not been investigated recently which is strange considering Ethiopia's commendable economic performance over the last seven years in relation to the determinants that affect the operation in each status of the PIMS.

This study thus seeks to analyse the determinants of private investment (since 1991) to uncover why the promotion of private investment status has remained sluggish and contrary to the rules on private investment. The researcher believes that there is a need to identify the micro level determining factors that cause this delay of private investment status and their resultant constraints on the operations⁴ of the manufacturing sector, specifically in the State of Tigray. Recommendations to help alleviate the problems will then be made.

A further significant factor is that scholars have not reached consensus on the measurement and determinants of private investment theories because of differences in the definition and measurement of private investment. For example, Mwangi (2015) defines it as all additions to the stocks of assets (purchases and own-account capital formation), less any sale of second-hand and scrapped assets. Adugna (2013) also measures nominal private investment which is a proxy for the performance of the private sector in the economy. Others measure net fixed investments computed as the annual differentiation in total net fixed assets normalised by the start of year (Omet, Yaseen and Abukhadijeh, 2015), and

⁴ Operation refers to the action of functioning or being active and effective.

Guimarães and Unteroberdoerster (2006) define it as real private fixed capital formation. In addition to this variation is the fact that there exists different theories on the determinants of private investment and that earlier studies on this were conducted in developed countries. Consequently it is necessary to investigate if the previous theories and evidence on determinants of private investment status operations can be applied in the context of less developed countries like Ethiopia.

A third factor is that none of the objectives and research questions of existing research was similar to this research, nor was the methodology adopted (see Appendix F for a list of studies and a summary of their models and variables). The variables used in this study are the micro level variables found in studies conducted in other developing countries, and those used in the context of the state. In terms of research methodology, this research makes use of a duration model in order to thoroughly investigate the impact of ISD.

Much of the focus of previous studies has been on all sectors of investment and at continent, or at least multiple country level. The focus of this study is on private investment in the manufacturing sector only. In addition, the study area is on only one state in Ethiopia (the State of Tigray) as its investment has grown over the last two decades. To the best of author's knowledge, this has never been researched before.

A further factor is that most of the related reviewed studies on private investment in Ethiopia and other developing countries made use of variables at a macroeconomic level. Examples are inflation, real interest rate, openness and real exchange rate (Bigsten, Collier, Dercon, Gauthier..., 1999). There are however a few microeconomic (firm) level determinants of variables of PIMS which can be used, such as educational level, access to land, bureaucratic red tape and infrastructure (Zerfu, 2001; Baye, Fufa & Wakjira, 2005). These firm-level variables were not examined in the existing literature (see Appendix F).

The research design of this study integrated as many explanatory variables at the micro level as possible into one equation so as to get a complete picture of the determinants of private investment status in the manufacturing sector. In other

words, this study comprehensively examines additional explanatory variables that have only been considered separately before. The results of previous studies have been inconsistent and contradictory, and have been unable to identify the determinants of private investment. Many variables indicated as having a positive effect in one study have been found to be negative in another. These inconsistencies show a clear need for further investigation. Table 1.1 below presents some of the incongruities, for instance, credit to investors and political instability in one study has a negative effect but in another they have a positive effect.

Table 1.1: Effects of earlier studies' variables on private investment

Ser. No.	Author and year	Method or techniques used	Findings (Independent variables)	Sig. (effect)
1	Nainggolan, Ramli, Murni Daulay and Rujiman (2015) in Indonesia	Error Correction Model (ECM) method	Investment credits	Positive
			Government investment, interest rates	Negative
2	A dugna (2013) in Ethiopia	Multiple regressions – using OLS (Ordinary Lease Square) model	Public investment, external debt	Positive
3	Karagoz (2010) in Turkey	Auto-regressive distributed lags (ARDL) Approach	Ratio of private sector credit to GDP, private external debt	Positive
			Trade openness	Negative
4	Ambaye, Berhanu and Abera (2014) in Ethiopia	Autoregressive Distributed Lag (ARDL) model	External debt and government expenditure	Positive
			Domestic credit and domestic saving	Negative
5	Naa-Idar, Ayentimi and Frimpong (2012) in Ghana	co-integration and error correction modeling	Political stability	Positive
6	Hussien (2000) in Ethiopia	Eclectic version of flexible accelerator model	Credit availability to private sector	Positive
7	Molapo and Damane (2015) in Lesotho	ARDL approach	Level of economic growth	Positive
			Increases in the price level	Negative
8	Agu (2015) in Nigeria	Cointegration and Error-Correction Methodology	Increased lending rate, political instability and infrastructure	Negative
9	Ogunbayo, Sangodoyin, Lawal and Okoruwa (2014) in Nigeria	Error correction model (ECM)	Credit to private sector	Positive
			Corruption perception index; saving rate; political instability	Negative
10	Abazi and Kalaj (2015) in Albania	OLS method	Sales, liquidity, profit, firm size	Positive
			Debt, experience	Negative
11	Michael and Aikaeli (2014) in Tanzania	Error Correction Model	Public investment, credit to private sector	Positive

(Source: Self compiled 2015)

1.3. Research questions

Based on the gaps and factors identified above, this study addresses the following research questions.

1.3.1. Main research question

The major research question is: What are the micro-level determinants of private investment status delay and operational constraints of private investment in the manufacturing sector in the State of Tigray, Ethiopia?

1.3.2. Specific research questions

The study also seeks to answer the following specific research questions:

- i. What are the major firm level determinants that cause the delay of private investment status or factors that delay the promotion of private investment from one status to the next in the manufacturing sector in the State of Tigray, Ethiopia?
- ii. What are the factors that constrain the operation of private investors found in the production phase in the manufacturing sector?

1.4. Objective of the study

1.4.1. General objective

The general objective of this study is to investigate the micro-level determinants of private ISD and the major operational constraints of PIMS in the State of Tigray so as to come up with possible recommendations to be considered in future intervention strategies of the state.

1.4.2. Specific objectives

- i. To find the major factors for the delay in the progress of private investment statuses in the manufacturing sector in general.
- ii. To discover the major factors causing the delay to start the operation/production status of PIMS.
- iii. To identify the major factors causing the delay to start implementation status of PIMS.
- iv. To determine the major operational constraints of private investors found in the production phase in the manufacturing sector.

1.5. Significance of the study

The development of investment is essential for the economic growth of any country and especially for developing countries like Ethiopia. Investors spend their money and time to sell their products and services by competing with other investors in the sector. The government also attempts to construct infrastructures and create an environment conducive to attracting and encouraging investors. In spite of this, the contribution of private investment to the overall development in Ethiopia is still at a very low level (Alehegn, 2008).

As a result, it is very important to study the factors that deter the development of private investment in general and that of the manufacturing sector in particular. This study, however, mainly focuses on the status delay and limitations of private investment in the State of Tigray on a micro level. Once complete, this will help the investment offices at the state level to identify appropriate solutions for improved future performance of private investment. In general, the results may benefit investors by helping them to understand the major determinants of private investment, and researchers by providing literature to be used for future study. Policy makers will also have additional information to use when they develop and redesign their investment policies and strategies to minimise ISD.

1.6. Scope and limitations of the study

The study set out to identify the micro economic determining variables of the PIMS in the State of Tigray. To identify the microeconomic determinants of the sector, primary data was collected through a structured questionnaire, interviews and focus group discussions (FGD).

For the purpose of this study, the investors selected to be respondents were only those private investors who were registered (licensed) by the State of TIO and operated in the state during the data collection period. The study did not include micro and small enterprises (MSE), public investment, endowment fund investments, non-governmental organisations (NGO) or foreign direct investment (FDI). The main limitation of this study is that it did not investigate or consider the determinants of private investment sectors other than the manufacturing sector. Important contributors to the economy like agriculture, service and construction were not considered.

1.7. Period covered by the study

This study covers the period from 1992 to 2012. This start date was selected because it was in 1992 that Ethiopia adopted a market-oriented economic development strategy. This is also a period in which private investment in general and investment in the manufacturing sector specifically has flourished in the country.

1.8. Organisation of the study

This thesis is divided into seven chapters. The first chapter is the introduction and provides background information, the statement of the problem, research questions identified, objectives and significance, the scope and limitations and the organisation of the study. The second and third chapters review related theoretical and empirical literature respectively. The fourth and fifth chapters describe the hypothesis and methodologies employed in conducting the research. The sixth chapter presents the results of the data collected through the various tools described in the methodology.

The final chapter comprises discussions, conclusions, recommendations and research contributions. It also identifies further study areas based on the findings of the study.

CHAPTER TWO: THEORETICAL FRAMEWORK OF THE STUDY

This chapter discusses the literature related to the study and investigates the theoretical framework of investment in general and private investment in particular. It is mainly focused on theories of the determinants of investment in developing countries, African countries and specifically in Ethiopia.

A basic definition of investment is the flow of expenses that increases the physical stock of capital. According to Dornbusch and Fischers (1994), investment spending is important as it accounts for much of the movement in the business cycle. Generally, investment constitutes an important macroeconomic component and this matters for economic growth (Collier & Gunning, 1999).

Parker (cited in Bayai & Nyangara, 2013) noted that economists usually reserve the term investment for transactions that increase the amount of real aggregate wealth in the economy. This includes mainly the purchase (or production) of new real durable assets such as factories and machines. Under the International Centre for Settlement of Investment Disputes Convention, investment encompasses any reasonable activity or asset, that is any form of investment, which adds to the existing capital formation of a country and so has a positive effect on the gross output of a country.

Investment is generally classified into four major components: private domestic investment, public domestic investment, FDI and portfolio investment. Private domestic investment refers to gross fixed capital formation plus net changes in the level of inventories whereas public investment includes investments made by the government and public enterprises on social and economic infrastructures, real estate and tangible assets. The combination of private investment and public investment is normally referred to as gross fixed capital formation and this is distinctive from their counterpart – foreign investment. When foreign investment is on a tangible asset, it is referred to as a direct foreign investment; when it is in shares, bonds, securities, etc., it is called portfolio investment (Bakare, 2011).

Different approaches to theory are generally considered when identifying the determinants of investment. There are a great many competing theories of investment behavior and this study reviews some of the more important and widely discussed ones. According to Ghura and Goodwin (2010), there are four general approaches to modeling investment common in the existing investment literature. These broad categories are the flexible accelerator model (associated with Keynes, 1936); the neoclassical model (associated with Jorgenson, 1971); Tobin's Q model (1969); and the expected profits model and financial factor. The last mentioned has a number of alternatives.

2.1. Flexible accelerator model

The basic notion behind the flexible accelerator model is that the larger the gap between the existing capital stock and the desired capital stock, the greater a firm's investment (Ghura & Goodwin, 2010). The hypothesis is that firms plan to close a fraction of the gap between the desired capital stock K^* , and the actual capital stock K , in each period. Within the framework of the flexible accelerator model, output, internal funds, the cost of external financing and other variables may be included as determinants of K^* (Chirinko, 1993).

Keynes (1936) first called attention to the existence of an independent investment function in the economy when he insisted that there is no reason for ex-ante savings to be equal to even though they are identical ex-post. The next development in investment theory is accelerator theory which suggests that investment is a linear proportion of changes in output. According to Chenery and Koyck (cited in Salahuddin, Islam & Salim, 2009), in accelerator models, investment is independent of the price of capital. Jorgenson (1971) and others accommodated this missing element in the neoclassical model of investment. Both the accelerator and the neoclassical models of investment behavior are output-based models. In sharp contrast to these models, Tobin's Q theory of investment attempts to explain investment behavior in terms of portfolio balance (Tobin, 1969).

More recent literature has introduced an element of uncertainty into investment theory due to irreversible investment (Pindyck, 1991). The argument is that since capital goods are often firm-specific and have a low resale value, disinvestment is more costly than positive investment. He argues that the net present value rule, invest when the value of a unit of capital is at least as large as its cost, must be modified when there is an irreversible investment because when an investment is made, the firm cannot disinvest should market conditions change adversely. This lost option value is an opportunity cost that must be included as part of the cost.

Accordingly, “the value of the unit must exceed the purchase and installation cost, by an amount equal to the value of keeping the investment option active” (Pindyck, 1991). Rodrik (1991) introduces another element of uncertainty, i.e. policy uncertainty, as a determinant of private investment. When a policy reform is introduced, it is very unlikely that the private sector will see it as one hundred percent sustainable. A number of reasons may be adduced, among them the expectation that the political-economic configuration that supported the earlier policies may resurface. There is also the fear that unexpected consequences may lead to a reversal. Investors must then respond to the signals generated by the reform for it to be successful. However, rational behavior calls for withholding investment until much of the uncertainty regarding the eventual success of the reform is eliminated (Asante, 2000).

The fiscal deficit of a government, whether it is financed through printing additional bank notes or through taxation (which equally leads to inflation), decreases the real return on investment (Serven & Solimano, 1992). Moreover, in many developing countries, it is apparent that due to excessive government borrowing, the financial resources available for the private sector are limited and the interest rate is high. On the other hand, expansionary fiscal policy may be important for the expansion of public sector investments in infrastructure (UNCTAD, 1998). In general, the overall impact of fiscal deficit on investment as empirically tested by different studies is ambiguous. This means that excess borrowing by governments boosts inflation and less borrowing affects the construction of large infrastructure and so also investment development.

Chirinko's (1993) study reports that in the neoclassical approach, the desired or optimal capital stock is proportional to output and the user cost of capital. This in turn depends on the price of capital goods, the real rate of interest, the rate of depreciation and the tax structure. Therefore, an investment equation results from the gap between desired capital and the actual capital stock.

Finally, because of the data limitations involved in empirical models of developing economies, especially for capital stock and appropriate measures of return on investment, some studies have used the variants of the flexible accelerator model, where the speed of adjustment is influenced by a number of observable variables (Ghura & Goodwin, 2010). These observable variables may include public investment, credit to the private sector, inflation, the real exchange rate, trade, GDP growth and interest rates.

2.2 Neoclassical model

The neoclassical theory of investment, based on the work of Jorgenson (1963), treats the value of the capital stock desired by a competitive enterprise as a positive function of its output level. Accelerator theory also suggests that as demand or income increases in an economy, so does the investment made by firms. Furthermore, when demand levels result in excess demand, firms increase investment to match demand (Rehman, Khan & Khan, 2009).

Neoclassical investment theory has also hypothesised that private investment is affected positively by income level, as countries with a higher income level would tend to dedicate more of their wealth to domestic savings which would then be used to finance investment (Greene & Villanueva, 1991). According to Chirinko and Ndikumana (cited in Lesotlho, 2006), it also suggests that the growth rate of real output is positively related to investment because it indicates changes in aggregate demand for output that investors seek to meet. The real interest rate is also considered an important variable in determining the level of investment by neoclassical theory. A negative relationship is expected theoretically because of

increases in the interest payable being a disincentive to investment (Rehman, Khan & Khan, 2009).

However, McKinnon (1973) and Shaw (1973) suggest that there could be a positive relationship between investment and the real rate of interest rate because a higher real rate of interest would increase savings, the volume of domestic credit would increase as a result, and equilibrium investment would be higher. This hypothesis, known as the McKinnon and Shaw hypothesis is based on the assumption that the quantity of financial resources is the main constraint on investment rather than the cost of financial resources (Khan & Khan, 2007). According to the early neoclassical approach, interest rate differentials are the main reason for firms to become a multinational company. From this standpoint, capital moves from a country where the return on capital is low to a place where the return on capital is high. This approach is based on perfect competition and capital movement free of risk assumptions (Harris, 2000). Wai and Wong (1982), Greene and Villanueva (1990) and Fielding (cited in Seruvatu & Jayaraman, 2001) identified that the neoclassical investment theory suggests that the growth rate of real GDP influences private investment in a positive manner. This is also known as the “accelerator effect.”

The neo-classical theory also suggests that, as high interest rates discourage investment by raising user cost of capital, private investment is negatively related to the interest rate. Since the real interest rate has become positive only very recently, mainly because of financial sector reforms, the interest rate can have a negative effect only on investment through the saving channel. This is in accordance with McKinnon-Shaw hypothesis. Low or negative interest rates discourage saving and so reduce the amount of savings for investment (Seruvatu & Jayaraman, 2001).

Theoretically, interest rates should be a crucial variable (Shafik, 1992b). The sign of the real interest is an empirical issue and depends on whether the data supports the McKinnon-Shaw hypothesis or the neoclassical view (Ndikumana, 2000). The neoclassical view is that real interest rates are expected to affect private investment negatively since higher interest rates raise the user cost of capital and therefore reduce investment (Ndikumana, 2000). Under the neoclassical investment model, the real interest rate is treated as a key component of the user cost of capital and

therefore affects private investment negatively (Frimpong & Marbuash, 2010). On the other hand, as Agrawal posits (cited in Lesotho, 2006), the McKinnon-Shaw hypothesis states that interest rates affect private investment positively.

2.3. Tobin's Q and profit models

In the Tobin Q theory of investment, the ratio of the market value of existing capital stock to its replacement cost (the Q ratio) is the main force driving investment (Chirinko, 1993; Ghura & Goodwin, 2010). That is to say, enterprises will invest if the increase in the market value of an additional unit exceeds the replacement cost.

There are theories hinging on profits or profits earned by business units and industries instead of output. This analysis of profit and investment relationship has several variants, one of which is that investment is affected by current profits, the amount of retained profits, or by other variables like output, price and sales, which reflect profits (Chirinko, 1993). The profit theory hypothesises that the greater the gross profits, the greater will be the level of internally generated funds and so also the rate of investment (Zebib & Muoghalu, 1998).

In addition, there is the disequilibrium approach, which views investment as a function of both profitability and demand for output (Chirinko, 1993). In this instance, investment decisions have two stages: the first is the decision to expand the level of productive capacity; the second is the decision about the capital intensity of the additional capacity (Serven & Solimano, 1992). The first decision depends on the expected degree of capacity utilisation in the economy and it provides an indicator of demand conditions. The second decision depends on relative prices such as the cost of capital and labor. The investment decision takes place in a setting in which firms may be facing current and expected future sales constraints. Therefore, investment depends on both profitability and the prevailing sales constraints which in turn determine the rate of capacity utilisation (Serven and Solimano, 1992).

Another approach named "neoliberal" (Galbis, 1979) emphasises the importance of financial deepening and high-interest rates in stimulating growth. The proponents of

this approach are McKinnon (1973) and Shaw (1973). The core of their argument rests on the claim that developing countries suffer from financial repression (which is generally equated with controls on interest rates in a downward direction) and that if these countries were liberated from their repressive conditions, this would induce savings, investment and growth. Not only will liberalisation increase savings and loan-able funds, it will result in a more efficient allocation of these funds. Both contribute to higher economic growth.

In contrast with the neoclassical theory, the neoliberal view is that investment is positively related to the real rate of interest. The reason for this is that a rise in interest rates increases the volume of financial savings through financial intermediaries and thereby raises investible funds, a phenomenon that McKinnon (1973) calls the “conduit effect.”

It is clear from the discussion in this section that private investment depends on three broad categories of variables: Keynesian, neoclassical, and uncertainty variables. Variables that may be included in the Keynesian tradition include the growth rate of GDP, internal funds (for example, change in credit to the private sector) and capacity utilisation. The neoclassical determinants of private investment include Tobin's Q, real interest rate, the user cost of capital and public investment ratio. There are three uncertainty variables. The first is variability of the user cost of capital, real exchange rate, inflation rate, distortions in the foreign exchange market and real GDP. The second uncertainty variable is the debt/GDP ratio and the third is debt service as a ratio of exports of goods and services (Asante, 2000).

2.4. Financial factors

Financial factors play a limited role in traditional models of investment. For example, in the neoclassical model, firms choose inputs of capital (and labor) so as to maximise the present discounted value of their income streams. Financial factors enter only through the cost of capital which in turn is independent of the way the firm finances it. This independence arises because capital markets are assumed to be perfect. Thus, firms are able to secure external finance for a project if its expected

marginal return exceeds its cost of capital. In this world, the availability of adequate cash flows is not a constraint on investment and the financial characteristics of the firm do not influence its cost of capital (Mauskopf, 1990).

Some firms (particularly small firms) have limited access to external sources of funding. Smaller firms have difficulty raising funds from capital markets for a variety of reasons. For example, Woo and Lange (1992), note that limited access may arise as a result of prohibitions or barriers to entry that specifically preclude small firms from gaining funds, either through regulation or in terms of the costs involved. Cash flows will be their primary, and in some cases, only source of funds.

There are also issues of taxation, shareholder dilution, control of information, the need to maintain flexibility and liquidity that may have an impact on a firm's financing choices. Financial factors may, therefore, affect the cost and availability of capital and so influence the investment decision (Mills, Morling & Tease, 1994).

Financial factors are generally introduced to standard investment models through information asymmetries or through agency costs. The introduction of these assumptions helps explain how a given level of investment will be funded and how a firm's financial position will influence its investment (Ibid). Informational asymmetries, where managers have more information about a firm than potential debt or equity holders, make it difficult for potential creditors and equity holders to evaluate the prospects of different firms. If creditors cannot distinguish between good quality and poor quality potential borrowers, then the market interest rate is likely to incorporate a premium - good quality borrowers would be charged more than they would in a perfectly informed market (Akerlof, 1970; Stiglitz & Weiss, 1981). Similarly, new equity issues may trade at a discount to their value implied by the underlying prospects of a firm (Myers & Majluf, 1984). The firm may also incur agency costs - costs borne by owners of the firm resulting from potential conflicts between managers, debt holders and equity holders (Harris & Raviv, 1991).

The effect of these information problems is to boost the cost of external finance relative to internal finance. These cost differentials provide some insight into how a given level of investment will be funded - cash flows will be preferred to debt which,

in turn, will be preferred to new equity issues. This financing hierarchy results because cash flows will be the cheapest source of funds, followed by debt and then by new equity. The debt will be cheaper than new equity financing because the debt contract can be structured in such a way as to minimise the consequences of the informational problems. A number of studies confirm the existence of financing hierarchies. Chaplinsky and Niehaus (1990) and Amihud, Lev and Travlos (1990) found evidence that firms prefer internally sourced funds to external securities. Direct management surveys such as Allen (1991) and Pinegar and Wilbricht (1989) confirm these findings.

The theoretical extent of asymmetric information problems and agency costs can be shown to be a function of the structure of a firm's balance sheet. Accordingly, the structure of a firm's balance sheet will influence its investment decision and shocks to the balance sheet will alter the evolution of investment over time. Firms can alter the cost of funding investment in a number of ways. Higher cash flows directly reduce the cost of funds because firms will be less dependent on more costly external funding. They also help reduce the costs of external funds by increasing the collateral backing of external finance. Evidence from the United States suggests that firms should build up their stock of financial assets before undertaking large investments (Whited, 1991; Eckstein & Sinai, 1986). They do this either because they have limited access to external finance or because it provides them with collateral to obtain external funding at a lower cost. Shifts in cash flows, financial assets and leverage may thus influence the dynamics of investment.

Because the degree of asymmetric information and agency costs depend on firm characteristics, certain firms may be more sensitive to financial factors than others. For example, investors are likely to be less well-informed about smaller companies. This may hinder their ability to raise funds and boost the costs of external funding.

Changes in cash flows may thus be a more important determinant of investment for smaller companies (Gertler, 1988; Fazzari, Hubbard & Peterson 1988). Also, the investment of firms with higher leverage may be more sensitive to cash flows than that of firms with lower leverage. The increased debt servicing obligations resulting from higher leverage mean that the available cash flows of higher-g geared firms are

smaller and thus they have less of a barrier against disturbances. Consideration of these links between investment and the balance sheet position of the corporate sector enriches the theoretical representation of the way that monetary policy is transmitted. In simple models, monetary policy affects corporate investment directly by altering the rate at which the expected returns to investment are discounted and indirectly through its effects on demand in the economy generally (Mills et al., 1994).

CHAPTER THREE: LITERATURE REVIEW – EMPIRICAL FRAMEWORK

This chapter deals with the studies made in the field of private investment and its current findings. Several hypotheses are assessed in order to explain variations in private investment in economies. The determinant factors of private investment in developing countries, in Africa and in Ethiopia are examined. In addition, the trend of private investment in Ethiopia and its conceptual framework is studied. The lists of variables below are factors of private investment and are the main focus of discussion.

3.1. Determinants of private investment

Private investment is a crucial pre-requisite for economic growth because it allows entrepreneurs to set economic activity in motion by bringing resources together to produce goods and services. Rapid and sustained growth is facilitated by a virtuous circle whereby entrepreneurship and investment lead to higher productivity, making it possible to invest larger sums in the future. In the course of this process, jobs are created and new technologies are introduced, especially through international trade and investment linkages. Successful mobilisation of private investment is thus increasingly important for creating employment, raising growth rates and reducing poverty.

The main determinants of investment in a given country can be at a micro and macro level. However, as the study emphasises the micro level, the following discussion focuses mainly the main determinants of private investment on a microeconomic level and using different kinds of literature.

3.1.1. Access to credit and Interest rate

- *Private investment in developing countries*

Nainggolan, Ramli, Daulay and Rujiman (2015) examined the determinants on private investment in the North Sumatra Province of Indonesia using secondary data spanning a 32-year period. The results indicated that in the long and short terms, GDP, exchange rate, and investment credits have a positive and significant effect on private investment, whilst interest rates, government investment, inflation and economic crises have a significant but negative effect on private investment.

Suhendra and Anwar (2014) researched the determinants of private investment and the effect of economic growth in Indonesia using panel data. Their results show that the availability of investment financing in the form of investment loans has a positive and significant effect on private investment. They added that the increase of banks' role in financing investment through bank loans to business or real sector investment would increase the level of investment. The analysis concluded that there was a positive relationship between the availability of debt finance for investment purposes and the growth of private investment.

Bhaumik, Das and Kumbhakar (2011) studied firm investment and credit constraints in India at the turn of the century using a stochastic frontier approach. The results suggested that the degree of credit constraint of an average firm increased over time during the sample period, despite significant reforms in the Indian banking sector. They also found that the degree of credit constraint decreases with cash flow and assets, i.e. credit constraints are alleviated by cash flows and assets of firms, but aggravated by a high leverage level. Furthermore, a threshold effect of leverage exists and the degree of credit constraint is greater for highly leveraged firms. Finally, the study found that business groups alleviate credit constraints of member firms, but their ability to do so declines over time.

Munir, Awan and Hussain (2010) examined the long run and short run link between investment, savings, interest rate and bank credit in the private sector in Pakistan. They found that the long run results of private investment show that bank credit to

the private sector, public investment, and private savings determine the success of private investment. This means that the supply of bank credit to the private sector enhances private investment. In addition to this, private savings speed up private investment and play a complementary role in boosting the private investment. The value of the coefficient of the real rate of deposits, though positive and statistically significant, is very small. The study however found out that results of the short run show that the change in the bank credit to the private sector has a very small impact on the change in private investment in the short run. The short run impact of the change in public investment on the change in private investment is also negative, which shows that public investment crowds out the private investment in the short run. The change in the real rate of interest on deposits also has a negative impact on the change in private investment. Private savings positively affect the change in private investment in the short run.

Karagoz (2010) analysed the determining factors of private investments in Turkey between 1979 and 2005 using the Auto-Regressive Distributed Lags (ARDL) model. The result of their analysis shows that in the long run real GDP, real exchange rate, the ratio of private sector credit to GDP, private external debt, inflation, and trade openness have a significant impact on private investments. The impacts of first and last variables are negative whilst others are positive.

The impact of the interest rate on investment in Jordan was investigated by Bader and Ibrahim (2010) using co-integration analysis. The results of the study showed that the impact of the real interest rate on investment is negative and that the influence of the real interest rate on investment is higher than the influence of income.

Günçavdi, Bleaney and Mckay (2008) found out that financial factors are important in the determination of private investment behavior in Turkey. In particular, the borrowing constraints and indebtedness of firms are the most important factors influencing investment demand. In addition to this, they examined the role of financial constraints in the investment process and evaluated the impact of financial liberalisation programmes.

A study by Poncet, Steingress and Vandebussche (2008) regarding financial constraints on Chinese firms to test the existence of a "political-pecking order" in the allocation of credit, found that private Chinese firms face severe financial constraints while there are no such constraints for state-owned and foreign enterprises. They argued that the discrimination against private firms by financial institutions is at odds with the observation that these firms are the engine of growth in the Chinese economy. The findings are that firstly, private Chinese firms are credit constrained while state-owned and foreign-owned firms are not. Secondly, that the geographical and sectorial presence of foreign capital alleviates credit constraints faced by private Chinese firms. And thirdly, that the geographical and sectorial presence of state firms aggravates financial constraints for private Chinese firms ("crowding out").

A study by Gnavdi and McKay (2003) conducted on macroeconomic adjustment and private manufacturing investment in Turkey examined the main determinants of PIMS and the impacts of structural adjustment (particularly financial liberalisation as an integral part of the reform). The study showed that liberalisation policies in financial markets appear to have positive effects by reducing the stringency or rigidity of quantity constraints on investment while the high-interest rates resulting from financial liberalisation had no significant impact on investment. Macroeconomic instability, proxied by the variability of the inflation rate, seems to have discouraged investment in manufacturing. The study also examined the roles of credit and foreign exchange constraints in the determination of private investment in the manufacturing industry in Turkey and found that private manufacturing investment is affected by different factors in the long and the short run. In the long run, the accelerator effect and credit are the two influential factors in the manufacturing industry. The growth rates of demand (as an accelerator variable) and credit stock to the private sector are also important in explaining the short-run fluctuations in the manufacturing investment. The availability of foreign exchange is important, but not as much as the growth of demand and credit. Macroeconomic uncertainty appeared to have no significant effect.

Hallward-Driemeier, Wallsten and Xu (2003) showed that a firm's performance is positively correlated with foreign ownership, research and development, information and communications technology, staff quality, the share of the firm's labor force that

receives training from the firm, and access to external finance. Excess capacity is negatively correlated with a firm's performance, whilst time spent with regulators is negatively correlated with total factor productivity. In summary, a firm-level investment climate analysis reveals that the main determinants of positive performance in China are international integration, entry and exit, labor market issues, technology use, and access to external finance.

- *Private investment in Africa*

Agu (2015) analysed the determinants of private investment in Nigeria between 1970 and 2012 using error-correction modeling. The conclusion was that the investment rate is positively correlated with both the growth rate of disposable income and the real interest rate on bank deposits. This study discovered that investment has been slowed down in Nigeria as a result of increased lending rates, reduced public expenditure, reduced savings, political instability and inadequate infrastructure.

A study by Kehinde, Felix, Kayode and Adedamola (2012) showed that private sector output, GDP, and credit to the private sector have all been significant determinants of private investment rates. The empirical evidence suggested that if the sector lacks adequate credit, there would be a reduction in the level of private investment with an adverse effect on the long-term productive capacity of the private sector. The results also suggested that the interest rate is inversely related to private investment, but that it is not significant. It means that when interest rate rises, the cost of borrowing increases, so there will be a decline in future profits and as a result, the motivation to invest declines. The result provided evidence that private investment in Nigeria is constrained by the unavailability of financing, and that monetary policy could be used to influence private investment decisions.

In Addition, Harupara (1998), in his investigation of determinants of private investment in Namibia, identified that credit granted to the private sector positively affected private investment in the country. Credit availability is also positively and significantly related to private investment in Ghana (Akpalu, 1997). Oshiokya (1994) found out that credit disbursement to the private sector had strong positive and significant effects on private investment in African countries. Some argue that the

availability of finance, rather than the cost of finance, has an influence on investment. It seems rational to take into account the availability of finance represented by the proportion of credit disbursed to private investors, as a determining factor rather than the interest rate. The expected sign is positive because as the availability of finance increases, people can have the finance required to invest, and this in turn increases the rate of private investment (Harvey, 1985).

The study on credit constraints in manufacturing enterprises in Africa by Bigsten (2003) examined whether firms in the manufacturing sector in Africa are credit constrained. It suggested that demand for credit is strongly related to size and that demand for formal loans among African manufacturers is low. According to the study, most firms obtained loans, but there are big differences in firm size. Loan applications are less common among small firms, and the success rate here is lower than that of large firms. The study concluded that on the supply side, banks allocate credit to those firms that can earn more profits.

According to Habyarimana (2003), firms affected by the banking crises are more likely to report being credit constrained, suggesting that losing a banking relationship hampers investment.

Similarly, Mbugua (2000) in his Kenyan case study, showed that the interest rate was negatively associated with private investment. This finding was also supported by Akpalu (1997) on determinants of private investment in Ghana. He found that the real interest rate was negatively associated with private investment.

Investigating the determinants of domestic investment in Africa, Mlambo and Oshikoya (2001) further showed that macroeconomic factors such as fiscal deficit, domestic credit to the private sector, the real exchange rate, and macroeconomic uncertainty explain a substantial part of the weak investment performance in Africa. They, therefore, concluded that the establishment of a sound macroeconomic framework is a prerequisite for sustained investment recovery in the continent. Further, they argued that in order to encourage domestic investment, the stability

and predictability of the incentive framework (relative prices, interest rates, exchange rate, etc.) might be more important.

Bigsten and Soderbom (2006) conducted a study on lessons learned during a survey of a Decade of Manufacturing Enterprise Surveys in Africa. They found that investment in physical capital has remained low, more because of uncertainty than because of a severe credit constraint. There is some evidence that a lack of credit has been a problem for small firms, but although the profit effect on investment is larger for small than for large firms, it is still quite small. Analysis of firms' borrowing behavior paints a similar picture: on average the desire for formal credit has been relatively modest, although demand for credit is relatively high among very small firms. The most likely explanation for why a lack of credit has not been a major factor in explaining the low levels of investment over the last decade is that few firms could identify strong investment opportunities during this period. Next, exports have remained low throughout the period, and research indicates that the high costs of entering the export market may be part of the reason. This has two potentially important policy implications. First, if incentives can be created, firms enter the export market and are likely to remain in the market for some time. Second, high entry costs imply that there is a large set of firms that remain focused on the domestic market, even though they are internationally competitive. Reducing entry costs will give these firms access to a larger market.

A study by Record and Davies (2007) in Malawi, highlighted the following four top constraints: macroeconomic instability, finance, electricity supply and the availability of skilled workers. Macroeconomic instability was the primary constraint to doing business. The study also reported access to and cost of finance as being a major constraint. This is a reflection of the macro instability that has driven real interest rates very high in Malawi. The Investment Climate Assessment (ICA) data also shows that most of the firms have access to some form of banking services, while few firms have access to longer term financing. Both the cost and consistency of supply of utilities are major constraints to private sector investment, and this was stressed by the managers in the ICA survey. In this survey, it was also reported that the unavailability of skilled workers is a major constraint to investment rather than labor regulations. Additional constraints, while not the leading problems, include the

costs associated with crime and corruption. Malawian firms lose 4% of sales to crime (double the average for Sub-Saharan Africa), and pay on average 2% of sales to public officials to “get things done.”

A study by Raphael (2014) on determinants of private sector investment in Nigeria suggested that interest rates and credit to the private sector has not been able to contribute effectively or boost private investment in Nigeria. Changes in the volume of bank credit to the private sector are suggested to have had a positive impact on private investment activity in the developing countries (Oshikoya, 1994; Ndikumana, 2000).

According to a study by Batra, Kaufmann and Stone (2003), the leading constraint cited by enterprise managers in Africa is financing, followed by corruption, infrastructure and inflation. Pooling data across all regions, the researchers found a negative and statistically significant relationship between the growth in sales and investment, and taxes, regulations and financing. Quantitatively, the largest effect is that of financing constraints on sales growth. One implication of a poor business environment is that the costs for certain services important to manufacturers will be high. The study showed that African firms have high indirect costs (transport, logistics, telecommunications, water, electricity, land and buildings, marketing, accounting, security, and bribes) compared with firms in Asia and that African firms suffer substantial losses from power outages, crime, shipment losses, and the like. Furthermore, economic risk in Africa is typically high, credit is expensive or unavailable, skilled labor is relatively expensive and domestic markets are typically very small.

Moreover, Abuka, Egesa, Atai and Obwona (2006), carried out an analysis of firm-level investment determinants and constraints using data collected by the Bank of Uganda. The bank used the Uganda Business Inquiry (UBI) Survey and private sector investment surveys. They found out that turnover, profit and credit are significant determinants of firm-level investment. The results further showed that the profit effect is larger for small and medium sized enterprises compared to large firms. However, contrary to expectation, credit was not a significant factor on investment for small and medium-sized firms. It is possible that small and medium-sized firms

use their own contributions and profits as sources of capital rather than credit. This would imply that credit is required to ease temporary cash flow problems as opposed to the new capital formation.

A study by Naudé, Oostendorp and Serumaga-Zake (2000) on determinants of investment and exports of South African manufacturing firms, showed that labor costs in South African manufacturing firms were found to be high in comparison to other African countries where similar surveys were conducted. Moreover, it was believed that manufacturing firms perceive their environment to be less uncertain than their counterparts in Kenya and Zimbabwe, suggesting that uncertainty is less of a deterrent to investment in South Africa than in other African countries, and credit constraints are even less of a problem for the present.

Bigsten and Soderbom (2006) review the research results on manufacturing firms in Africa. They examine the business environment and place particular emphasis on risk, access to credit, labor, skills and infrastructure. The study looks in some detail at what has been learned about four key aspects of a firm's performance: growth, investment, technology acquisition and exports. The business environment has emerged as the prime suspect for poor enterprise performance in Africa and improving the investment climate is seen to be a priority for the continent (World Bank, 2005). Labor costs and the supply of labor in general, and specific skills in particular, are important for good performance. Two general results in this area have emerged from the research on the African survey data, one related to earnings and education and one to earnings and firm size. The first is that earnings are positively correlated with education. The way for firms to grow and remain profitable is through improved performance in the form of higher productivity.

- *Private investment in Ethiopia*

Ambaye, Berhanu and Abera's (2014) study on the determinants of domestic private investment in Ethiopia identified that domestic credit given to the private sector reduces domestic private investment because the credit may be diverted to non-productive activities. The study further identifies that the appreciation of the real

exchange rate discourages domestic private investment and vice versa. In short, the high value of local currency constrains domestic investment.

Dawit (2010) showed that the following are the success factors for private investment in Mekelle City: the maintenance of good accounting records by firms, good managerial skill, experience, government support and training. The major problems are a lack of proper planning and feasibility studies, lack of skilled staff, delays in securing bank loans, a lack of market for output, infrastructure problems and inflation.

Lastly, a study by Workie (1996) on constraints to entry, operation and expansion of private investment in Ethiopia using investor level information showed that bureaucratic procedures, a lack of infrastructure, power supply problems and access to finance were the leading constraints for operations. The other areas of the business environment (such as political/policy uncertainty and labor regulations) were relatively less important. The survey ultimately confirmed that the availability of finance rather than the interest rate is a crucial determinant of private investment in Ethiopia. Macroeconomic instability and political/policy uncertainty were not found to be significant determinants of private investment.

3.1.2. Judiciary system, Bureaucratic red tape, Corruption and Political instability

- *Private investment in developing countries*

Soneta, Bhutto, Butt, Mahar and Sheikhet (2012) found out that investment in infrastructure is inversely proportional to the productivity and growth of the manufacturing sector in Pakistan because of the political instability and economic conditions of the country. Due to these conditions, new investors do not want to invest in Pakistan and existing investors wish to move their businesses to abroad.

Asiedu and Freeman (2009) studied three important economic areas: transition countries, Sub-Saharan Africa, and Latin America and the Caribbean. They found

that corruption has an adverse effect on investment growth in transition countries, but has no significant effect in Latin America and the Caribbean, and Sub-Saharan Africa. Furthermore, among the variables (firm size, firm ownership, trade orientation, GDP growth, inflation and openness to trade) corruption is the most important determinant of investment growth for transition countries. This shows that the overall effect of corruption on investment is negative.

A study by Basar and Zyck (2012) on the impact of corruption on investment showed that corruption was among the most significant obstacles facing investment cited by Afghan business people. Others included access to land, anti-competitive behavior and tax administration, all closely related to corruption. The World Bank's report on the investment climate in Afghanistan identifies the major obstacles to investment as being electricity, access to land, corruption and access to finance.

The survey made by Seruvatu and Jayaraman (2001) on determinants of private investment in Fiji indicated that the principal factors hindering investment are largely policy-related issues. This suggested that while investment incentive schemes might go some way in promoting investment, the key to improving the investment climate is clear policy direction and simple bureaucracy and regulation. The top major obstacles to investment were government policy uncertainty, bureaucratic red tape, government regulations, finding skilled labor, volatile political situations, land issues, law and order instability, a lack of infrastructure, and high utility costs like water and electricity. Consumer confidence, interest rates, shipping costs, profitability, bank fees and charges, price controls, tax rates, racial issues, medical/education facilities, finding suitable land/premises, availability of work/sales, lack of bank lending, wages, cash flow, contract security, and exchange controls were relatively less important. Other impediments to investment include expatriate permits, a lack the Board of Directors' support and interest, lack of management focus and prioritising, trade union issues, lack of local equity, labor rigidity, trade relations, lack of raw material, international tax treaties, and coups and crime (Ibid).

According to the findings of the study by Pun (2005) on strategy determinants and choices in manufacturing enterprises in two Chinese cities – Hong Kong and Shanghai – marketing strengths are the leading strategy determinants. Product and

service quality, company reputation and production and operations costs were also key components of strategy determinants. The study also found that Shanghai respondents stressed the importance of research and development and innovation capabilities, whilst Hong Kong respondents favoured management commitment. So, the study indicated that both corporate and marketing strengths affect strategy choices in many manufacturing enterprises. It was also found that for the Hong Kong group, no strong statistical evidence exists for technology strengths versus proactive strategies. For both groups, there was little to differentiate operational strengths from proactive strategies.

- *Private investment in Africa*

Ogunbayo, Sangodoyin, Lawal and Okoruwa (2014) used error-correction modelling of analysis to examine the behavior of private investment in Nigeria and investigate the factors responsible for them. The macroeconomic analysis of the determinants of private investment in Nigeria reveals that there is a link between private investment and economic growth vis-à-vis public investment, exchange rate, Corruption Perception Index, inflation, saving rate, terms of trade, political instability and credit to the private sector. These variables are all significant and have a negative relationship with private investment, except domestic credit to the private sector which has a positive relationship.

Bayai and Nyangara (2013) conducted a study on the analysis of the determinants of private investment in Zimbabwe for the period 2009-2011. Variables identified for the study include political risk, national savings, inflation, interest rates, public investment, trade terms and debt servicing. The study identified political risk, interest rate, debt servicing, and trade terms as key determinants of private investment over the study period.

Naa-Idar, Ayentimi and Frimpong (2012) measured the influence of political stability on private investments. This variable recorded a significant positive correlation both in the short and long runs. This implies that constitutional overthrows or military takeovers will affect private investment negatively by creating an adverse climate to private investment. This signifies that multi-party democracies can serve as an

inducement to private investment. Thus, a present democracy which appears considerably stable must have contributed positively to private investments in Ghana.

The study by Mbugua (2000) on the micro and macroeconomic determinants of PIMS in Kenya, found out that inefficient infrastructure, corruption, insecurity, weak institutional framework and inefficient bureaucratic public service are the greatest hindrances to PIMS in Kenya.

A study by Weder (1998) on Sub-Saharan African countries' using data on institutional factors is also of relevance. The institutional factors employed by this study were qualitative information on annual ratings of the following indicators: quality of bureaucracy, the rule of law, policy surprises, credibility of announcements, extent of availability of information on new rules, the degree to which business can participate in making new rules, predictability of judiciary enforcement, theft and crime, security of property rights, frequency of corruption, uncertainty of corruption, and corruption were all perceived as obstacles to business. The study concludes that factors related to predictability of judiciary enforcement; theft and crime; security of property rights and uncertainty of corruption are the most significant.

A study by Anyanwu (2006) on promoting investment in Africa examined the trend, constraints, promotion and prospects of investment in Africa. In particular they looked at domestic investment, FDI and private portfolio investment, and they identified a number of reasons for the low level of investment in Africa. It ranged from political and macroeconomic instability to inhospitable regulatory frameworks and weaknesses in infrastructure provision, governance, and institutions in general. The major factors that are examined in the study are:

- i. The fact that African financial markets (money and capital) are inefficient, underdeveloped and inaccessible to most savers and credit-seekers. This hinders adequate domestic savings mobilisation and the attraction of foreign capital for domestic investment.
- ii. A relatively high degree of uncertainty on the continent, which exposes firms to significant risks like the lack of the rule of law, high corruption and volatility in real exchange rate, a high incidence of wars, frequent military interventions

in politics, and religious and ethnic conflicts, high frequency of government as well as policy changes on the continent and the lack of transparency in macroeconomic policy. This last is of concern because it increases transaction costs, thereby reducing the incentives for investment.

- iii. Weak law enforcement stemming from corruption and the lack of a credible mechanism for the protection of property rights.
- iv. A low investment in human capital which leads to high illiteracy levels, inadequate access to health services, a lack of skills and adaptation to technology as well as the low capacity to absorb physical capital.
- v. The lack of a favorable investment climate, including slow and complicated business requirements, inefficiency, and bureaucratic system of work.
- vi. The absence of adequate supporting infrastructures such as telecommunications, transport, power supply and skilled labor, discourages domestic investment.

The study showed that Africa needs increased investment for higher and sustained growth. There is a need to increase the productivity of its investment (in terms of domestic exchange returns) through increased capacity utilisation, skilled and technological development as well as other supporting national, regional and international policy measures. With respect to domestic resource mobilisation, it is worth noting that many African countries have undertaken financial reforms to enhance savings through liberalising interest rates, eliminating credit controls, and reducing directed credit programs. These measures constitute the first steps towards rendering the financial systems more responsive to mobilising resources. Other measures that are being taken include improving banking infrastructures; developing non-bank financial instruments, and supporting microfinance.

A study by Busia (2007) on the overview of challenges of the investment climate stated that potential investors in Africa are confronted with a number of challenges including prolonged delays in starting a business, getting requisite licenses, legal regimes for hiring and firing workers, registering property, obtaining credit, protecting investments and enforcing contracts. In addition, the overall favorable political environment for investment including peace and security are not guaranteed, and there is a ever present perception of corruption in the region.

According to the 2013 World Bank's *Ease of Doing Business Rank*, which assesses starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts, and resolving insolvency, 37 of the 50 lowest ranking countries (out of 189) are in Africa. The unfavorable investment climate in many African states results from poor governance, institutional failures, macroeconomic policy imperfections and inadequate infrastructure, as well as uncontrolled corruption, bureaucratic red tape, weak legal systems and a lack of transparency in government departments. In addition, the overall poor image of Africa as the locale of physical insecurity and lack of peace and stability have made it difficult for the continent to attract foreign capital and mobilise adequate and sustained levels of domestic private investment to attain the levels of growth. More fundamentally, good governance (the other dimension of a good investment climate) is critical for increasing domestic investment (Busia, 2007).

3.1.3. Infrastructure facilities, Land access, and Investment incentives

- *Private investment in developing countries*

Vergara (2004), in his study on taxation and private investment in Chile, confirmed that investment was positively affected by tax reforms because lower taxes induced a higher private investment ratio. Private investment was negatively affected by higher corporate tax rates.

The survey made by Seruvatu and Jayaraman (2001) on determinants of private investment in Fiji indicated that the principal factors hindering investment are largely policy-related issues. This suggested that while investment incentive schemes might go some way in promoting investment, the key to improving the investment climate is clear policy direction and simple bureaucracy and regulation. The top major obstacles to investment were government policy uncertainty, bureaucratic red tape, government regulations, finding skilled labor, volatile political situations, land issues, law and order instability, a lack of infrastructure, and high utility costs like water and electricity. Consumer confidence, interest rates, shipping costs, profitability, bank

fees and charges, price controls, tax rates, racial issues, medical/education facilities, finding suitable land/premises, availability of work/sales, lack of bank lending, wages, cash flow, contract security, and exchange controls were relatively less important. Other impediments to investment include expatriate permits, a lack the Board of Directors' support and interest, lack of management focus and prioritising, trade union issues, lack of local equity, labor rigidity, trade relations, lack of raw material, international tax treaties, and coups and crime (Ibid).

- *Private investment in Africa*

Several studies of growth determinants in Africa, especially the study by Collier and Gunning (1999) entitled *Explaining African Economic Performance* showed that poor infrastructure is a serious constraint to growth on the continent. Compared with other regions, public expenditure as a share of GDP has been higher in Africa but service provision has been worse. The poor infrastructure in Africa is likely to be a particularly severe constraint to manufacturing growth.

- *Private investment in Ethiopia*

Adugna (2013) undertook a study covering the period 1981-2010 using Ordinary Least Square (OLS) regression to model the determinants of private investment in Ethiopia. Findings from the study showed that public investments in basic infrastructures and social overheads are essential for private investment. In addition, the rising real per-capital income of the people has a crucial positive effect on private investment by way of increasing market demand for goods and services. These in turn trigger private investment. Likewise, external debt has a favorable effect on private investment in countries like Ethiopia where there is a serious shortage of finance.

A study by Baye et al. (2005) on the macro and microeconomic determinants of private investment both at national and regional levels in Ethiopia showed that at the micro level the probability of individual's to invest is significantly and positively influenced by the level of education, access to land and investment incentives. The

influence of bureaucratic red tape was also found to be negative and significant. Moreover, Deneke's (2001) study concluded that unclear land policy, compounded by investors' fear of political instability, has impeded PSD.

Getachew (1997) studied the determinants of private industrial investment in Ethiopia using descriptive statistics to analyse micro-level determinants. He found that the real interest rate did not have a significant impact on private investment in Ethiopia. The study revealed that private investment was positively affected by credit disbursement to the private sector in Ethiopia. It also found that severe constraining factors to private manufacturing investment were market, financial, infrastructure, policy, technology, and input related ones.

3.1.4. Investment types and location

- *Private investment in developing countries*

Pun et al. (cited in Pun 2005) identified a list of common success factors and problem areas for manufacturing businesses in Hong Kong. The success factors are: accessibility to markets, availability of funds and capital, availability of workforce, company's location, company's mission, company's policies, company's reputation, company's strategies, cost of production and operations, customer services, employee involvement, information technology or system, management commitment and communication, market share, market positioning, materials supply, product mix and range, product or service quality, research and development or innovation capabilities, and workforce skills or abilities and training. The problem areas are: cash flow problems, effects of protectionism, few current and potential markets, few suppliers and/or vendors, high employee turnover, increasing production costs, insufficient research and development, strong local competition, lack of government support, low productivity (including poor employee morale), political influence, and strong overseas competitors. Management commitment, the company's mission, and the availability of funds and capital are key determinants for organisational success in various endeavors.

- Private investment in Africa

According to Abuka, Egesa, Atai and Obwona (2006), carried out an analysis of firm-level investment determinants and constraints using data collected by the Bank of Uganda, location is significant and firms located within the central region are likely to invest less than those located outside the central region in Uganda. Concerning size, it is indicated that large sized firms are more inclined to reinvest over time as opposed to small and medium sized enterprises. This could possibly be attributed to an easier access to credit for large firms as well as the possibility of large firms investing more from retained earnings. Lastly, the effect of sector location is also found to be significant for firms in agriculture, manufacturing, and services (Abuka, Egesa, Atai and Obwona, 2006).

Table 3.1 below provides a summary of the major factors discussed in the literature above that affect investment – both positively and negatively.

Table 3.1: Determinants of investment identified in previous studies

Variables	Positively related to Investment	Negatively related with Investment
Educational level	Bigsten & Soderbom (2006); Egesa (2010)	Seruvatu & Jayaraman (2001)
Access to credit	Suhendra & Anwar (2014); Munir, Awan & Hussain (2010); Harupara (1998); Record & Davies (2007); Nainggolan, Ramli, Daulay & Rujiman (2015); Hussien (2000); Michael & Aikaeli 2014, Ogunbayo, Sangodoyin, Lawal & Okoruwa (2014)	Batra, Kaufmann & Stone (2003); Ambaye, Berhanu & Abera (2014); Egesa (2010)
Interest rate		Agu (2015); Kehinde, Felix, Kayode & Adedamola (2012); Bader & Ibrahim (2010); Seruvatu and Jayaraman (2001); Mbugua (2000); Nainggolan, Ramli, Daulay & Rujiman (2015)
Infrastructure facilities		Soneta, Bhutto, Butt, Mahar & Sheikhet (2012); Seruvatu & Jayaraman (2001); Collier & Gunning (1999); Getachew (1997)
Access to land		Deneke (2001); Seruvatu & Jayaraman (2001)
Judicial system		Record & Davies (2007)
Bureaucratic red tape		Busia (2007); Seruvatu & Jayaraman (2001); Mbugua (2000)
Corruption		Asiedu & Freeman (2009); Basar & Zyck (2012); Record & Davies (2007); Ogunbayo, Sangodoyin, Lawal & Okoruwa (2014)
Investment incentives	Baye, Fufa & Wakjira (2005); Seruvatu & Jayaraman (2001)	
Political instability risk		Agu (2015); Pun et al. (cited in Pun 2005); Mbugua (2000); Ogunbayo, Sangodoyin, Lawal & Okoruwa (2014)
Investment location & areas	Pun et al. (cited in Pun 2005)	

(Source: Self compiled, 2014)

3.2. Trends of private investment in Ethiopia

In the above sections, the determinants of private investment identified in existing literature were highlighted and discussed. In this section, the trends of the investment climate in Ethiopia will be reviewed during three distinct periods, the imperial era (prior to 1974), the Dergue Era (1975-1991) and the post-Dergue period (1991 to date).

3.2.1. Private investment trends during the imperial era (prior to 1974)

During the imperial period, important reforms were introduced and these impacted on investment development in Ethiopia. The development of basic infrastructure began in the late 1950s in Ethiopia and this included a system of administration, road construction, Ethiopian airlines, banking and electric power. All these contribute well to planned development.

The first legislation on investment was introduced and enacted in 1950 but it did little to encourage high investment. In 1954, agricultural and industrial expansion proclamations had a good impact on investment because it required industrial and agricultural investment from both domestic and foreign investors.

During the period 1941-1955, a number of manufacturing industries began operating. In line with this, the government introduced tax incentives, high levels of tariff protection and favorable credit terms to encourage and attract an inflow of capital into different sectors. From then till 1974, different enterprises were started and these included foreign owned initiatives in the manufacturing sector.

The *Investment Decree No. 51 of 1963* (Imperial Government of Ethiopia, 1963) was issued at a time when infrastructure development (road transport, air transport, banks, power generation, etc.) was taking place at a rapid pace. Private investment was singled out for attention and this led to the import substitution strategy which was adopted in the five-year development plans.

A system of attractive incentives (including tax holidays, low or no taxation on imported capital goods, satisfactory remittance of profits, etc.) was built into the investment proclamation and foreigners were permitted to establish companies and carry on all kinds of business in Ethiopia in the same way as Ethiopian nationals could.

In the 1960s, with the issuance of the above decree, the rate of private investment (both domestic and foreign), increased. Private investment was expected to play a leading role in mining and housing while investments in infrastructure, education, health and social welfare were undertaken by the public sector as part of various development plans between 1968 and 1973.

3.2.2. Private investment trend during the Dergue period (1975-1991)

During the Dergue period the focus was on nationalisation and the public ownership of most economic sectors. *Proclamation No. 26/1975* (Military Government of Ethiopia, 1975a), was a decree which introduced widespread nationalisation and large numbers of private businesses were nationalised.

Proclamation No. 76/1975 (Military Government of Ethiopia, 1975b) issued at about the same time as the nationalisation proclamation restricted private operations to a few lines of activities and imposed capital ceilings on them. Only individual business was allowed (without branches) and private businesses were organised in the form of partnerships where membership was restricted to 5 persons.

Government policies during the Dergue regime strictly limited private sector investment capital and placed a ceiling amount of Birr 500,000 on investors. They were also not allowed to hold a license for more than one line of business and this had to be run by only one individual entrepreneur who did not have any other permanent job.

The tax structure was very harsh with the maximum rate on personal income being as high as 89% (MoFED, 1999). In addition, interest rates were higher for private borrowers than for public enterprises and cooperatives. These policing mechanisms

severely hampered the potential for expansion of the manufacturing sector during the Dergue period and private sector activity was effectively incapacitated.

In 1983, joint ventures were allowed (Military Government of Ethiopia, 1983) but only if they involved government and foreign capital. According to this proclamation, the government must have the majority share in all such joint ventures. Consequently few joint ventures were established.

The *Special Decree No 11/1989* (Peoples Democratic Republic of Ethiopia, 1989), amended *Proclamation No. 235/1983* and permitted domestic private capital participation in joint ventures, and lifted the restriction on the duration of the joint venture agreement and the provision for majority shareholding by the government.

In March 1990, there was a change of course when the government chose to pursue the “mixed economic” policy. *Special Decree No. 17/1990* (Peoples Democratic Republic of Ethiopia, 1990) was issued in May 1990 and it removed most restrictions imposed on domestic private businesses and foreign investment in previous legislations.

As the policy was so restrictive and marginalised the private sector, it is not surprising that the private investment ratio in Ethiopia did not fare well when compared to the average for Sub-Saharan African countries during the same period. At this time the average investment ratio for Sub-Saharan African countries excluding South Africa was about 10% of GDP, whilst that of Ethiopia was on average (between 1975-1991) 2.4% of GDP. On the other hand, public investment in GDP did increase during the time of the intensification of the establishment of the state-owned enterprises.

3.2.3. Private investment trend post -1991

After the seizure of power by the Transitional Government of Ethiopia (TGE) in 1991, most of the policy distortions of the Dergue were rectified. The new economic policy of Ethiopia adopted by the TGE pursued a market-oriented economy by rationalising its role and encouraging greater participation of the private sector. To revitalise the

economy and stimulate growth, the Economic Reform Program (ERP) was launched in 1992/93 and this was further strengthened by the FDRE in order to redress the structural bottlenecks of the Ethiopian economy.

Like many African countries, Ethiopia adopted a structural adjustment program following the change of government (MoFED, 1999). The exchange rate was devalued, government monopolies were abolished, domestic markets and imports were liberalised and export disincentives were largely rectified.

A major structural reform in the monetary and financial sector during the reform program has been the introduction of a competitive financial sector, including the establishment of private banking and insurance companies.

In order to realise the policy of encouraging PSD, *Proclamation No. 15/1992* (Transitional Government of Ethiopia, 1992) was enacted in May 1992. The proclamation signified a major departure from the previous regime's investment *Special Decree 17/90* (Peoples Democratic Republic of Ethiopia, 1990). It provided new areas of investment, particularly for domestic investors, in areas such as air transport, electricity production and distribution, banking and insurance. Moreover, it allowed foreign investors to enter into joint ventures with domestic private investors without limiting them to joint ventures with the government.

In June 1996 *Proclamation No. 37/1996* (FDRE, 1996) was enacted. In it, investment objectives, areas and incentives were defined, as were forms of investment and capital requirements for foreign investors, investment permits, transfers of technology, loans, the utilisation of foreign currency and remittance of funds, and investment administrative requirements. This proclamation clarified some of the ambiguities that prevailed in the first one.

With regard to the institution to implement investment policy and incentives, Investment Office of Ethiopia (then known as the Ethiopian Investment Commission, EIC) was established. The commission was accountable to the Investment Board which was chaired by the Prime Minister. The responsibility of the EIC process investment application was to issue investment certificates and the grant investment

incentives provided for in the proclamation. The EIC was responsible for investors with and above a capital amount of Birr 250,000 for domestic investors, and USD 500,000 or equivalent for foreign investors. If investors were unhappy with the decision of EIC, they could appeal to the Investment Board whose ultimate decision was final.

Investment Proclamation No. 280/2002 (FDRE, 2002) was enacted in order to accelerate the economic development of the country and improve the living standard of its peoples, and in particular that of domestic investors. It also aimed to widen the scope of participation of foreign investors and facilitate conditions which enhanced the country's investment activities and made the administration system of investment transparent and efficient.

The *Council of Ministers Regulations No. 84/2003* (FDRE, 2003) outlined investment incentives and investment areas reserved for domestic investors. These regulations were issued to amend the definition of powers and duties of executive organs of the FDRE and re-enactment of investment proclamations. This includes the investment activities eligible for income tax exemption and exemption from the payment of customs duty. The last regulation of investment activity is the *Council of Ministers Regulation No. 146/2008* (FDRE, 2008) and it amended the investment incentives and investment areas reserved for the domestic investor.

Due to the policies and activities introduced by the government and investors on investment, economic development was encouraged in different sectors. Table 3.2 below shows that since 1998/99, the GDP of the country showed an increasing trend and this was caused by the economic policy reforms adopted by the then government. According to the trend of Real GDP growth, from 1998/99 to 2001/02 the GDP increased. The following year showed a decrease after that there has been a steady but fluctuating increase. Investment during this period is higher when compared to previous governments. This might be because of the new economic reform programs and investment codes launched by the government. They measurably contributed to and promoted the participation of investment sectors in economic activities.

Table 3.2: GDP and Real GDP 1998/99 to 2012/13

Year	GDP in Millions of Birr	Real GDP growth
1998/99	58,838.5	5.2
1999/00	62,299.4	5.9
2000/01	66,920.7	7.4
2001/02	68,014.2	1.6
2002/03	66,586.9	-2.1
2003/04	74,397.1	11.7
2004/05	83,804.0	12.6
2005/06	93,474.5	11.5
2006/07	104,499.7	11.8
2007/08	116,178.6	11.2
2008/09	127,737.5	10.0
2009/10	141,187.7	10.6
2010/11	157,464.0	11.4
2011/12	162,389.0	8.8
2012/13	169,754.0	9.7

(Source: *Annual Report*, NBE, 2013/14)

In addition, the number of domestic private investments also increased from year to year. The total number of private investors engaged in domestic investment in the manufacturing sector is presented in Table 3.3 below. Capital and job opportunities are also noted.

Table 3.3: Licensed domestic manufacturing sector by regions (1992-2013)

Regions	No. of Projects	Capital mln Birr	Perm. Empl.
Addis Ababa	3,508	28,966	178,994
Harari	118	267	3,492
Tigray	857	9,425	31,063
Afar	5	24	229
Amhara	464	6,143	18,449
Oromia	1,634	25,482	100,706
B. Gumze	13	58	275
Dire Dawa	289	2,812	7,933
Gambella	2	7	19
SNNP	444	2,260	16,293
Somali	23	300	583
Total	7345	244,967	1,071,536

(Source: EIA, 2013)

Table 3.4 below shows that the number of industries between 2008/09 and 2010/11 increased in almost all areas of the industrial group found in Ethiopia. It is interesting to note that though there is an increment within the stated period, there is also high fluctuation from year to year in a few industrial groups. Food products and beverages, other non-metallic minerals and furniture account for about 30%, 29%, and 18% respectively of the total industrial group.

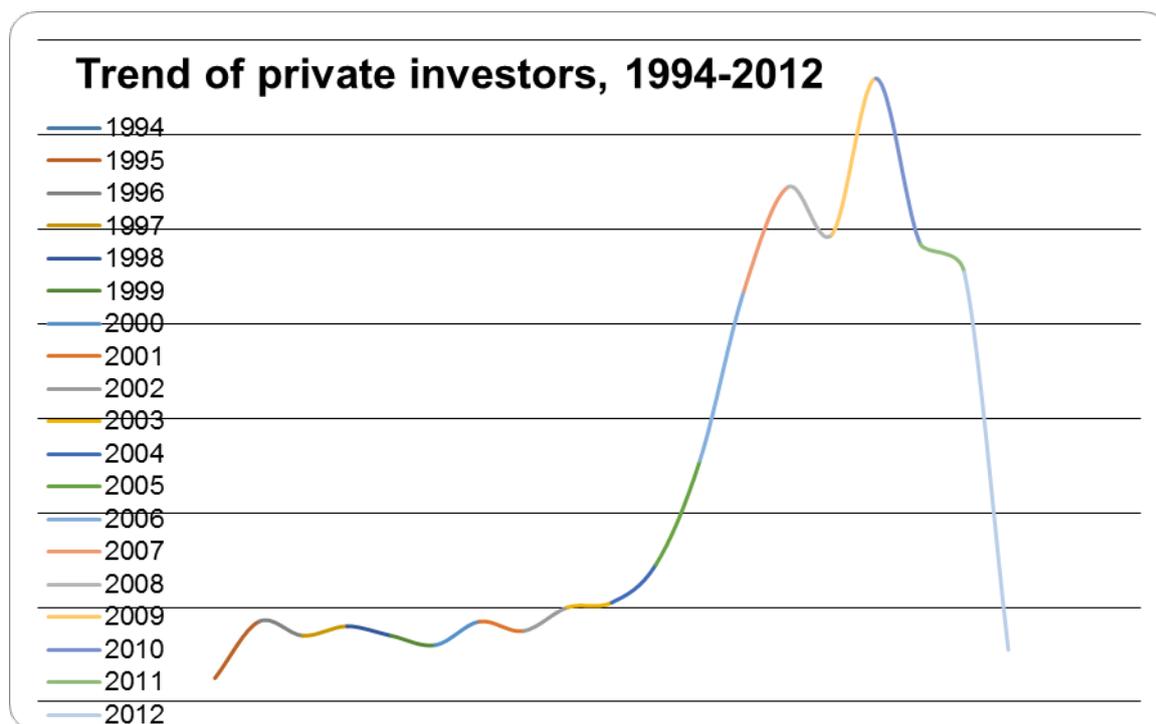
Table 3.4: Number of establishments in the private manufacturing sector

Industrial Group	Number of establishments				
	2008/09	2009/10	2010/11	Total	Percent
Food products and beverage	451	529	541	1867	30
Textiles	16	40	32	117	
Wearing apparel	19	41	51	117	
Tanning and Dressing of leather, luggage, and handbags	79	86	110	234	
Wood and products of wood and cork	39	37	39	139	
Paper and paper products, printing and services	127	115	113	457	
Chemicals and chemical products	64	75	87	278	
Rubber and plastic products	78	82	130	350	
Other non-metallic mineral	464	585	462	1773	29
Basic Iron and steel	13	16	37	76	
Fabricated metal products	97	116	137	402	
Machinery and equipment	4	5	15	29	
Assembly of motor vehicles, trailers and semi-trailers	11	9	9	66	
Furniture	284	349	271	1121	18
Total	1766	2075	2034	6214	

(Source: www.csa.gov.et.)

Figure 3.1 below depicts the trend of private investment in the State of Tigray between 1994 and 2012. Although there is a fluctuation in the number of investors from year to year, an overall increment in private investment in the state is evident.

Figure 3.1: Trend of private investment in the State of Tigray

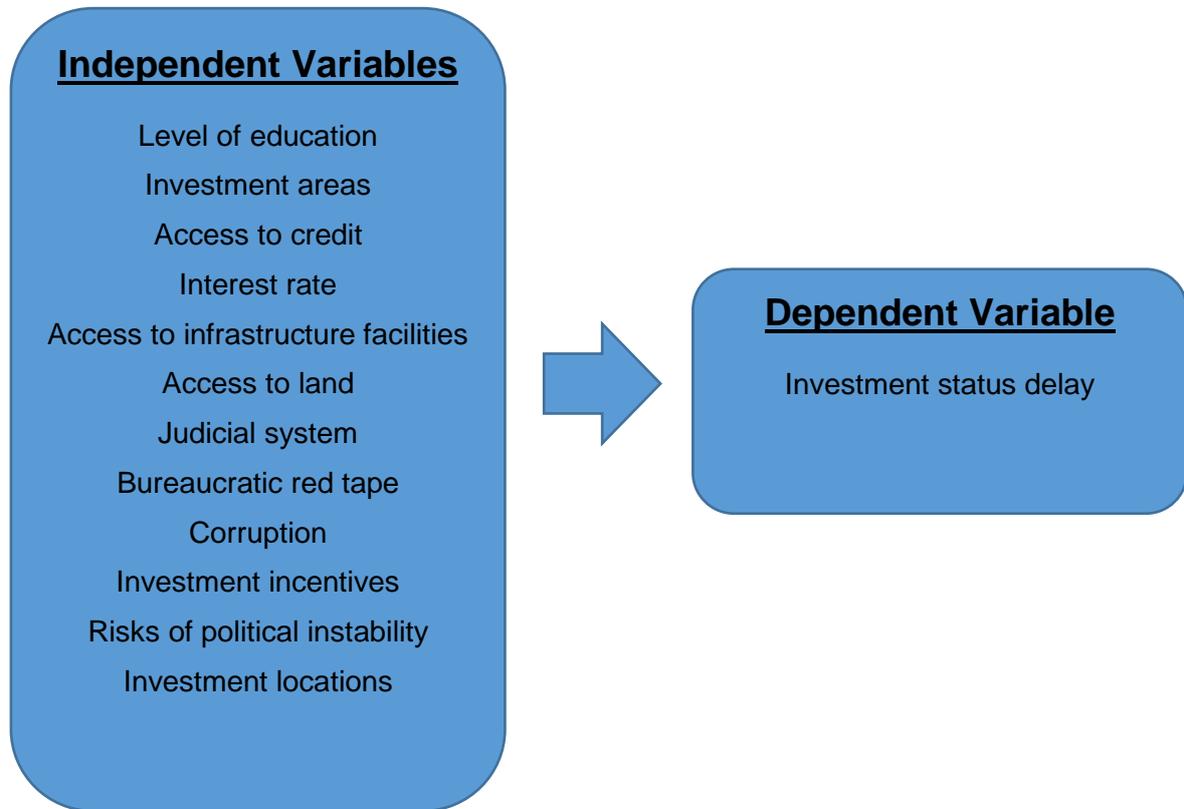


(Source: Tigray Investment Office, 2012)

3.3. Conceptual framework

The current study was conducted based on a conceptual framework drawn from the empirical literature reviewed and explained above. The main determinant variables at macroeconomic and microeconomic levels in various research literatures were identified but the study only makes use of independent variables at a microeconomic (firm) level. This research also focused on studying the major determinants that are critical to ISD in the State of Tigray, Ethiopia. From the literature review above, the following schematic representation of the conceptual framework/model for this study was developed. It depicts the relationship of variables within the investment status and shows the 12 independent variables and 1 dependent variable selected.

Figure 3.2: Conceptual framework



(Source: Adapted from Pun, 2005)

CHAPTER FOUR: DEFINITION, MEASUREMENT AND HYPOTHESIS OF VARIABLES

In this chapter the operational definitions and measurements of the variables, research hypothesis, and ethics embraced are described, and the dissemination of the study is discussed.

4.1. Operational definition and measurement of variables

The study hypothesises that multiple variables affect private investors' operations in the study area. The major variables that were expected to have an influence on the progress of the private investors in the manufacturing sector in the study area are presented and explained below, together with the direction of their effect and measurement following the definition of dependent variables.

Dependent variable: Investment status delay (isd) is the dependent variable and it refers to the three types of investment status operations. Private investors who started pre-implementation are categorised as '1,' private investors who have started implementation are categorised as '2,' and those who have started operation/production are categorised as '3.'

Explanatory variables: The independent variables are selected based on existing theories and empirical evidence from researchers such as Bayai and Nyangara (2013), Basar and Zyck (2012), Kehinde et al., (2012), Soneta et al., (2012), Munir et al., (2010), Asiedu and Freeman (2009), Baye et al. (2005) and Record and Davies (2007). They are contextualised to the study.

Level of education (levedu): This variable shows the level of formal education attended by the private investors in the sample group and its delay impact on investment status. In this study, primary school complete is labeled '1,' secondary school complete '2,' college diploma '3,' first-degree graduate '4' and Master's degree graduate and above '5.'

Investment areas (invare): This refers to a type of product line within the manufacturing sector which an investor already invests in, for example, food, beverages, textiles and textile products, leather and leather products, wood products, paper and paper products, printing, chemical and chemical products, rubber and plastics products, other non-metallic mineral products, basic metals, fabricated metal products, electrical products, and other industries. The variable therefore investigates which investment area is more delayed in the manufacturing sector.

Access to credit (accres): This refers to the possibility that individuals or enterprises can access financial services like credit, deposit and other related services. Access to loans by financial institutions (availability of bank credit to private investors) significantly affects the operation of private investors in all statuses. This study investigates whether the investor has delayed in their investment status due to the actual access to credit facilities. The investors consider collateral requirements, bureaucracy, interest rate, officials' corruption, credit amount, etc. as being important factors. Thus, in this study, if access to loan delayed impact it is labeled '1' and if not, '0.'

Interest rate (intrat): This is the user cost of capital, and it helps to analyse the feelings of the investors towards the interest rate of bank loan. The investors express their feeling on the interest rate level impact on the investment status by comparing the cost and benefits of the credit. In this study, it is labeled '1' if interest rates had a negative impact on investment status progress and '0' if not.

Access to infrastructure facility (accinf): This refers to whether the investor experienced a delay because of the lack of access to infrastructure facilities or not. (Reference is made to quality and efficiency of infrastructure services delivered by the public agencies.) If there are adequate infrastructure facilities like road, water, electric, telephone, etc., more investors would be attracted to invest and so this positively contributes to promoting investment status. In this study, good access to infrastructure facilities that assist investment status progress is labeled as '1,' and bad access is labelled '0.'

Access to land (acclan): Land access is broadly defined as the processes by which people individually or collectively gain rights and opportunities to occupy and utilise land. The use is primarily for productive purposes but also for other economic and social purposes and can be of a temporary or permanent nature (Quan, 2006). The private investors were asked whether they experienced a delay due to access to land for their investment activities or not by considering the land tenure system, bureaucratic procedures, lease prices and the size of land. Thus, in this study, if private investors encounter any problems in securing land for investment that delayed their investment status, it is labeled '1,' and if not, '0'.

Judiciary system (judsys): This refers to the respondents' perception towards the functions of the legal⁵ and judiciary system in the state. It was measured by the time required to accomplish any task related to a government institution as well as the following factors: quality, the degree of honesty, degree of freedom or independence in making decisions (especially the judiciary's ability to enforce rulings), motivation, and corruption among employees. Thus, in this study, if the judicial system is efficient that had no impact on ISD, it is labeled '1' and '0' if not.

Bureaucratic red tape (bureta): Bureaucratic red tape refers to the existence of complicated rules and procedures which can cause long delays. This variable refers to the respondents' perception towards bureaucratic procedures of government organisations. It was measured by the time spent in getting services from government organisations. Here, the investors considered services required to get investment licenses, bank loans, land access, utilities and vehicle registrations. Thus, in this study, if there are delays in getting public services due to the bureaucratic red tape, it is labeled '1' and '0' if not.

Corruption (corrup): The encyclopedic and working definition of corruption used by the World Bank and Transparency International is that it is the abuse of public power for private benefit or profit (Tanzi, 1998). The act often consists of paying bribes to

⁵ A legal system is defined as a synergy of legal rules, legal principles, legal standards, legal polices, legal structures, legal tradition, legal actors, legal extension and legal penetration operating in a given geographical area (Muradu, 2009).

public officials by private beneficiaries as compensation for the abuse (Sarkar & Hasan, 2001). Another widely used definition is that corruption is a transaction between the private and public sector actors through which collective goods are illegitimately converted into private ones through payoffs (Heidenheimer, 1989:6). In line with this, the private investors were asked what their perception of corruption in the State of Tigray was. They were asked to consider different services areas such as: securing a bank loan, investment permits and licenses, municipality works, and infrastructure facilities related to their investment status. Thus, in this study, if private investors are affected their investment status by corruption to get services in the state, it is labeled '1' and '0' if not.

Investment incentives (invinc): Barbour (2005) defines an incentive as being 'any measurable advantage given to specific enterprises or categories of enterprises by (or at the direction of) government.' Incentives can be fiscal or non-fiscal, direct or indirect. Fiscal incentives include direct 'cash' grants or tax breaks; non-fiscal incentives include fast-track approval processes or exemptions from certain regulations.

Putting in place various incentives would promote investment status by attracting more investors to invest in the manufacturing sector. Incentives given to private investors in the form of duty-free import of machinery and equipment, income tax holidays, access to the bank loans and low lease price of land, and market incentives were measured. Thus, in this study, this item was valued as '1' if investment incentives have contributed to proceeding the investors' status and '0' if not.

Political instability (polins): Political instability is defined as the presence of conflict between objectives of investors and governments. Campos and Nugent (cited in Busari & Amaghionyeodiwe, 2007) summarised the different measures of socio-political instability into two categories, namely: those that stress regular and irregular government transfers, and those that are much harsher, such as revolutions, civil wars and political homicides. Political instability measures competitiveness and the regulation of political participation, regulation, competitiveness, openness of recruitment, and the legal and operational independence of the chief executive

(Busari & Amaghionyeodiwe, 2007). These investors in this study considered the border conflict, security system, unnecessary interference, and trade restrictions in the state as factors impacting their investment status. Thus, in this study, if the political instability affected the progress of investment status in the state, it was valued as '1' and '0' if not.

Investment location (invloc): This refers to the place where the firm of a sample investor is found. According to Feder (cited in Baye et al., 2005), it is appropriate to include location specific dummy variables when observations from different socio-economic or ecological/environmental areas are included in the sample. These could capture other area-specific factors affecting investment decisions such as access to the market, access to infrastructure, distance to raw materials, and and costs incurred specifically due to the location of the enterprise. Thus, in this study, if problems of this nature exist that affect the firm's investment status because of their investment location, it was valued as '1' and '0' if not.

4.2. Research hypotheses

The hypotheses were identified during an extensive literature review. The factors that are examined in this study are those which were found to be significant in most of the previous studies. To study the determinants of PIMS on a microeconomic level, the researcher hypothesises a relationship between the investment status delay (isd) and the following identified independent variables. Therefore, independent variables that can have an influence on private investment status progress are explained below.

The independent variables: The following are firm-level characteristics and investment climate (economic factor) indicators of the micro-level determinants of private investment operations in the manufacturing sector in each investment status. They include the level of education, investment area, access to credit, interest rate, access to infrastructure facility, access to land, the judiciary system, bureaucratic red tape, corruption, investment incentives, political instability, and location of investment, and these are outlined together with their details.

4.2.1. Hypothesis of independent variables

Hypothesis 1: Level of education vs. isd

It is undeniable that education is an important contributing factor to making wise investment decisions as it helps to minimise investment risk. Before embarking on an investment activity, investors should assess all the pros and cons of their decision. The study by Egesa (2010) indicated that skilled managers increase firm survival. Moreover, a study on private investment determinants at the micro level by Baye et al. (2005) has also shown that the level of education significantly and positively influences the probability of an individual to invest. Thus, the following hypothesis is made:

H₀0: The more the private investor is educated, the less the probability of investment status delay.

H₀1: The more the private investor is educated, the more the probability of investment status delay.

Hypothesis 2: Investment type vs. isd

Many studies have concluded that the type of investment makes a difference to private investment delay in the manufacturing sector (Baye et al., 2005). Accordingly, the following hypothesis is formulated.

H₀0: All private investment areas of the manufacturing sectors are, more likely, equally subject to investment status delay.

H₀1: All private investment areas of the manufacturing sectors are, more likely, not equally subject to investment status delay.

Hypothesis 3: Access to credit vs. isd

According to Jongwanich and Kohpaiboon (2006), the availability of financing is a key factor influencing investment behavior independently of the cost of capital. Economic theory has also shown that access to credit plays a significant role in enhancing or promoting investment. Empirical studies have similarly shown that debt

servicing has a significant positive relationship with private investment (Bayai & Nyangara, 2013).

However, access to finance is the leading constraint for entry, operation, and expansion of private investment in Ethiopia (Mitiku, 1996). Egesa (2010) also found out that the lack of credit adversely affects the survival of firms. Therefore, the following hypothesis is made:

H₀0: There will be no negative influence of access to a bank loan on the investment status delay of private investors in the manufacturing sector.

H₀1: Access to a bank loan will have a negative effect on investment status delay of private investors in the manufacturing sector.

Hypothesis 4: Interest rate vs. isd

There are varying views on the effect of the real interest rate on the level of private investment. Private investment could be positively related to interest rates in developing countries (Greene & Villanueva, 1990). On the other hand, a high-interest rate level raises the real cost of capital and therefore dampens the private investment level. Similarly, the economic theory on real interest rate states that it has a negative impact on investment (Bader & Ibrahim, 2010, Bayai & Nyangara, 2013, Kehinde et al., 2012). Based on these ideas, the following hypothesis is drawn.

H₀0: The interest rate on bank loans has a negative impact on the investment status delay of private investors in the manufacturing sector.

H₀1: The interest rate on bank loans has a positive impact on the investment status delay of private investors in the manufacturing sector.

Hypothesis 5: Access to infrastructure facility vs. isd

This hypothesis investigates whether the investor has access to infrastructure facilities or not. If there are adequate infrastructure facilities like water, electricity and telephone lines, more investors would be attracted to invest and so it contributes to promoting investment. According to the study by Soneta et al. (2012), investment in public infrastructure has an insignificant effect on the manufacturing sector in Pakistan. In addition to this, the lack of infrastructure (particularly power) is the

leading constraints for entry, operation and expansion of private investment in Ethiopia (Mitiku, 1996). However, the study by Munir et al., 2010 showed that private investment is positively affected by public infrastructure in the long run in a developing country. The following is therefore the hypothesis drawn:

H₀0: Access to infrastructure facilities has a negative effect on the investment status delay of private investors in the manufacturing sector.

H₀1: Access to infrastructure facilities has a positive effect on the investment status delay of private investors in the manufacturing sector.

Hypothesis 6: Access to land vs. isd

One of the major factors of production according to economic theory and different empirical pieces of evidence is access to land. Mitiku (1996) and Deneke (2001) found that access to and the cost of land is the specific leading entry constraint to private investment in Ethiopia. And, the results at a micro level showed that the probability of individuals to invest is significantly and positively influenced by access to land (Baye et al., 2005). Based on the above evidence, the following hypothesis is made:

H₀0: Access to land has a negative effect on investment status delay of private investors in the manufacturing sector.

H₀1: Access to land has a positive effect investment status delay of private investors in the manufacturing sector.

Hypothesis 7: Judiciary system vs. isd

According to the study by Baye et al. (2005), the legal and judiciary system are not significantly related to the probability of individuals to invest in private investment; Record and Davies (2007) however reported that it relates negatively to investment. Hence, the following hypothesis is formulated:

H₀0: Judicial system affects negatively the investment status delay of private investor in the manufacturing sector.

H₀1: Judicial system affects positively the investment status delay of private investor in the manufacturing sector.

Hypothesis 8: Bureaucratic red tape vs. isd

Bureaucratic procedures are the leading constraints for entry, operation and expansion of private investment in Ethiopia (Mitiku, 1996). Thus, the next hypothesis is formulated as follows:

H₀0: Public services delay due to bureaucratic red tape has a negative impact on the investment status delay of private investors in the manufacturing sector.

H₀1: Public services delay due to bureaucratic red tape has a positive impact on the investment status delay of private investors in the manufacturing sector.

Hypothesis 9: Corruption vs. isd

According to Asiedu and Freeman (2009), corruption may deter the entry of firms into investment and the overall effect of corruption on investment may be negative. These researchers add that the effect of corruption on investments varies significantly across regions: corruption has a significant negative effect on investment growth for firms in Transition countries but has no significant impact on firms in Latin America and Sub-Saharan Africa. Moreover, Mulunga (cited in Baye et al., 2005) found that corruption has a negative impact on investment. Consequently, the following hypothesis is drawn:

H₀0: Investment status delay is negatively affected by the level of private investors' perception of corruption in the manufacturing sector.

H₀1: Investment status delay is positively affected by the level of private investors' perception of corruption in the manufacturing sector.

Hypothesis 10: Investment incentives vs. isd

Incentives are used as tools to boost investment and growth (Barbour, 2005). That is, availing incentives for investors would promote investment by attracting more investors. Similarly, the study at the micro level by Baye et al. (2005) showed that the probabilities of individuals to invest are significantly and positively influenced by investment incentives. However, The International Monetary Fund (IMF) (Chua, 1995) takes the firm line that tax incentives do not stimulate investment significantly

and that, when they do, the cost often outweighs the benefits (cited in Barbour, 2005). From the above evidence, the following hypothesis is drawn:

H₀0: Investment incentives to private investors positively influences investment status delay in the manufacturing sector.

H₀1: Investment incentives to private investors negatively influences investment status delay in the manufacturing sector.

Hypothesis 11: Political instability vs. isd

A study on private investment and political instability (Busari & Amaghionyeodiwe, 2007) shows that the political environment does not significantly affect the rate of change of domestic expenditure if private investment grows faster. Moreover, political instability does not seem to have any significant, direct impact on private investment. According to Mitiku (1996), political/policy uncertainty are not significant determinates of private investment. However, political risk or political uncertainty relates negatively to private investment (Bayai & Nyangara, 2013). From this point of view, the following hypothesis is drawn:

H₀0: There will be no negative impact of political instability risks on investment status delay of private investors in the manufacturing sector.

H₀1: There will be a negative impact of political instability risks on investment status delay of private investors in the manufacturing sector.

Hypothesis 12: Investment location vs. isd

According to the study by Pun et al. (cited in Pun 2005) and Baye et al. (2005), investment locations are not significantly related to the probability of individuals to engage in private investment. On the other hand, the effect of sector location is also found to be significant for firms in agriculture, manufacturing and service provision (Abuka et al., 2006). In the context of this study, the last hypothesis was derived:

H₀0: The investment location of private investors relates positively to investment status delay in the manufacturing sector.

H₀1: The investment location of private investors relates negatively to investment status delay in the manufacturing sector.

4.3. Ethics and dissemination

Research ethics refers to the application of fundamental ethical principles (honesty, objectivity, integrity, carefulness, openness, confidentiality, etc.) to a variety of topics that are part of scientific research. These include various aspects of academic scandal including scientific misconduct (such as fraud, fabrication of data and plagiarism), the regulation of research, etc. As per the UNISA policy on research ethics, the researcher obtained an Ethical Certificate before conducting this study.

When the researcher distributed his questionnaire, its objective was clearly explained and the respondents understood that the information would only be used for academic purpose and that the outcome of the research would benefit society. All information was kept confidential. In addition to the primary data, all secondary data was safely kept. The final result of the research will be disseminated to all stakeholders, including investor associations, university communities, investment offices and other users of the research output. On completion the researcher will publish a peer-review article in a reputable journal.

CHAPTER FIVE: RESEARCH DESIGN AND ANALYSIS

This chapter provides a detailed discussion of the research methodologies employed in this study. It starts with a description of the study area and is followed by a presentation of study design, the sampling procedures and data collection methods used. The latter includes sampling techniques, sample size, sources and methods of data collection. Finally, this chapter presents the method of data analyses – the descriptive and econometric methods.

5.1. Description of the study area

The research data was collected in the State of Tigray. This state was chosen as the study area for the analysis of microeconomic determinants of PIMS because it was noted that there was an increase of private investment in the area. This study identifies factors influencing private investors in the sector and also changes and developments that will support the balanced development of private investors in the regional states of Ethiopia. It was believed that a PhD level study should be rigorous and treat the topic in depth, thereby avoiding broad and unmanageable research designs. Moreover, the researcher believes that the results of the research can be applicable to the situations in other states of Ethiopia, and lessons drawn could promote countrywide improvement. The topography, location and demographic characteristics of the state are now presented.

The State of Tigray is located in the northernmost part of the nine states of Ethiopia. It is bordered by the State of Afar in the East, Eritrea in the North, the State of Amhara in the South and Sudan in the West. The State of Tigray has an approximate area of 53,386 square-kilometers (about 7% of Ethiopia) and an estimated population of 5,062,000 (www.citypopulation.de).

According to the new administrative setup, the State of Tigray is divided into seven zones. These are western, northwestern, central, eastern, northeastern, southern, and Mekelle (the state capital). The topography of the state is characterised by

mountain plateau and the mountains vary in altitude from 2000-3000 meters above sea level. The western plateau comprises mostly of lowland areas with depressions in the boundaries of the State of Afar. One of the notable physical features of the State of Tigray is hills and valleys. More than 80% of the population live in the rural areas and are engaged in agriculture. Kiremt (summer) is the main rainy season. The peak agricultural season is from June to August while the slack period is from December to April (Gebrehiwot, 2009).

Figure 5.1: State of Tigray, administrative map



(Source: <http://reliefweb.int/map/ethiopia/ethiopia-administrative-map-27-mar-2013>)

The State of Tigray is one of the rapidly growing states (regions) in the country. It attracts investors from different sectors and benefits from this progress. Between 1992 and August 2012, the State of Tigray enjoyed 10% of the total domestic PIMS in Ethiopia (EIA, 2012). The total number of private investors in the State of Tigray in the manufacturing sector was 857 in August 2012.

According to the zonal distribution of projects that were granted investment certificates in the state, the share in the Mekelle zone was high in number. Of the total projects approved in PIMS, 578 projects (67%) were in Mekelle zone (TIO, 2012). The northeastern zone of the state surrounds Mekelle zone and very few

investors were located here, opting rather to invest in Mekelle. Consequently the northeastern zone is not included in the sample area.

From July 1992 to August 2012, among the total approved projects in domestic PIMS, 212 (25%) of the projects started operating in the state. There were 237 (28%) and 408 projects (47%) respectively in the implementation and pre-implementation status (TIO, 2012). In other words, out of the 857 total private investments in the manufacturing sector, most of the investments were found in the pre-implementation stage. This indicates that the majority of investment projects approved could not be implemented on time.

Table 5.1: Number and percentage of status and zones (1992 to August 2012)

Zones	Pre-implementation		Implementation		Operation		Total	
	No.	%	No.	%	No.	%	No.	%
Mekelle	265	0.65	176	0.74	137	0.65	578	0.67
Southern	15	0.04	8	0.03	5	0.02	28	0.03
Eastern	41	0.10	21	0.09	27	0.13	89	0.10
Central	22	0.05	12	0.05	24	0.11	58	0.07
North western	36	0.09	11	0.05	12	0.06	59	0.07
Western	29	0.07	9	0.04	7	0.03	45	0.05
Total	408	0.48	237	0.28	212	0.25	857	1.00

(Source: TIO, 2012)

5.2. Study design

To achieve the objectives of the study, a positivist paradigm study design was used. Positivist ontology dictates that reality is designed and its epistemology is based on objective understanding. In this study, what determines the success or failure of private investor operations is the positivist ontology (objective) studied based on objective information, independent of the researcher who utilises both quantitative and qualitative data. The epistemology is explanatory, as the study aims to explain

reality based on positivist ontology. Broadly speaking, a research approach can be qualitative, quantitative, or mixed. This study design is explanatory and the methodology employed is a mixed approach, one clearly based on a positivist paradigm. Mixed methods of research provide better (stronger) inferences, help to capitalise on the strengths of both quantitative and qualitative approaches and remove any biases that exist in any single research method (Creswell, 2003). The overriding research approach is however a quantitative one. As a result, positivist methods were applied to both the data collection and analysis processes.

5.3. Sampling procedures and data collection

5.3.1. Sampling techniques and sample size

In this study, an individual private investor in the manufacturing sector was responsible for making decisions on investment activities. Thus, an individual investor was the basic sample unit or unit of analysis. Because of heterogeneity among investors, a stratified sampling technique was applied in order to obtain a representative sample. Considering the types of status of the PIMS and their investment zones, the stratified random sampling (i.e. first stratification and then simple random sampling) were used to select the items from each stratum to constitute a sample. All investors in the PIMS were grouped into strata defined by their status type and investment zone. Finally, samples were proportionately selected from each status of investment and zones using simple random sampling.

The total number of private investors who received investment permits from the State of Tigray were stratified into three groups using their investment status and zones. The type of population (or universe) of this study is a finite universe and the main stratification units are investment status and zone. The total number of private investors (i.e. the sampling frame or source list) was 857. They were classified or stratified as follows a total of 212 investors were in the operation status, 237 in the implementation status and 408 in the pre-implementation status. According to Kish (cited in Mahmoud, 1994), taking a confidence level of 95% and an error limit of 0.05, the actual sample size was obtained using the following equation:

$$n = \frac{n'}{1+n'/N}$$

Where:

$$n' = \frac{S^2}{V^2}$$

n' = Sample size from an infinite population

n = Sample size from a finite population

N = Total population

S^2 = The variance of the population elements (a maximum value at $P = 0.5$,
 $S^2 = P(1-P) = 0.5 * 0.5 = 0.25$)

P = The proportion of population elements that belong to the defined class

V = Standard error of sampling population, that is:

$V = (0.05/1.96) = 0.0255$ (for a total error of 0.05 and confidence level of 95%, $t = 1.96$)

Therefore, based on the above sample size formula:

$$n' = \frac{S^2}{V^2} = \frac{0.25}{(0.0255)^2} = \frac{0.25}{0.00065} = 384.6$$

$$n = \frac{n'}{1+n'/N} = \frac{384.6}{1 + (384.6/857)} = 265$$

From the above result, the sample size is around 31% of the total population.

The number of items selected from each stratum or the allocation of the sample size of each stratum (i.e. status and zones) was based on the method of proportional allocation under which the sizes of the samples from the different strata was kept proportional to the sizes of the strata. That is, if P_i represents the proportion of population included in the stratum, and n represents the total sample size, the number of elements selected from stratum is $n * P_i$ (Kothari, 2004).

Therefore, it is determined that the sample of size n is 265 and was drawn from a population of size $N = 857$, which was divided into strata of three sample sizes of investment status (pre-implementation, implementation and operation) and sample size of zones. The three strata sizes are: pre-implementation = 408, implementation = 237 and operation = 212. Adopting proportional allocation, the sample sizes for the different strata were calculated as follows:

For strata with pre-implementation = 408, then $408/857$. Hence the sample size for pre-implementation = $265 (408/857) = 126$. The same procedure was followed to determine the sample size of the other statuses of private investment.

To determine the allocation of a sample size to zones, the pre-implementation status determined above was used and the same procedure followed using the proportional allocation method below.

Strata in the southern zone = 15, then $15/408$. Hence the sample size for the southern zone = $126 (15/408) = 5$. The same procedure was followed to determine the sample size for private investment in the other zones.

Table 5.2 below presents the results of these calculations and shows the distribution of the sample size relative to all statuses and zones.

Table 5.2: Sample size and number by statuses and zones

Zones	Pre-implementation		Implementation		Operation		Totals	
	No.	Sample size	No.	Sample size	No.	Sample size	No.	Sample size
Mekelle	265	82	176	54	137	42	578	179
Southern	15	5	8	2	5	2	28	9
Eastern	41	13	21	6	27	8	89	28
Central	22	7	12	4	24	7	58	18
North western	36	11	11	3	12	4	59	18
Western	29	9	9	3	7	2	45	14
Total	408	126	237	73	212	66	857	265
Percentage of status	0.48		0.28		0.25		1	
Sample size by status		0.48		0.28		0.25		1
Sample size out of universe		0.31		0.31		0.31		0.31

(Source: TIO, 2012)

In accordance to Burgess (cited in Mahmoud, 1994), the elements of this sample (private investors) were selected using tables of random numbers to assure randomness, independence and representativeness. When a private investor selected chose not to participate for whatever reason, a substitute private investor was selected using the same tables. Reasons for non-participation could be because of private investors' unwillingness to co-operate, a change their field of business, the fact that they had gone out of business, or because they changed their address and could not be contacted.

5.3.2. Sources and methods of data collection

In this study, both quantitative and qualitative approaches were used to collect primary and secondary data for analysis. The survey was conducted in the State of

Tigray and secondary data was gathered from different sources like EIA, TIO, financial institutions (banks) and offices of the municipality.

i. Primary data source and collection

The primary data was collected between May and October 2013 using a semi-structured questionnaire. Respondents were from private manufacturing firms operating in the State of Tigray and the questions were composed to examine the microeconomic determinants of PIMS. Six enumerators and the researcher administered the questionnaire. The enumerators were trained on the content of the questionnaire and interview techniques that would be appropriate. The questionnaires were pre-tested for reliability and validity through a pilot test because the quality of the questionnaire partly determines the quality of the research. On the basis of the results obtained, necessary modifications were made. Rosters, which consisted of lists of investors, were obtained from the investment office of the State of Tigray.

265 copies of the structured questionnaire were administered to the sample of private investors in the State of Tigray. The questionnaire was designed in such a way that it enabled the collection of data on personal firm-level characteristics and investment climate indicators. Major variables expected to have a significant relationship with private investment delay as perceived by the private investors in the manufacturing sector (level of education, type of product line (investment areas), access to credit, interest rate, bureaucratic red tape, judicial system, access to land, access to infrastructure facility, corruption, investment incentives, political instability risks and investment location), were incorporated in the questionnaire.

In addition, FGDs were conducted with selected private investors in the manufacturing sector in all three statuses and organisation types. They are considered to be experts in the area. The investors were selected according to their level of experience in investment activities and from different statuses and firms' product line. This helped to extract the major factors affecting their decision making and ability to participate in private investments. Based on this, the number of

participants in the FGD was seven: one from each of the three investment statuses and the others from different officers or because they were experts in the area.

The interview method was used to collect data from financial institutions and Tigray investment and municipality offices. The interviews aimed to elicit information on the implementation of investment activities and other related investment policies and decisions in the manufacturing sector and also to strengthen the data from the primary source.

ii. Secondary data source

Journals, books, Ethiopian investment proclamations and policies from different offices was obtained in order to strengthen the analysis. Institutions included the Ministry of Finance and Economic Development (MoFED), National Bank of Ethiopia (NBE), Central Statistical Agency (CSA), Ethiopian Investment Agency, Addis Ababa Investment Office, the State of TIO, and other secondary data.

5.4. Method of data analysis

5.4.1. Descriptive analysis

To establish a clear picture of the characteristics of the sample units, the study used descriptive statistics for analysis. Using descriptive statistics enables one to compare and contrast different categories of the sample units with respect to the desired characteristics. This analysis helps to identify the variables that influence and delay investors' status. In other words, the analysis shows why they are delayed their status progress. The Statistical Package for the Social Science (SPSS) was used to analyse the quantitative data. Using SPSS software, descriptive statistics (including frequency of occurrence, percentages and chi-square test results) were used for all independent variables to reveal their relationship with the dependent variable. The cross-tabulation table produced by SPSS contains the number of cases that fall into each combination of categories. In addition to this, this analysis is based on the two assumptions of chi-square tests. These are that:

- i. It is imperative that each private investor contributes to only one cell of the contingency table, in other words, a chi-square test of a repeated measure design cannot be used. For example, if an investor was in the pre-implementation status, they could not also be included in the implementation status sample as the Pearson's chi-square test would not be able to be generated.
- ii. The expected frequencies should be greater than 5. Although it is acceptable in larger contingency tables to have up to 20% of expected frequencies below 5, the result is a loss of statistical power (meaning that the test could fail to detect a genuine effect).

The Pearson's chi-square test examines whether there is an association between two categorical variables (i.e. the type of status group and whether the private investors delayed or not due to the independent variables). As part of the crosstabs procedure, SPSS produces a table that includes chi-square statistic and its significant value. The Pearson chi-square statistic tests show whether the two variables are independent. If the significance value is small enough (conventionally Sig. must be less than .05) then the study rejects the hypothesis that the variables are independent and gain confidence in the hypothesis that they are in some way related. Here, if the p-value is .05, this means that the statistic is considered to be significant (meaning that the researcher can be 95% confident that the relationship between the two variables is not due to chance).

Finally, content analysis was used to analyse the qualitative data to triangulate and support the quantitative results. Tables and figures are presented to provide a descriptive picture of the different statuses of PIMS in the study area.

5.4.2. Econometric analysis

In addition to descriptive analysis, the study used one econometric model – the duration model – to test the relationships between variables and to draw conclusions. The duration model is a more recent statistical tool and it has gained a lot of popularity recently. The technical definition used in most of the studies for the hazard rate is the probability of exit faced by firms that survive up to a particular point in time (Egesa, 2010). In this study, duration analysis involves several related

techniques that focus on times until the event of interest occurs. Although the event could be good or bad, by convention, the study refers to the event as a “failure.” The time until the failure is “survival time.” Survival analysis is important in this research, as it can be applied equally well to other fields from engineering to social science. In this study for example, time was modeled until the investor began operation, or there was a single exit from pre-implementation to another exit period.

A Cox proportional hazard model is applied on the cross-section data collected from 259 private investors in the State of Tigray to identify factors that determine the exit of a firm from pre-implementation status to implementation and then to operation status at the optimal time. This regression employs proportional hazard models. The hazard rate for failure at time t is defined as:

$$H(t) = \frac{\text{Pr obablity of failing between times } t \text{ and } t + \Delta t}{(\Delta t) (\text{probablity of failling after time } t)}$$

This hazard is modeled as a function of the baseline hazard $H_0(t)$ at time t and as the effect of one or more explanatory or X variables. Baseline hazard means the hazard for an observation while all X variables equal to zero.

$$H(t) = H_0(t) + \exp (\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots + \beta_k X_k)$$

Or equivalently

$$\ln[H(t)] = \ln[H_0(t)] + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots + \beta_k X_k$$

$H(t)$ is a survival time data that contains, at a minimum, one variable measuring how much time elapsed before the certain event occurred to each observation. The literature often terms this event of interest a “failure” regardless of its substantive or functional meaning. When a failure has not occurred to an observation by the time that data collection ends, that observation is said to be “censored.” The duration of a firm’s status is time taken (duration of months elapsed) before an investor leaves

one investment phase to enter another, or study ended and it is a time variable. Failure refers to a situation where an investor is shifted from one phase to another (for example, from implementation to operation status) before the end of the survey period. Censored is when the investor remains in one phase for longer than the time limit set by TIO or the study period is ended before the firm leaves the stage it has already started.

To implement the duration model, the period (duration) of all the private investors in the study were counted in months from the survey questionnaire. That is, an investor in the pre-implementation status was counted the periods stayed in months. An investor in the implementation status was counted the periods stayed in the pre-implementation status and implementation status. And, an investor in the operation status was counted the periods stayed in the pre-implementation, implementation and operation status.

The data set is constituted of private investors (firms) at three states: pre-implementation, implementation and operation. During the survey period in 2013 the study had 66 firms in the operation, 73 firms in implementation and 126 firms in the pre-implementation stages. Since, the objective of firms' and the interest of the government is to see progressing upward direction (from pre-implementation to operational stage), at any given point in time, firms are at risk of experiencing some event, where an event essentially represents a change or transition from one status to another status. To estimate the hazard function, for those in the implementation and operational stage, in addition to the conditioning covariates, detail data regarding entry time, and failure time, for each stage was collected. Since detail information was collected (the time they entered into the pre-implementation and time to an event); firms in the operation stage during the survey period, by taking the information the time they entered into the pre-implementation and time event (implementation stage) occurred for each firm, the study managed to increase our sample size in our estimation processes. Then, the private investor is either transferred within the specified period for transition or is not observed experiencing an event; that is, no transition is made from one status to another. The name of the investor, status of the firm/organization, date of investment permit, starting date of implementation status and date of business license (operation status) were collected

to support for the status of the private investors and identify their event during data collection (refer survey questionnaire of the thesis). Based on the above data, an investor's status, when an investor registered as an investor, how many months elapsed in each statuses and when production starts helped to identify the event of an investor. Such information allows to establish the investment operation spell for each firm, and the spell might be either completed or right censored at the time of survey.

Moreover, SPSS for Windows Version 20, factor analysis, was used to examine the constraints of operations of private investors reached in the production phase. The suitability of the data for factor analysis was checked by finding significant ($p < 0.05$) Bartlett's test of sphericity, and having a Kaiser-Meyer-Olkin (KMO) sampling adequacy index of at least 0.6. Confirmatory factor analysis was computed because the variables had already been carefully chosen by a very large number of prior studies. Principal components analysis (PCA) extraction was used to obtain an empirical summary of the data set.

5.5. Summary of research design and analysis

The study was conducted in the State of Tigray. The research method used was a mixed approach. Data was collected from 259 private investors engaged in the manufacturing sector. Both primary and secondary data were used for the study. The primary data includes a questionnaire, FGDs and interviews. Both SPSS and Stata statistical software were used for the data analysis. For the descriptive analysis, chi-square test and factor analyses were used to measure the relationship of the variables and constraints respectively. For the econometric analysis, a duration model was used to establish the influence of the explanatory variables on the dependent variables.

CHAPTER SIX: RESULTS

In this chapter the main findings of the study are presented. The source of information is the data gathered from the respondents operating in the three investment statuses of the private investors in the manufacturing sector in the State of Tigray. Some respondents completed questionnaires and others were interviewed or participated in FGDs. Descriptive and econometric analyses were used to analyse the data. The first section of this chapter discusses the descriptive statistical results of the study and the second discusses the results of the econometric model used. The last section focuses on the operational constraints of private investors found in the production phase. All these show the pattern of relationships between ISD and its determinants. Generally, this chapter identifies the effect of each explanatory variable on the dependent variables.

6.1. Descriptive statistical analysis

6.1.1. Introduction

For the purpose of investigating the determinants of private ISD, a sample of 265 private investors were selected in the State of Tigray and a semi-structured questionnaire was distributed to those randomly selected private investors from the sample frame. However, while checking for completeness of the questionnaire, 259 copies (97.7%) were found complete and 6 (2.3%) were found incomplete. These 6 were excluded from the analysis. As a result, only data collected from 259 subjects was used for analysis purposes. Moreover, FGDs were conducted with 7⁶ randomly selected private investors, bank officials and experts in the area of investment. This section focuses on the descriptive analysis of the data. For the descriptive analysis, frequencies of the descriptive statistics and chi-square test using SPSS were

⁶One from each Investment status (i.e. 3x1), 1 from the regional investment office, 1 from Zonal Investment Office, 1 from the Commercial Bank of Ethiopia and 1 from Mekelle Municipality Office.

employed to identify the variables that affect the ISD of the private investors in the State of Tigray, Ethiopia.

Private investment has three statuses: pre-implementation, implementation and operation. Private investors receive investment permits and investment land in the pre-implementation status. Those who have started practical activities (such as civil engineering works, the construction of factory buildings or installation of purchased machinery and equipment) are considered to be in the implementation status. Those who have started with production are in the operation status (Hussien, 2000). Participants were asked to determine the status of their investment by labeling '1' for pre-implementation status, '2' for implementation status and '3' for operation status.

Table 6.1: Private investor distribution by investment status

Investment status	Freq.	%	Valid %	Cumulative %
Pre-implementation	125	48.3	48.3	48.3
Implementation	72	27.8	27.8	76.1
Operation	62	23.9	23.9	100.0
Total	259	100.0	100.0	

(Source: Self compiled from Survey Questionnaire, 2014)

As depicted in Table 6.1 above, out of the total respondents of private investors in the survey during the data collection period, about 48% of the respondents were found to be in the pre-implementation status, 28% in the implementation status and 24% of respondents were in the operation status.

6.1.2. Categorisation of investment status

a) Categorisation of groups

The standard period/duration for private investors to move from the pre-implementation to operation status is determined by the State of Tigray and Ethiopian Investment Agency. Accordingly, the period allowed to proceed from pre-implementation status to implementation status is six months and the period to

proceed from implementation status to the operation status is thirty months. The investor is required to enter the operation status within 36 months of collecting the investment permit from the investment office (TIO, 2012).

For the purpose of this study, the investment status was divided into 'non-started' and 'started' groups. Private investors who have not yet started any implementation activities are part of the non-started group; those that have commenced implementation and/or are in operation status are called the started group. For this sample set, all three statuses are considered in the analysis of the identified explanatory variables.

Table 6.2: Respondents' investment status delay

Delay status	Investment status groups				Total	
	Non-started		Started		Freq.	%
	Freq.	%	Freq.	%		
Delayed	121	97	65	49	186	72
Not delayed	4	3	69	51	73	28
Total	125	100	134	100	259	100

(Source: Self compiled from Survey Questionnaire, 2014)

According to the information in Table 6.2 above, 97% of the respondents in the pre-implementation status were delayed and had not yet proceeded to the next status (implementation status). Only 3% of the respondents of the group were expected to implement on time. But, in the started group, 49% were delayed from proceeding to the operation status. The remaining 51% were not delayed and could still proceed to the operation status on time. Overall, 72% of the total respondents were delayed from proceeding from one status to the next; the remaining 28% were not delayed.

b) Gender and age of private investors

The study revealed that most of the respondents in the non-started group (93.6%) were males and only 6.4% were females. Likewise, for those in the started group 92.5% were males and only 7.5% were females (see Table 6.3).

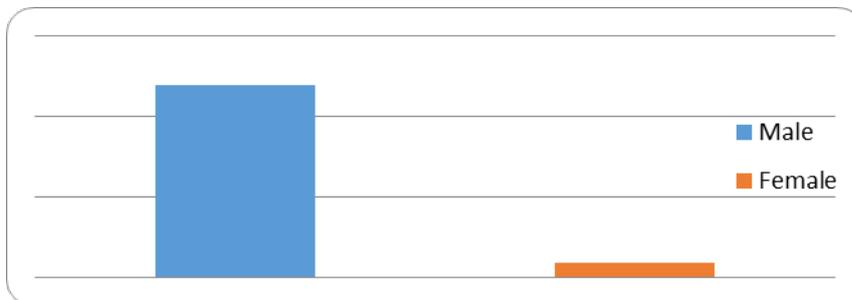
Overall, out of the total private investors surveyed, 241 were males (93.1% of the total) and of these 124 (92.5%) were found in the started and 117(93.6%) in the non-started group. Moreover, 18 private investors were females (6.9% of the total females) and of these, 10 (7.5%) were found in the started group and the remaining 8(6.4%) were in the non-started group.

Table 6.3: Investment status groups and gender of respondents

Attributes	Non-started		Started		Total	
	Freq.	%	Freq.	%	Freq.	%
Male	117	93.6	124	92.5	241	93.1
Female	8	6.4	10	7.5	18	6.9
Total	125	100	134	100	259	100

(Source: Self compiled from Survey Questionnaire, 2014)

Figure 6.1: Gender of all private investors



(Source: Self compiled from Survey Questionnaire, 2014)

Out of the total private investors surveyed, 238 (91.9%) were above 30 years of age and of these 116 (48.7%) were in the non-started group and 122 (51.3%) in the started group.

The study showed that of those in the non-started group, 92.8% were older than 30 and only 7.2% were younger than 31 years of age. Likewise, for those in the started group 91% were older than 30 and 9% were younger than 31 (see Table 6.4).

Table 6.4: Investment status group and age of respondents

Attributes	Non-started		Started		Total	
	Freq.	%	Freq.	%	Freq.	%
Age up to 30	9	7.2	12	9	21	8.1
Age from 31 up to 40	45	36	25	18.7	70	27
Age from 41 up to 50	47	37.6	50	37.3	97	37.5
Age above 50	24	19.2	47	35	71	27.4
Total	125	100	134	100	259	100

(Source: Self compiled from Survey Questionnaire, 2014)

6.1.3. Descriptive Analysis on Determinants of Investment Status

a) *Level of education and investment status group*

The level of education of private investors and its impact on ISD was studied. The educational level of respondents included in both groups varied from primary school to master's degree level. Concerning ISD, out of the total respondent investors whose investments are delayed, 80% were found to have either primary or secondary level of education. The remaining 20% had at least a diploma. The impact of educational level on ISD was found to be similar in the started and non-started groups (see Table 6.5). Furthermore, it was found that the greatest number of private investors delayed had a secondary school education.

Table 6.5: Educational level of respondents by status groups

Attributes	Non-started				Started				Total			
	Delayed		Non-delayed		Delayed		Non-delayed		Delayed		Non-delayed	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Primary	19	16	0	0	25	38	20	29	44	24	20	28
Secondary	78	64	3	75	27	42	26	38	105	56	29	40
Diploma	14	12	0	0	4	6	11	16	18	10	11	15
Degree	7	6	1	25	6	9	8	12	13	7	9	13
Masters	3	2	0	0	3	5	3	5	6	3	3	4
Total	121	100	4	100	65	100	68	100	186	100	72	100

(Source: Self compiled from Survey Questionnaire, 2014)

As stated in the descriptive analysis section above, the Pearson's chi-square test examines whether there is an association between two status groups of variables (i.e. the type of status group and whether the private investor is delayed or not) and shows whether the two variables are independent. This is used to test whether the two status groups (started and non-started) are equally affected by the independent variables or not. This means that if the value of the chi-square statistic is significant then the effect of an independent variable on the two status groups is different and visa versa. Therefore, this test is used for all the explanatory variables in the descriptive analysis made below.

The value of the chi-square statistic is 5.397. This value is slightly significant ($p = .020$), indicating that the type of status group found had a significant effect on whether an investor would be delayed in the manufacturing sector (see Appendix A). The significant result shows that there is a very small association between type of investment status group and whether the investor was delayed or not due to educational level. This means that the proportion of private investors that are delayed to the proportion that are not in the two status groups is significantly small. That is, there is a difference of impact due to the educational level of investors in the non-started group and started group. Or, the impact of the educational level has a significant difference if private investors are found in the non-started or started

groups of investment. This significant finding reflects in Table 6.5 above the fact that when found in the non-started group, 75% did not affect private investors in the secondary level of education and when private investors found in the started group about 67% did not affect the primary and secondary level of education.

b) Investment areas and investment status group

Table 6.6 below (produced by SPSS) presents the ISD of all private investors in the different investment areas within the manufacturing sector. Of the total delayed respondents, 53 private investors were from the food industry type of investment (29% of the total that were delayed). Of these 23 (35%) were in the started group and 30 (25%) were found in the non-started group. The next highly delayed group was in the non-metallic mineral products industry. 28 (15%) private investors were from this industry and of these 7 (11%) were found in the started group and 21 (17%) in the non-started group. The third most delayed investment area is the basic metals industry. Out of the total delayed private investors, 20 (11%) were delayed and of these 7 (11%) were found in the started group and 13 (11%) in the non-started group. The remaining private investors fell into one of the other 12 investment areas represented and they were delayed on average less than 4% each in both status groups.

The highest ISD rate, around 55%, was in those investment areas involving a high number of investors like the food, other non-metallic mineral products, and basic metals industries. During the interviews with different investment office experts, it came to light that the major problems are a lack of credit and delayed implementation of infrastructure facilities in the working place.

Table 6.6: Investment areas of respondents by status group

Attributes	Non-started				Started				Total			
	Delayed		Non-delayed		Delayed		Non-delayed		Delayed		Non-delayed	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Food	30	25	2	50	23	35	26	38	53	29	28	39
Other non-metallic mineral products	21	17	0	0	7	11	12	18	28	15	12	17
Basic metals	13	11	0	0	7	11	11	16	20	11	11	15
Others (12 investment areas)	57	47	2	50	28	43	19	28	85	45	21	29
Total	121	100	4	100	65	100	68	100	186	100	72	100

(Source: Self compiled from Survey Questionnaire, 2014)

According to the SPSS results, the value of the chi-square statistic is 0.576. This value is insignificant ($p = .448$), indicating that the type of status group found had an insignificant effect on whether a private investor would delay (see Appendix A). This insignificant result indicates that there is no association between the type of status group and whether the private investor delayed or not due to a particular investment area. This association means that the pattern of responses (i.e. the proportion of private investors that delayed because of their investment area to those that did not) in the two status groups is insignificant; they are almost the same. This insignificant finding reveals that when found in the non-started group, about 53% of participants invested in food, other nonmetallic mineral products and the basic metals industries, were delayed in their investment. Interestingly it is almost the same for the started group (about 57% had an impact in the same industries).

In addition, most (31%) private investors were more invested in the food industry. The second and third industries in order of their number of investors more heavily engaged were non-metallic mineral products (16%) and the basic metals (12%) industries respectively (see Appendix B). According to the interview with the investment and municipality offices, the major reason for concentrating in specific

areas was because of the interest of the investors. The selection and submission of investment proposals is decided on by the private investors themselves. Investors are kept informed during the vetting process up until the stage that a decision is reached. However, some investors complained that decisions were delayed by the TIO and said that this affected the need to change their investment area.

c) Source of finance of private investors

The financial source for the investors in the manufacturing sector were analysed and the data is presented in Table 6.7 below. 96% of the respondents replied that the main source of finance for their investment was their own contributions. Only 4% made use of other sources of finance. 92% of the started group used their own contributions and all private investors found in the non-started group made use of their own contributions.

In addition to their own contributions, around half of the respondents replied that other sources of finance for their investment were loans from formal financial institutions (mostly banks). However, almost all the respondents replied that sources of finance from share contributions and informal financial services contribute a maximum of 3% to their investment (see Table 6.7).

Table 6.7: Source of finance to private investors

Source of finance	Attributes	Types of status group				Total	
		Non-started		Started			
		Freq.	%	Freq.	%	Freq.	%
Own contribution	Yes	125	100	123	92	248	96
	No	0	0	11	8	11	4
Formal financial institutions (Banks)	Yes	61	49	67	50	128	49
	No	64	51	67	50	131	51
Share contributions	Yes	0	0	7	5	7	3
	No	125	100	127	95	252	97
Informal financial inst.	Yes	0	0	1	1	1	0.4
	No	125	100	133	99	258	99.6

(Source: Self compiled from Survey Questionnaire, 2014)

The information in Table 6.8 below shows that out of the respondents who used other sources of finance in addition to formal financial institutions, about three-fourths of the respondents said that sources of finance other than bank loans were not difficult to obtain. However, one-fourth of the respondents replied that sources of finance for their investment (own contributions, excluding bank loans) were difficult to obtain. The level of difficulty of the source of finance (other than formal financial institutions) was also almost equal for both status groups.

Table 6.8: Difficulty of non-formal financial sources

Level of difficulty	Types of status group				Total	
	Non-started		Started			
	Freq.	%	Freq.	%	Freq.	%
Very easy	20	16	33	26	53	21
Easy	59	48	50	40	109	44
Medium	13	11	12	10	25	10
Difficult	29	24	19	15	48	19
Very difficult	2	2	12	10	14	6
Total	123	100	126	100	249	100

(Source: Self compiled from Survey Questionnaire, 2014)

The level of difficulties of the source of finance from own contributions for investment was discussed during the FGD with the private investors. Accordingly, the following merits and challenges of own contributions were raised:

- i. Own contribution is easy to get because bank loans have long procedures which must be followed.
- ii. Own contributions were easy to get because it was collected from previous businesses.
- iii. Even though it is easy to save money to investment, the amount of savings required takes a long time to collect.

The major source of finance for private investors is their own contributions and bank credits. Own contributions are problematical as discussed in the FGDs above, but they are easily accessible and available for use.

The discussion now focuses on the number of private investors who applied for a bank loan, and the impact of the loan on ISD and related problems.

Data was gathered concerning whether the private investors requested a loan from a financial institution. Overall, around 66% (170 investors) of the respondents applied

to financial institutions for loans for their investment activities, but the remaining 34% did not (see Table 6.9).

Table 6.9: Request for credit by private investors

Requested credit from financial institutions	Types of status group				Total	
	Non-started		Started			
	Freq.	%	Freq.	%	Freq.	%
Yes	84	67	86	64	170	66
No	41	33	48	36	89	34
Total	125	100	134	100	259	100

(Source: Self compiled from Survey Questionnaire, 2014)

Based on this, reasons for not requesting credit from banks were sought during the FGDs and the following reasons were given:

- i. Some private investors had enough capital for their investment from the beginning.
- ii. Bank loans are not granted before the finalisation of the work in the implementation phase.
- iii. Some private investors did not have enough collateral to get a bank loan, and it was difficult to fulfill all the requirements of bank loan processes.
- iv. The religion of some private investors did not allow for the borrowing of money from a bank and paying of interest on loans.

d) Access to credit and investment status group

The impact of access to credit on private investors in the manufacturing sector is a significant variable. This section also considers factors like collateral, interest rates, bank paperwork, officials' corruption, business plans and inadequacy of credit. Table 6.10 below was generated using SPSS and shows that 90 private investors (76% of the total that delayed) had a constrained investment status due to problems with access to credit and of these 25 private were found in the started group (66%) and 65 in the non-started group (80%). Therefore, two-thirds of the respondents in the started group were delayed and more than three-fourths of the respondents in the non-started group were prevented from proceeding to the implementation status

due to a lack of credit from the financial institutions. Considering all private investors who requested bank credit, only 29 (24%) were not adversely impacted due to access to credit problems, even though they were delayed their investment. Of these respondents, 34% were found in started group and the other 20% were found in the non-started group.

Table 6.10: Access to credit impact on investment status delay

Attributes	Non-started				Started				Total			
	Delayed		Non-delayed		Delayed		Non-delayed		Delayed		Non-delayed	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
<i>Had impact</i>	65	80	3	100	25	66	19	40	90	76	22	44
<i>Didn't have impact</i>	16	20	0	0	13	34	28	60	29	24	28	56
Total	81	100	3	100	38	100	47	100	119	100	50	100

(Source: Self compiled from Survey Questionnaire, 2014)

As part of the crosstabs procedure of SPSS, the value of the chi-square statistic is 15.625. This value is highly significant ($p < .001$) and indicates that the type of investment status group had a significant effect on whether a private investor in the manufacturing sector would delay due to access to credit (see Appendix A).

The highly significant result indicates that an association exists between the type of status group and whether the private investor delayed or not because of access to credit. This association shows that the pattern of responses (i.e. the proportion of private investors that delayed to the proportion that did not) in the two status groups is significantly different. This significant finding reflects the fact that when found in the non-started group, about 80% of the private investors become affected (i.e. delay) and 20% do not, whereas when found in the started group, it is less: about 66% become inclined to delay and 34% do not (see Table 6.10).

The complexity of securing a bank loan for those private investors who requested credit was also studied. Accordingly, around 85% of the respondents replied that bank paperwork/bureaucracy or delays in loan delivery and inadequate credit for the investment were the major problems experienced in securing loans from financial

institutions. Collateral requirements by financial institutions and the corruption of officials were the next most commonly cited difficulties to securing bank loans. By contrast and on average, interest rates and the need for a detailed feasibility study (business plan) from the customer were not obstacles to acquiring bank loans for investment activities (see Table 6.11).

Table 6.11: Constraints of private investors due to bank loan access

Problems	Attributes	Types of status group				Total	
		Non-started		Started			
		Freq.	%	Freq.	%	Freq.	%
Collateral requirement	Yes	50	60	44	51	94	55
	No	34	40	41	49	75	45
Bank paperwork	Yes	77	92	67	78	144	85
	No	7	8	18	22	25	15
Interest rate	Yes	48	57	33	38	81	48
	No	36	43	52	62	88	52
Corruption	Yes	72	86	27	31	99	58
	No	12	14	58	69	70	42
Inadequate credit	Yes	77	92	65	76	142	84
	No	7	8	20	24	27	16
Feasibility study	Yes	29	35	31	36	60	35
	No	55	65	54	64	109	65

(Source: Self compiled from Survey Questionnaire, 2014)

The problems in acquiring bank loans are presented below, ranked according to their severity. According to Table 6.12, the non-started group identified inadequate credit as their chief problem and the started group, bank paperwork. The corruption of bank officials working for financial institutions was the second biggest problem for non-started investors, and interest rates were the second biggest hurdle for the started group.

Table 6.12: Ranking of problems experienced when trying to secure a bank loan

Level of difficulty	Types of status group				Total	
	Non-started		Started			
	Freq.	%	Freq.	%	Freq.	%
Bank paperwork (1)	7	9	28	34	35	21
Inadequate credit (1)	28	34	22	27	50	31
Inadequate credit (2)	26	33	26	36	52	34
Corruption of bank (3)	47	62	11	18	58	43
Interest rate (3)	27	36	15	25	42	31

(Source: Self compiled from Survey Questionnaire, 2014)

In addition to these difficulties in securing a bank loan, private investors identified other challenges in the FGDs; interviews with bank officials noted others still. These are:

- i. The long time it takes to process bank loan applications from private investors and the resulting delay of private investment status.
- ii. According to the investment loan policy, if investors could not cover 30% of the initial cost, the Development Bank of Ethiopia (DBE) could not extend loans on time for the remaining 70% of the investment cost.
- iii. Construction and the installation costs of investment are not always accepted by banks as collateral for bank loan requests.
- iv. Due to a shortage of cash experienced by the financial institutions, banks prioritise within the type of investment as per the policy of the government and minimise the credit requests made by the investors.

e) Interest rate and investment status group

As per the survey results, Table 6.13 below shows that in total, the 26 private investors were affected by the high-interest rate paid to financial institutions (23% of the total that delayed) and of these 8 were found in the started group (22%) and 18 in the non-started group (23%). The analysis also showed that 87 (77%) private investors who requested loans did not cite the interest rate as a factor impacting their

ISD even though their progress was delayed. Out of these investors, 28 (65%) were found in the started group and 59 (77%) in the non-started group.

Table 6.13: The impact of interest rates on investment status delay

Attributes	Non-started				Started				Total			
	Delayed		Non-delayed		Delayed		Non-delayed		Delayed		Non-delayed	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Had impact	18	23	1	33	8	22	16	35	26	23	17	35
Didn't have impact	59	77	2	67	28	78	30	65	87	77	32	65
Total	77	100	3	100	36	100	46	100	113	100	49	100

(Source: Self compiled from Survey Questionnaire, 2014)

In the analysis of the crosstabs procedure of SPSS result, the value of the chi-square statistic is 0.839. This value is insignificant ($p = .360$), indicating that the type of status group found did not have a significant effect on whether an investor would delay due to interest rate levels (see Appendix A). The insignificant result indicates that no relationship exists between the type of status group and whether the private investor delayed or not. A relationship is evident when the pattern of responses in the two status groups is not significantly different. This means that whether the investors are in the non-started or started group, the effect of interest rates has an insignificant impact on ISD. The study did not find any evidence to support the null hypothesis that there is an association between the type of status group and delay in private investment. This finding (see Table 6.13) reveals that of the investors in the non-started group, about 23% are influenced by the interest rate of bank loans and 77% are not. When found in the started group, it is almost similar – about 22% were influenced and 78% were not.

The FGDs with private investors brought additional information to light concerning the interest rate of bank loans. Some of the relevant points are summarised below. The interviewee's opinions on the interest rate are that:

- i. It is fair compared to the benefits the loan offers to their investment activities.
- ii. If the loan is properly utilised for the intended objective, the interest rate does not have a negative impact.

- iii. Compared with other financial institutions, the interest rate of commercial banks is low.
- iv. The interest rate is fair, but the loan application procedure and limits on the loan amount is not, and does not meet the investor's requirements.
- v. It promotes economic development.

Conversely, other participants in the FGD felt that the interest rate level stated that interest rates of bank loans was high because:

- i. They were required to pay as per the regulation of the commercial banks and the NBE.
- ii. Inflation has its own impact on the interest rate increment.
- iii. Bank officials, and especially engineers of the banks, are highly corrupt.
- iv. The repayment period of the loan is too short.
- v. In relation to the ability of the loan to increase productivity and output, the interest rate is deemed high.

f) Infrastructure facilities and investment status group

The variables used to evaluate the quality and efficiency of infrastructure service deliveries to private investors in the manufacturing sector are discussed below. These infrastructure establishments are: road authority, telecommunication authority, electric power corporation, water/sewerage agency, postal service agency, port service authority, investment office, municipality, and customs and revenue authority.

According to Table 6.14 below, the lack of infrastructure facilities influenced 30 private investors (18% of the total that delayed) and of these 9 (16%) were found in the started group and 21 (20%) in the non-started group. Of the private investors found in both groups, 134 (82% of the total that delayed) said that problems with infrastructure facilities did not have an impact on ISD. This means that though there was an investment delay, it was not due to a lack of infrastructure.

Table 6.14: The impact of infrastructure facilities on investment status delay

Attributes	Non-started				Started				Total			
	Delayed		Non-delayed		Delayed		Non-delayed		Delayed		Non-delayed	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Had impact	21	20	3	75	9	16	10	17	30	18	13	20
Did not have an impact	86	80	1	25	48	84	50	83	134	82	51	80
Total	107	100	4	100	57	100	60	100	164	100	64	100

(Source: Self compiled from Survey Questionnaire, 2014)

As part of the crosstabs SPSS result, the value of the chi-square statistic is 22.615. This value is highly significant ($p < .001$) and indicates that the type of status group found has a significant effect on whether a private investor delays because of infrastructure facility difficulties (see Appendix A). This means that there is an association between the type of status group and whether the private investor delayed or not. It also shows that the proportion of private investors that delayed to the proportion that did not in the two status groups is significantly different due to access to infrastructure facilities. This shows that of the investors in the non-started group, 75% of non-delayed private investors were impacted by infrastructure facilities and 25% were not, whereas in started group, the percentage impacted by infrastructure facilities decreases to about 17% and those that were not, to 83% (see Table 6.14).

According to the FGDs, private inventors found in all statuses said that the quality and efficiency of service deliveries of the electric power corporation and municipal office were not good. However, the other institutions listed above were generally felt to be delivering efficient and quality services to private investors in the manufacturing sector. The main reasons for the obstacles experienced by the above two facilities were discussed in the interviews with the State of TIO, Mekelle municipality office and Tigray Electricity Agency experts. According to the interviewees, there is a high demand for electric power in the country because of the expansion of investment during the past two decades. To solve this problem, the government is working on

increasing the current capacity to 10,000 megabits in the next five years. Problems experienced with the municipality office were said to be because of a lack of human capacity and commitment to taking responsibility for a problem.

g) Access to land and investment status group

Table 6.15 below presents the problem of access to land and considers the land tenure system, bureaucratic procedures and lease price of land for private investors in the manufacturing sector. To summarise, the status of 63 private investors delayed (34% of the total that delayed) because of problems of access to land and of these 19 (29%) were found in the started group and 44 (36%) were in the non-started group. Moreover, the ISD of 123 private investors (66% of the total that delayed) were not impacted by problems of access to land for their investments. Here, 46 (71%) were found in the started group and the other 77 (64%) were in the non-started group status. This means that even though there was an ISD, it was not because of the problem of access to land.

Table 6.15: The impact of access to land on investment status delay

Attributes	Non-started				Started				Total			
	Delayed		Non-delayed		Delayed		Non-delayed		Delayed		Non-delayed	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Had impact	44	36	1	25	19	29	18	26	63	34	19	26
Didn't have impact	77	64	3	75	46	71	50	74	123	66	53	74
Total	121	100	4	100	65	100	68	100	186	100	72	100

(Source: Self compiled from Survey Questionnaire, 2014)

The value of the chi-square statistic is 1.734 and this value is insignificant ($p = .188$), indicating that the type of status group did not have a significant effect on whether a private investor would delay or not (see Appendix A). This insignificant result shows that there is no association between the type of status group and whether the private investor delayed or not due to land access. That is, the pattern of responses in the two status groups shows an insignificant difference. This insignificant finding reflects the fact that of the private investors found in the non-started group, 36% of delayed

private investors had land access problem and 64% did not. In the same way when found in the started group, about 29% were influenced by land access problems and 71% were not because they had easy land access. In the case of the non-delayed private investors the impact in both statuses was almost the same (see Table 6.15).

The means of access to land by the investors were discussed in the FGDs and the following responses were given:

- i. Some of the private investors used their own land.
- ii. Some got the land for investment through purchase and through a lease.
- iii. There are no complicated procedures for accessing land.
- iv. Some of the investors got the land from the foreclosure of bank bids.

According to Table 6.15 above, in the case of private investors who felt that there was a delay due to the problems of access to land (i.e. 63 investors), around 82% of respondents said that the existing land tenure system and bureaucratic procedures were obstacles to accessing land for their investment by both status groups. However, around half of these respondents reported that the land lease price was not a problem to gaining land for investment purposes (see Table 6.16).

Table 6.16: Problems of land access to private investors

Problems	Attributes	Types of status group				Total	
		Non-started		Started			
		Freq.	%	Freq.	%	Freq.	%
Land tenure system	Yes	38	84	30	79	68	82
	No	7	16	8	21	15	18
Bureaucratic procedure	Yes	36	80	33	87	69	83
	No	9	20	5	13	14	17
High lease price	Yes	26	58	16	42	42	51
	No	19	42	22	58	41	49

(Source: Self compiled from Survey Questionnaire, 2014)

Table 6.17 below ranks the severity of land access problems that creates delays to all status respondents. Based on this, the most severe problems of access to land among the private investors are bureaucratic procedures, the existing land tenure

system, and lease price of land. These are ranked from one to three respectively for all status groups.

Table 6.17: The ranking of problems for land access to private investors

Level of difficulty	Types of status group				Total	
	Non-started		Started			
	Freq.	%	Freq.	%	Freq.	%
Bureaucratic procedure (1)	32	71	20	53	52	63
Land tenure system (2)	27	84	16	55	43	71
High lease price (3)	24	96	8	57	32	82

(Source: Self compiled from Survey Questionnaire, 2014)

In addition to the problems related to access to land, private investors in the FGDs added the following land-related problems:

- i. The fact that they had to wait to get land for investment until the government had paid reparation to the farmers who were previously farming the land.
- ii. The fact that private investors did not get the land on time, nor was it the size requested or in the location required for their investment.
- iii. The investment permit is issued at the regional level, and this created problems for those who invested at a zonal level.

h) Judicial system and investment status group

The respondents were also asked about the impact on ISD from the efficiency of the judicial system, for example, the lack of independence, inability to enforce rulings, delay in court rulings, lack of motivation and corruption in the State of Tigray. In this way, the influence of the efficiency of the judicial system on the progress of private investors was studied.

Table 6.18 below was generated using SPSS. It contains a number of private investors that fall into each combination of groups. More than half of the respondents said that their ISD was affected by problems in the judicial system. Accordingly, 106 private investors delayed due to the inefficiency of the judicial system (57% of the

total that delayed) and of these 32 (49%) were found in the started group and 74 (62%) were found in the non-started group. That is, the overall survey result indicated that the majority of private investors in the manufacturing sector felt that the judicial system in the state had delayed the progress of their investment status because of its inefficiency. Generally, almost half of the respondents in the started group were delayed and nearly two-thirds of respondents in the non-started group were prevented from proceeding to the implementation status due to problems in the judicial system. The progress of only 79 private investors did not affect by the judicial system of the study area (43% of the total that delayed) and of those 33 (51%) were found in started group and 46 (38%) in the non-started group.

Table 6.18: The impact of the judicial system on investment status delay

Attributes	Non-started				Started				Total			
	Delayed		Non-delayed		Delayed		Non-delayed		Delayed		Non-delayed	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Had impact	74	62	3	75	32	49	38	57	106	57	41	58
Didn't have impact	46	38	1	25	33	51	29	43	79	43	30	42
Total	120	100	4	100	65	100	67	100	185	100	71	100

(Source: Self compiled from Survey Questionnaire, 2014)

In this study, the association of the two variables are assessed using the Pearson's chi-square test and this statistic test value is 1.995. The value is insignificant ($p < .158$), indicating that the type of status group found has an insignificant effect on whether an investor delays because of the judicial system (see Appendix A). This result indicates that there is no relationship between the type of status group and whether the private investor delayed or not because of the judicial system. This means that the proportion of private investors delayed to those that did not in the two status groups is not significantly different. This insignificant finding reveals the fact that when found in the non-started group, about 62% of the private investors are delayed because of the impact of the judicial system and 38% are not. Similarly, when found in the started group, about 49% were impacted and 51% not (see Table 6.18).

In the case of private investors who replied that the inefficiency of the judicial system influences their investment status, more than three-fourths of both status groups said a lack of independence and inability to enforce the rulings, delayed court rulings, and corruption were the major reasons for judicial inefficiency. Only 70% of these respondents found in the non-started group replied that the acute problem causing the inefficiency of the judicial system of the state was also a lack of motivation (see Table 6.19).

Table 6.19: Shortcomings of the judicial system to private investors

Acute shortcoming	Attributes	Types of status group				Total	
		Non-started		Started			
		Freq.	%	Freq.	%	Freq.	%
<i>Lack of independence</i>	Yes	70	91	52	73	122	82
	No	7	9	19	27	26	18
<i>Inability to enforce ruling</i>	Yes	68	88	58	82	126	85
	No	9	12	13	18	22	15
<i>Delayed court rulings</i>	Yes	65	84	45	63	110	74
	No	12	16	26	37	38	26
<i>Lack of motivation</i>	Yes	54	70	30	42	84	57
	No	23	30	41	58	64	43
<i>Corruption</i>	Yes	61	79	60	85	121	82
	No	16	21	11	15	27	18

(Source: Self compiled from Survey Questionnaire, 2014)

This survey also ranked the level of the challenges related to the judicial system in order of their severity. Table 6.20 below presents this information. According to both status groups, the most acute shortcoming for the inefficiency of the judicial system is a lack of independence. The second-worst problem for the started group is the inability to enforce rulings and for the non-started group, it is a lack of motivation. Finally, the third most acute shortcoming is a delay court in rulings for all private investors.

Table 6.20: Ranking of judicial system inefficiencies

Level of difficulty	Types of status group				Total	
	Non-started		Started			
	Freq.	%	Freq.	%	Freq.	%
Lack of independence (1)	32	42	23	32	55	37
Inability to enforce rulings (2)	12	16	20	31	32	23
Lack of motivation (2)	25	34	7	11	32	23
Delay court rulings (3)	28	44	11	21	39	34

(Source: Self compiled from Survey Questionnaire, 2014)

In addition to the above-stated reasons for the inefficiency of the judicial system, private investors in the FGD said that the discrimination among the investors in making decisions on investment activities is also a problem. During the FGD, a lack of skilled manpower or lack of capacity among lawyers is also a major reason for the inefficiency of the judicial system. However, some groups stated that efficiencies develop through the process and mostly just requires hard work. In other words, they acknowledge that there are problems but feel that the efficiency of the judicial system will improve given time.

The major reasons for the problems related to the legal system stated in the FGDs are summarised:

- i. There are poor legal systems in place that open the door to corruption in the state.
- ii. The legal system is not efficient enough to fight corruption.
- iii. The major challenge is not the gap in the legal system, but rather problems with the individuals empowered in the legal system.
- iv. Sometimes private investors felt that it would be better to pay a bribe in order to get their work done faster.
- v. Investors always complain, and this is a clear sign of the prevalence of corruption.
- vi. Clear answers are not given by the persons assigned to handle queries from private investors.

i) Bureaucratic red tape and investment status group

The study also investigated the impact of bureaucratic red tape on the investment status due to the delay in receiving public services like investment licenses, bank loans, vehicle registrations, police services and other utilities. As indicated in Table 6.21 below, more than three-fourths of the respondents replied that they were subjected to delays in their status because of bureaucratic red tape in getting public services and said that this did not facilitate their investment status. However, almost one-fourth of the respondents replied that they were not subjected to ISD due to bureaucratic red tape. After analysing the data in SPSS, a total of 153 private investors (82% of the total that delayed) were delayed due to bureaucratic red tape. Of these, 50 (77%) were found in the started group and 103 (85%) in the non-started group. In general, more than three-fourths of the respondents were affected by the problem of bureaucratic red tape. However, 33 private investors said that it did not influence their investment status (18% of the total that did delay) and of those that did delay 15 (23%) were found in the started group and 18 (15%) were found in the non-started group.

Table 6.21: Bureaucratic red tape impact on investment status delay

Attributes	Non-started				Started				Total			
	Delayed		Non-delayed		Delayed		Non-delayed		Delayed		Non-delayed	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Had impact	103	85	4	100	50	77	42	62	153	82	46	64
Didn't have impact	18	15	0	0	15	23	26	38	33	18	26	36
Total	121	100	4	100	65	100	68	100	186	100	72	100

(Source: Self compiled from Survey Questionnaire, 2014)

As per the Pearson's chi-square test, the value of the chi-square statistic is 9.645. This value is significant ($p = .002$), indicating that the type of status group found had a significant effect on whether a private investor would delay due to bureaucratic red tape (see Appendix A). This significant result indicates that there is a relationship between the type of investment status group and whether the private investor delays or not. By relationship here, we mean that the pattern of responses in the two status

groups is significantly different due to the bureaucratic red tape. This significant finding (see Table 6.21 above) reveals the fact that when found in the non-started group, about 85% of the private investors become delayed due to bureaucratic red tape and 15% do not, whereas when found in the started group, things are somewhat different; about 77% are impacted and 23% are not. What is noteworthy is that, in the case of non-delayed private investors, the impact of bureaucratic red tape in the non-started group is greater (100%) than in the started group (62%).

In the case of the private investors who replied that their investment status was delayed due to bureaucratic red tape, around three-fourths of the respondents said that getting bank loans and utility services (like water, electric power, and telephone lines) were the major obstacles. But, the other public services (like investment licenses, the land access process, vehicle registrations and police services) did not much impact the delay of investment status arising from bureaucratic red tape (see Table 6.22).

Table 6.22: Public services delay due to bureaucratic red tape

Public services	Attributes	Types of status group				Total	
		Non-started		Started			
		Freq.	%	Freq.	%	Freq.	%
<i>Investment license</i>	Yes	28	26	23	25	51	26
	No	78	74	69	75	147	74
<i>Bank loan</i>	Yes	87	82	64	70	151	76
	No	19	18	28	30	47	24
<i>Land access</i>	Yes	45	43	32	35	77	39
	No	61	57	60	65	121	61
<i>Register vehicle</i>	Yes	26	25	12	13	38	19
	No	80	75	80	87	160	81
<i>Police services</i>	Yes	4	4	6	7	10	5
	No	102	96	86	93	188	95
<i>Utility services</i>	Yes	88	83	55	60	143	72
	No	18	17	37	40	55	28

(Source: Self compiled from Survey Questionnaire, 2014)

The severity of the problem to investors in getting the public services listed above is ranked in Table 6.23 below. It is evident that the first and second public services most subjected to delay due to bureaucratic red tape are access to a bank loan and utility services (water, electric and telephone) for all respondents of private investors in the manufacturing sector.

Table 6.23: Ranking of public services delayed due to bureaucratic red tape

Level of difficulty	Types of status group				Total	
	Non-started		Started			
	Freq.	%	Freq.	%	Freq.	%
Bank loan (1)	56	53	45	51	101	52
Utilities (2)	56	61	25	42	81	53

(Source: Self compiled from Survey Questionnaire, 2014)

In addition to the above, private investors in the FGDs and officials interviewed mentioned the poor delivery of the following public services as causes of delay due to bureaucratic red tape.

- i. Inefficiency of customs and duty authority in facilitating taxes, customs duties, etc.
- ii. Inadequate services by the transport authority in granting licenses and other services.
- iii. Inefficiency of the municipal office, especially in construction design activities.
- iv. Unwillingness of the investment office in permitting them to invest as per their interest.
- v. Inadequate service by the telecommunications authority, especially the internet service problem.

It was also noted that the reasons for the delay in getting public services are a lack of capacity of the employees. This capacity no longer matches the need because of the growth in investment activities.

j) Corruption and investment status group

The perception of private investors on corruption as a cause of ISD was studied. In particular it refers to the impact on ISD due to the level of corruption in getting services like a bank loans, investment permits, licenses, municipal services, etc.

Accordingly, out of the total respondents, more than half of the private investors that are delayed reported that their investment status was negatively influenced by the high challenge of corruption in the state to get different services. From the SPSS output in Table 6.24 below, it can be seen that 102 private investors delayed because of the challenge of corruption in the state to get different services (56% of the total that delayed) and of these 30 (48%) were found in the started group and 72 (60%) were found in the non-started group. That is, near to half of the respondents in the started group and above half of the respondents in the non-started suffered due to a problem with corruption. Of the 126 investors who stated that corruption did not impact their investment status, 81 (44% of the total that were delayed), 33 (52% of the started group that were delayed) and 48 (40% of the non-started group that were delayed) have actually been delayed.

Table 6.24: Corruption impact on investment status delay

Attributes	Non-started				Started				Total			
	Delayed		Non-delayed		Delayed		Non-delayed		Delayed		Non-delayed	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Had impact	72	60	3	75	30	48	19	30	102	56	22	33
Didn't have impact	48	40	1	25	33	52	44	70	81	44	45	67
Total	120	100	4	0	63	100	63	100	183	100	67	100

(Source: Self compiled from Survey Questionnaire, 2014)

In addition, the value of the chi-square test from SPSS is 11.188. This value is significant ($p < .001$), indicating that the type of status group found had a significant effect on whether a private investor would delay (see Appendix A). The significant result indicates that there is an association between the type of status group and whether the private investor delayed or not. That is, the proportion of private

investors that delayed due to the proportion that did not in the two status groups is significantly different. This significant finding reflects the fact that when found in the non-started group, about 60% of private investors were affected and 40% were not, whereas in the started group, the opposite is true (about 52% were not influenced and 48% were impacted). The impact of corruption was greater for the non-started group in the case of non-delayed private investors than for the started group (see Table 6.24).

After analysing the impact of corruption as reported by the private investors, the effect of corruption on PIMS was examined. Accordingly, the FGDs showed that corruption had a negative effect on private investors in the manufacturing sector in particular and on the overall economic sectors in general. Moreover, the FGD participants added that corruption levels in the state is still at a lower level than other developing countries. Nevertheless it has the following negative effects on investment:

- i. It affects the economic, political and social conditions and so can create crises in the state.
- ii. It hampers development and consumes the public wealth of the state.
- iii. It enhances a rent-seeking attitude and hinders poverty reduction endeavors.
- iv. It affects the quality of production and competition.
- v. It could push private investors to shift from the state to other areas where there is a relatively good investment environment and so decrease job opportunities and other investment benefits.
- vi. It enhances partiality among investors, especially in the services of financial institutions.

k) Investment incentives and investment status group

The investment incentives given by the government to private investors were also studied so as to ascertain whether these incentives promote the investment status or not. Here, income tax holidays, customs duty, access to low land lease prices and market incentives are considered.

The relevant information here is presented in Table 6.25 below. In total, 20 private investors delayed their status due to a lack of investment incentives (11% of the total that delayed) and of these, 8 (12%) were found in the started group and 12 (10%) in the non-started group. However, 166 private investors were not affected at all by the challenges to get investment incentives provided by the government (89% of the total that delayed) and of those that did not delay, 57 (88%) were found in the started group and 109 (90%) were found in the non-started group.

Table 6.25: Investment incentives impact on investment status delay

Attributes	Non-started				Started				Total			
	Delayed		Non-delayed		Delayed		Non-delayed		Delayed		Non-delayed	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Had impact	12	10	0	0	8	12	7	10	20	11	7	10
Didn't have impact	109	90	4	100	57	88	61	90	166	89	65	90
Total	121	100	4	0	65	100	68	100	186	100	72	100

Source: Self compiled from Survey Questionnaire (2014)

To examine the association between the two variables, the Pearson's chi-square statistic test was done and its value is 0.042. This value is highly insignificant ($p = .837$), indicating that there is no relationship between the type of status group and whether the private investor delayed or not due to incentives given by government (see Appendix A). That means the pattern of responses in the two status groups is not significantly different. This insignificant finding reflects the fact that when found in the non-started group, about 10% of private investors are delayed and 90% are not. When found in the started group, about 12% of private investors are delay because of investment incentives problems and 88% are not (see Table 6.25).

The impact on delays of types of investment incentives given by the government to encourage private investors in the manufacturing sector was also examined. From the total respondents, around three-fourths of the investors replied that income tax holidays, customs duty, and access to low lease price of land were significant motivators to them to invest in the state. However, 56% of the respondents in this

group of investors in the manufacturing sector replied that market incentives did not motivate them much to invest in the state (see Table 6.26).

Table 6.26: Investment incentives that promote private investors

Investment incentives	Attributes	Types of status group				Total	
		Non-started		Started			
		Freq.	%	Freq.	%	Freq.	%
<i>Income tax holidays</i>	Yes	127	77	39	60	166	72
	No	39	24	26	40	65	28
<i>Custom duty</i>	Yes	134	81	41	63	175	76
	No	32	19	24	37	56	24
<i>Bank loan</i>	Yes	112	68	38	59	150	65
	No	54	32	27	41	81	35
<i>Access to low land lease price</i>	Yes	149	90	46	71	195	84
	No	17	10	19	29	36	16
<i>Market incentives</i>	Yes	81	49	21	32	102	44
	No	85	51	44	68	129	56

Source: Self compiled from Survey Questionnaire (2014)

The investment incentives that promote private investments are ranked according to the responses of the private investors. Table 6.27 below shows that the investment incentive which significantly helps to promote private investment is access to a low lease of land. Customs duty was the second most important investment incentive that promoted the private investment in the state.

Table 6.27: Ranking of investment incentives that promote private investors

Level of difficulty	Types of status group				Total	
	Non-started		Started			
	Freq.	%	Freq.	%	Freq.	%
<i>Low lease price of land (1)</i>	40	24	26	40	66	29
<i>Custom duty (2)</i>	42	31	17	33	59	32

(Source: Self compiled from Survey Questionnaire, 2014)

1) Political instability risk and investment status group

The risk of political instability in the study area in relation to border conflicts, security systems, trade restrictions and public offices, as well as unnecessary interference are examined in this section.

As shown in Table 6.28 below, in total 29 private investors constrained their status due to the impact of risk of political instability (16% of the total that delayed) and of these 5 (8%) were found in the started group and 24 (20%) in the non-started group. Moreover, 157 private investors did not affect their investment at all due to political stability in the state that hinders the operation of the private investors in the manufacturing sector (84% of the total that delayed) and of those that were not affected, 60 (92%) were found in the started group and 97 (80%) in the non-started group.

Table 6.28: Political instability risk impact on investment status delay

Attributes	Non-started				Started				Total			
	Delayed		Non-delayed		Delayed		Non-delayed		Delayed		Non-delayed	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Had impact	24	20	0	0	5	8	7	10	29	16	7	10
Didn't have impact	97	80	4	100	60	92	61	90	157	84	65	90
Total	121	100	4	100	65	100	68	100	186	100	72	100

(Source: Self compiled from Survey Questionnaire, 2014)

To examine the relationship between variables, Pearson's chi-square statistic was calculated and it is 5.672. This value is less significant ($p = .017$), indicating that the type of status group found had a small significant effect on whether an investor would delay due to the risk of political instability (see Appendix A). The significant result indicates that there is an association between the type of status group and whether the private investor delays or not due to political instability risks. This shows that the difference in the pattern of responses (i.e. the proportion of investors that delayed to the proportion that did not) in the two status groups is significantly small.

This finding reflects the fact that when found in the non-started group, about 20% of private investors were impacted by political instability and risk and 80% were not. In the started group, about 8% of private investors delay due to risk and 92% did not delay because of risks of political instability (see Table 6.28).

Out of those who replied that there is a risk of political instability (36 investors), 97% and 86% of the respondents in the two groups reported that border conflicts and unnecessary interference from officials were the major causes of political instability and risk in the state. However, security systems and trade restrictions were not deemed risky for private investors in the manufacturing sector (see Table 6.29).

Table 6.29: Causes of political instability risks to private investors

Risks	Attributes	Types of status group				Total	
		Non-started		Started			
		Freq.	%	Freq.	%	Freq.	%
Border conflict	Yes	28	97	7	100	35	97
	No	1	3	0	0	1	3
Weak security system	Yes	1	3	1	14	2	6
	No	28	97	6	86	34	94
High trade restriction	Yes	2	7	5	71	7	19
	No	27	93	2	29	29	81
Public offices unnecessary interference	Yes	28	97	3	43	31	86
	No	1	3	4	57	5	14

(Source: Self compiled from Survey Questionnaire, 2014)

The risks of political instability components were ranked in order to show their influence on the investment undertakings of the private investors. Table 6.30 below shows that the major political instability risk for private investment is border conflicts between Ethiopia and Eritrea. The second major political instability risk is unnecessary interference from public offices/officials in the private investors' activities.

Table 6.30: Ranking of political instability risks to private investors

Incentives	Types of status group				Total	
	Non-started		Started			
	Freq.	%	Freq.	%	Freq.	%
Border conflict (1)	28	97	7	100	35	97
Unnecessary interference from public offices (2)	26	93	2	29	28	80

(Source: Self compiled from Survey Questionnaire, 2014)

m) Investment locations and investment status group

The impact of investment location on private investment progress was also included in the study. As Table 6.31 below shows, in total 5 private investors were influenced by the problem of the investment locations (3% of the total that delayed) and of these 3 (5%) were found in the started group and 2 (2%) in the non-started group. However, 179 private investors were not at all affected because of their investment location (97% of the total that did not delay) and of those that did not delay, 62 (95%) were found in the started group and 117 (98%) in the non-started group.

Table 6.31: Impact of investment location on investment status delay

Attributes	Non-started				Started				Total			
	Delayed		Non-delayed		Delayed		Non-delayed		Delayed		Non-delayed	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Had impact	2	2	0	0	3	5	20	29	5	3	20	28
Didn't have impact	117	98	4	100	62	95	48	71	179	97	52	72
Total	119	100	4	100	65	100	68	100	184	100	72	100

(Source: Self compiled from Survey Questionnaire, 2014)

The value of the chi-square statistic is 17.633. This value is highly significant ($p < .001$), indicating that the type of status group found had a significant effect on whether an investor would delay due to investment location (see Appendix A). The highly significant result indicates that there is an association between the type of status group and whether the private investor delayed or not due to location. That is,

the proportion of private investors that delayed to the proportion that did not in the two status groups is significantly different. This significant finding reflects the fact that, when found in the non-started group, only 2% of private investors became delayed due to the impact of investment location and 98% did not, but when found in the started group, about 5% of private investors delayed because of investment location and 95% did not (see Table 6.31).

Table 6.32: Investment location problems to private investors

Location problems	Attributes	Types of status group				Total	
		Non-started		Started			
		Freq.	%	Freq.	%	Freq.	%
Long distance to raw material	Yes	0	0	17	74	17	68
	No	2	100	6	26	8	32
Long distance to sell products	Yes	0	0	8	35	8	32
	No	2	100	15	65	17	68
Shortage of skilled and customer attractive labor force	Yes	0	0	2	9	2	8
	No	2	100	21	91	23	92
Higher cost of house rents	Yes	0	0	3	13	3	12
	No	2	100	20	87	22	88

(Source: Self compiled from Survey Questionnaire, 2014)

As Table 6.32 above reveals, out of the total respondents who replied that they had investment location problems, 68% (17 investors) stated that the long distances to raw materials was the major problem in the manufacturing sector in the study area. This is because Mekelle town (the main city in the State of Tigray) is far (780 km) from the capital city of Ethiopia (Addis Ababa) and even further from the port of Djibouti.

6.1.4. Summary of the descriptive analysis

To summarise, the results of the descriptive analysis reveals the impact of each variable on the ISD out of the total number of respondents that delayed. The impact of the different variables on the ISD varies within the types of investment statuses.

Some variables are influenced in one status group but not in another, for example the judicial system. Other variables impact on both statuses but with a different percentage level, for example access to credit. Table 6.33 below provides a detailed summary of the results of the descriptive analysis in relation to the impact of the explanatory variables on the investment status.

Table 6.33: Summary of Descriptive analysis results

Variables	Non-started group	Started group	All respondents
Educational level	Primary & Secondary Schools highly delayed but the level of delay is high in secondary school.	Primary & Secondary Schools highly delayed but the level of delay in the primary school is high.	Primary & Secondary School educational levels highly delayed
Investment area	Food, non-metallic mineral products, Basic metals more delayed industries	Food, non-metallic mineral products, Basic metals more delayed industries and here the level of delay is high comparing with the other group.	Food, non-metallic mineral products, Basic metals more delayed industries
Access to credit	Had an impact for the delay (80%)	Had an impact for the delay (66%)	Had an impact for the delay (76%)
Interest rate	Did not have impact for the delay (77%)	Did not have impact for the delay (78%)	Did not have impact for the delay (77%)
Infrastructure facilities	Did not have impact for the delay (80%)	Did not have impact for the delay (84%)	Did not have impact for the delay (80%)
Access to land	Did not have impact for the delay (64%)	Did not have impact for the delay (71%)	Did not have impact for the delay (66%)
Judicial system	Had an impact for the delay (62%)	Did not have impact for the delay (51%)	Had an impact for the delay (57%)
Bureaucratic red tape	Had an impact for the delay (85%)	Had an impact for the delay (77%)	Had an impact for the delay (82%)
Corruption	Had an impact for the delay (60%)	Did not have impact for the delay (52%)	Had an impact for the delay (56%)
Investment incentives	Did not have impact for the delay (90%)	Did not have impact for the delay (88%)	Did not have impact for the delay (89%)
Political instability	Did not have impact for the delay (80%)	Did not have impact for the delay (92%)	Did not have impact for the delay (84%)
Investment location	Did not have impact for the delay (98%)	Did not have impact for the delay (95%)	Did not have impact for the delay (97%)

(Source: Self compiled from Survey Questionnaire, 2014)

6.2. Results of econometric model

As explained in the methodology section, the duration analysis was used to complement the preceding descriptive result. The descriptive analysis focuses on explaining factors that determine the delay of private investment from one investment stage to the next.

The duration of domestic private investment, that is, the time from the application for an investment permit at the investment office until the investment license is granted and operation begins, is influenced by various factors which have been discussed in previous empirical works. Identification of both dependent and independent variables for this study was guided by the conceptual framework of the study and review of related literature. Due consideration was given to include relevant variables and appropriate post-estimation tests were made. The duration model was used to estimate the potential effect of each explanatory variable on the condition to continue the private investment status timeline.

Different pre- and post-estimation tests were made to minimise bias, inconsistency and inefficiency estimators. To consider the problem of heteroscedasticity, it was estimated robust standard errors and there is no serious multicollinearity problem that results in the estimation of biased estimators. A multicollinearity problem arises when two or more independent variables in a regression equation are highly correlated. If there is the presence of collinearity between the independent variables, it is difficult to separate out the effect of each parameter estimate on the dependent variable. It is quite difficult to estimate accurately the effect of that variable and so there is little confidence in policy prescriptions on these estimates. It is thus important to test for the presence of collinearity between variables before running a regression (see Appendix D).

The link test was used whether or not the model is correctly specified and whether included irrelevant variable or excluded important variable. When the specification is correct, one is unable to find additional predictors that significantly affect the

response variable. To do this, after the regression, a command for a specification test is often used. The predicted value should be a significant predictor since it is the predicted value from the model. This will be the case unless the model is completely miss-specified. On the other hand, if the model is properly specified, the variable predicted value squared should not have much predictive power other than by chance. Therefore, if the predicted value squared is significant, then the link test is significant. That means that it is either an omitted relevant variable(s) or the link function is not correctly specified. The link test result in the case of this study was found to be not statistically significant. All of the duration estimations made on the specification test result in the study, as shown in Appendix D, justify that absence of specification problem. Thus, including an explanatory variable in each of the duration analyses improves the fitness of the model.

The previous section comprehensively pointed out the investment status delay and factors affecting both the non-started and started groups of private investment status. However, understanding the extent to which these factors determine the private investment status could be pointed out by employing an econometric analysis. For this purpose, as discussed in the methodology section, a duration/hazard model is used to identify the major determinants of private ISD for the non-started and started groups of private investors. The variables which were used in descriptive analysis and found to have more explanatory power are discussed below. The effects of explanatory variables are consistent with the prior descriptive analysis, literature reviews, and theories. However, some variables either do not have a significant influence or affect at a high significance levels, i.e. a 10% significance level.

6.2.1. Determinants of all statuses of private investment

This section discusses factors affecting the start of a private investment in the state and uses the inception of operation as a guide. This model (i.e. all statuses of private investors) includes data from all private investors across all three statuses in order to ascertain the impact of the variables as a whole. Accordingly, the model identifies the variables that affect private investment status delay for all private investors, or as a whole. Investors already in the operation phase are included in the sample

because they overcame challenges in the previous statuses in order to reach the production stage.

The study used to index (*infrastra*) – calculated using factor analysis by combining different infrastructure dummies – is an infrastructure indicator. A low infrastructure index likely delays an investor's status and ultimately also the start of operations in the State of Tigray for all forms of industries. That is, the infrastructure facilities variable has a negative effect on the significant level of 5% of the entire private ISD. Infrastructure facilities is equal to 0.556193 and this indicates that the decrease in infrastructure facilities results in an increase in the ISD of the private investors, thus the null hypothesis (H_01) is not rejected.

This study also proves that the judicial system has a significant and negative effect on the significant level of 10% of the private ISD. The hazard ratio of the judicial system is 0.3598874 which indicates that the lack of efficient judicial systems causes private ISD, thus the null hypothesis (H_01) is not rejected. Private investors that complained about the inefficiency of judiciary system started operations later than those that did not complain about an efficiency problem.

Considering the food industry as a reference category of investment type, it was found that textile and textile products, leather and leather products, paper and paper products, chemical and chemical products, computer, electronic and optical products, and electrical product industries take a longer time to proceed to their next status (see Appendix D). Even if the economic/practical significance of this variables is very low, the longer time period in the phases for industries mentioned relative to food industries implies that the initial investment capital for food industries is low relative to other industries and may require a relatively low level of human capital for the investment status to progress, thus the null hypothesis (H_01) is rejected and the alternative hypothesis (H_02) is accepted. Those investment areas in which investors are less involved are more delayed than those which have a higher number of investors (e.g. the food industry and basic metals).

The interest rate variable has a significant and positive effect on the significant level of 1% of the private ISD in the State of Tigray with the hazard ratio of the interest

rate of 3.943876, thus the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. This result means that a decreased interest rate helps the progress of private investors in the manufacturing sector. More firms observed that low-interest rate payments on loans meant they could enter into production sooner. Firms that reported high-interest payments cited them as barriers to running a business. This suggests that low-interest rate payments are not perceived as a barrier to entering into operation in the state.

Similarly, the investment location variable has a significant positive effect on the level of 1% of the private ISD. Investment location is equal to 6.754458 and this indicates that investment location is less of a problem and results in a decrease in the private ISD, thus the null hypothesis (H_0) is not rejected. This indicates that problems linked with the investment location reported by private investors of a firm are not detrimental to business startups. Investors are more likely to start operations than their counterparts who claim the existence of location-related problems. However, all remaining variables fail to significantly affect the start of operations in different industrial categories in the state (see Table 6.34).

Table 6.34: Duration model results of entire private investors

<i>Variables</i>	<i>Haz. Ratio</i>	<i>Robust Std. Err.</i>	<i>Z</i>	<i>p> z </i>	<i>[95% Conf. Interval]</i>	
Educ	1.033874	0.060814	0.57	0.571	0.9212951	1.16021
Accred	0.8528625	0.4600843	-0.30	0.768	0.2962721	2.45509
Inrat	3.943876***	1.848065	2.93	0.003	1.574193	9.88072
Infrstra	0.5619453**	0.1334421	-2.43	0.015	0.3528287	0.8950025
Accland	0.7863514	0.4377426	-0.43	0.666	0.2641031	2.341315
Judsys	0.3598874*	0.1903964	-1.93	0.053	0.1275979	1.015056
Bureta	0.6377256	0.3826259	-0.75	0.453	0.1967549	2.067008
Corrupt	0.5970556	0.3051861	-1.01	0.313	0.2192409	1.625953
Invinc	0.561424	0.4653851	-0.70	0.486	0.1105856	2.850253
Polins	0.5758247	0.478464	-0.66	0.507	0.1129823	2.934745
Invloc	6.754458***	2.843994	4.54	0.000	2.959295	15.41674
Invtyp1	See Appendix D for detail investment areas results					

Statistics:		
Number of observation	215	
Wald chi ² (24)	16964.76	
Prob > chi ²	0.0000	
Log pseudo likelihood	-160.61179	

(Source: Self compiled from Survey Questionnaire, 2014)

***, ** and * indicate level of significance at 1%, 5%, and 10% respectively

6.2.2. Determinants of the started group of private investment

Started group includes investors in the implementation and operation statuses, i.e. those that have begun with the construction and installation of machinery for investment and those who have an investment license and have commenced with production. This model (i.e. implementation status) only includes private investors in the implementation and operation statuses. The model sought to establish the impact of variables on investors beyond the pre-implementation phase. The model assumes that when the investors completed the questionnaire, they took into account all the problems they experienced in the previous phase(s).

In this status group, infrastructure facilities has a significant and negative effect on the private ISD in the State of Tigray with a hazard ratio of 0.4933319, thus the null hypothesis (H_01) is not rejected. The results indicate that a low infrastructure index is likely to increase the duration of implementation status in the state for all forms of industries.

In addition, the investment incentives have a negative and significant effect on the ISD with a ratio of 0.1636076, thus the null hypothesis (H_01) is rejected and the alternative hypothesis (H_02) is accepted. It indicates that private investors benefit from different investment incentive packages (*invinc*) but not enough to encourage them to begin operations than firms who do not benefit from such packages.

Meanwhile, taking the food industry as a reference category for investment type, the study found that the industries of beverages, leather and leather products, wood, and

vehicles, trailers and semi-trailers take a longer time to begin operating (see Appendix D). This means that investment types having less involvement from private investors are more delayed, thus the null hypothesis (H_01) is rejected and the alternative hypothesis (H_02) is accepted.

Furthermore, investment location has a positive and significant effect on the private ISD with a ratio of 4.196411. This means that most of the private investors reported problems associated with the investment location of a firm. Those that do not claim the existence of firm location-related problems are more likely to end the implementation phase and start with operations than their counterparts, thus the null hypothesis (H_01) is not rejected. However, all remaining variables fail to significantly affect the start of implementation in different industrial categories (see Table 6.35).

Table 6.35: Duration model results of started group (implementation and operation)

Variables	Haz. Ratio	Robust Std. Err.	Z	p> z 	[95% Conf. Interval]	
Educ	1.059013	0.0585137	1.04	0.299	0.95032	1.180138
Accred	1.431114	0.7487494	0.69	0.493	0.5132526	3.990408
Inrat	2.037712	0.9757267	1.49	0.137	0.797183	5.208677
Infrstra	0.4933319***	0.1223361	-2.85	0.004	0.3034302	0.8020834
Accland	0.9020224	0.450644	-0.21	0.836	0.3388153	2.401439
Judsys	0.4533852	0.2418342	-1.48	0.138	0.159382	1.28972
Bureta	0.6018874	0.367993	-0.83	0.406	0.18159	1.99498
Corrupt	0.6523761	0.3584489	-0.78	0.437	0.2222308	1.915102
Invinc	0.1636076*	0.1545032	-1.92	0.055	0.0257022	1.041447
Polins	0.8114946	0.5937262	-0.29	0.775	0.193423	3.404577
Invloc	4.196411***	1.847801	3.26	0.001	1.770392	9.946873
Invtyp1	See Appendix D for detail investment areas result					
Statistics:						
Number of observation		106				
Wald chi² (22)		7540.13				
Prob > chi²		0.0000				
Log pseudo likelihood		-143.28594				

(Source: Self compiled from Survey Questionnaire, 2014)

***, ** and * indicate level of significance at 1%, 5%, and 10% respectively

6.2.3. Determinants of the non-started group of private investment

This section analyses factors that explain the start of the pre-implementation status, that is, the time from when an investor has been granted an investment permit from investment office and been given access to land for private investment until the time that he/she starts the next status i.e. implementation. This model (i.e. pre-implementation status) includes all private investors in all three statuses in order to establish the impact of variables when they were in the first status of investment. Consequently this model takes into account what the impact of the delay was when private investors were in the pre-implementation status.

The study used to index (*infrastra*) – calculated using factor analysis by combining different infrastructure dummies – is the infrastructure indicator. Infrastructure facilities have a negative and significant relationship with a level of 1% of private ISD. The hazard ratio of infrastructure facilities is 0.578503, meaning that the access to infrastructure facilities increases the probability of time elapsed in the primary phase of private investment, i.e. pre-implementation status, and thus the null hypothesis (H_01) is not rejected. Automatically therefore, low levels of infrastructure index may discourage investment flow and delay activities required for operation. It was also observed that by taking the food industry as a reference category of investment type, wood products, printing, basic pharmaceutical products and pharmaceutical preparations, and electrical products industries take a longer time to end the pre-implementation status of investment duration (Appendix D), thus the null hypothesis (H_01) is rejected and the alternative hypothesis (H_02) is accepted.

According to Table 6.36 below, the interest rate has a significant and positive effect on the level of 1% of the private ISD. The ratio of the interest rate is 4.415411 which indicates that the interest rate of bank credits were not a cause for private ISD in the manufacturing sector of the State of Tigray, thus the null hypothesis (H_01) is rejected and the alternative hypothesis (H_02) is accepted. In addition, most of the private

investors replied that high-interest rate payments (*inrat*) on borrowed money is not a barrier to business start-up and they are likely to terminate the pre-implementation phase duration and continue to the next status earlier than their counterparts who observed that high-interest rate payments on the loan is a barrier to starting a business. This is consistent with the descriptive finding of private investors who reported that there are no problems to starting businesses to be associated with a firm's location (*invloc*). They are more likely to complete the pre-implementation status than those who replied that there are location-related challenges to carrying out private investment. Investment location has a significant positive effect on the level of 1% of the private investment. This variable is equal to 5.96439 and this indicates that the location of the private investors in the State of Tigray does not have an impact on ISD, thus the null hypothesis (H_0) is not rejected.

On the other hand, a delay in the primary phase (pre-implementation status) of private investment has no statistically significant correlation with the level of education, access to credit, access to land, the judicial system, bureaucratic red tape, corruption, investment incentive and political instability risk.

Table 6.36: Duration model results of non-started group (Pre-implementation)

Variables	Haz. Ratio	Robust Std. Err.	Z	p> z 	[95% Conf. Interval]	
Educ	1.002549	0.0517416	0.05	0.961	0.9060982	1.109267
Accred	0.9075571	0.3886886	-0.23	0.821	0.3920318	2.101003
Inrat	4.415411***	1.644153	3.99	0.000	2.128197	9.160736
Infrstra	0.578503***	0.1126304	-2.81	0.005	0.3949869	0.8472831
Accland	0.8044996	0.3738691	-0.47	0.640	0.32355890	2.000315
Judsys	0.5269336	0.2169822	-1.56	0.120	0.2350963	1.181044
Bureta	0.8047878	0.3998161	-0.44	0.662	0.3039535	2.130864
Corrupt	0.8345099	0.3436616	-0.44	0.660	0.3723026	1.87054
Invinc	1.052308	0.8818085	0.06	0.951	0.2036368	5.437874
Polins	0.732676	0.4800937	-0.47	0.635	0.2028398	2.646493
Invloc	5.96439***	2.131494	5.00	0.000	2.960548	12.016
Invtyp1	See Appendix D for detail investment areas results					

Statistics:		
Number of observation	215	
Wald chi2 (25)	11547.80	
Prob > chi2	0.0000	
Log pseudo likelihood	-238.45585	

(Source: Self compiled from Survey Questionnaire, 2014)

***, ** and * indicate level of significance at 1%, 5%, and 10% respectively

The table below provides a summary of the econometric analysis results of the three types of investment status in the manufacturing sector.

Table 6.37: Summary of econometrics analysis results

Variables	Non-started group	Started group	All respondents
Educational level	Insignificant	Insignificant	Insignificant
Investment area	Negative	Negative	Negative
Access to credit	Insignificant	Insignificant	Insignificant
Interest rate	Positive	Insignificant	Positive
Infrastructure facilities	Negative	Negative	Negative
Access to land	Insignificant	Insignificant	Insignificant
Judicial system	Insignificant	Insignificant	Negative
Bureaucratic red tape	Insignificant	Insignificant	Insignificant
Corruption	Insignificant	Insignificant	Insignificant
Investment incentives	Insignificant	Negative	Insignificant
Political instability	Insignificant	Insignificant	Insignificant
Investment location	Positive	Positive	Positive

(Source: Self compiled from Survey Questionnaire, 2014)

6.3. Constraints of investors in the production phase

The survey obtained from the private investors in the State of Tigray concerning their assessment of the relative magnitude of obstacles inhibiting their efforts of operations identified various constraints. Investors in the production phase were asked to rank the obstacles experienced based on their degree of constraints. Using SPSS for Windows Version 20, the results of individual investors were analysed by factor analysis to ascertain the influence of the different factors of constraints for private investors in the operation phase of the manufacturing sector.

Twenty questions were included in the questionnaire. Each was a statement followed by a five-point Likert scale ranging from 'no limitation' to 'very high limitation.' The questionnaire was designed to discover the factors that limit the operations of private investment. In other words, the variables included in the questionnaire tested the level of constraint for the operations of private investors in the last investment status (the production phase). According to Field (2009), factor analysis is appropriate when the sample size is above 50. For the constraints of private investment, 60 of the 62 respondents were fit for the analysis which means that the sample size is appropriate for factor analysis.

6.3.1. Preliminary analysis

Table 6.38 depicts the descriptive statistics and shows variables under investigation in the output. Typically, the mean, standard deviation and number of respondents (N) who participated in the survey are given. According to the mean output result from the table below, macroeconomic uncertainty (i.e. exchange rate, inflation, etc.), raw material problems, and tax rate and administration have the highest mean result and rank from first to third.

Table 6.38: Descriptive statistics

Q. No.	Variables	Mean	Std. Deviation	Analysis N
Q1	Number of financial institutions	1.50	1.066	60
Q2	Cost of financing i.e. interest rates	1.97	1.207	60
Q3	Tax rate & administration	2.45	1.294	60
Q4	Macroeconomic uncertainty e.g. inflation, exchange rate	3.08	1.608	60
Q5	Cost of investment	1.87	1.096	60
Q6	Research and development work	1.83	1.152	60
Q7	Appropriate technology supply	1.95	1.268	60
Q8	Transportation infrastructures	2.00	1.074	60
Q9	Electric power	2.35	1.300	60
Q10	Telecommunication service	1.65	.988	60
Q11	Water supply	2.30	1.344	60
Q12	Air transport	1.37	.688	60
Q13	Port facilities	1.90	1.245	60
Q14	Awareness works with investment laws	1.58	1.169	60
Q15	Demand for your product	1.67	1.084	60
Q16	Promotion medias for your product	1.55	.982	60
Q17	Pricing for your product	1.52	.873	60
Q18	Skilled and customer attractive labor force	1.75	1.230	60
Q19	Raw materials needed	2.92	1.453	60
Q20	Location to sell your product	1.65	1.162	60

(Source: Self compiled from Survey Questionnaire, 2014)

The correlation matrix contains the correlation coefficient of all pairs of questions. The majority value in the matrix is greater than 0.05. The correlation coefficients are less than 0.9 which indicates that there is no problem of singularity in the data. The determinant of the correlation matrix value is 0.00008 which is greater than the necessary value of 0.00001. That means multicollinearity is not a problem for this data. To summarise, all questions in the data correlate fairly well and none of the

correlation coefficients are particularly large, therefore, there is no need to consider eliminating any questions at this stage (Appendix E).

Table 6.39 below shows several very important parts of the output: the KMO measure of sampling adequacy and Bartlett's test of sphericity. The KMO measures the sampling adequacy which should be greater than 0.5 for satisfactory factor analysis. Kaiser (1974) recommends accepting values greater than 0.5 as being acceptable. The KMO index ranges from 0 to 1, with 0.50 considered suitable for factor analysis. The Bartlett's test should be significant ($p < .05$) for factor analysis to be suitable. Accordingly, the KMO value of the study is 0.726, and Bartlett's test is significant ($p < .001$), showing the appropriateness of the data for factor analysis.

Table 6.39: Kaiser-Meyer-Olkin and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.726
Bartlett's Test of Sphericity	Approx. Chi-Square	601.808
	Df	190
	Sig.	.000

(Source: Self compiled from Survey Questionnaire, 2014)

6.3.2. Factor extraction

Table 6.40 below lists the eigenvalues associated with each linear component (factor) before extraction, after extraction and after rotation. SPSS identified 20 linear components in the data set before extraction. This shows all the factors extractable from the analysis along with their eigenvalues, the percent of variance attributable to each factor, and the cumulative variance of the factor and the previous factors.

The eigenvalues associated with each factor represent the variance explained by that particular linear component and the output displays the eigenvalue in terms of the percentage of variance explained i.e. factor 1 explains 32.673% of the total variance. Here, the first few factors explain relatively large amounts of variance (especially factor 1) whereas subsequent factors explain only small amounts of variance. Using Kaiser's criterion, components that have an eigenvalue of 1 or more

are a base to determine how many components are to be extracted. Looking at the Total Variance Explained (see Table 6.40), only the first six components recorded eigenvalues above 1. These explain a total of 70.116% of the variance.

The values in the extraction sums of squared loadings of the table are the same as the values before extraction, except that the values for the discarded factors are ignored (hence, the table is blank after the sixth factor). In the final part of the table (labeled Rotation sums of squared loadings) the eigenvalues of the factors after rotation are displayed. The rotation has the effect of optimising the factor structure and one consequence for these data is that the relative importance of the six factors is equalised. Before rotation, factor 1 accounted for considerably more variance than the remaining five (32.673% compared to others), however, after extraction, it accounts for only 18.264% of variance compared to another percent (see Table 6.40).

Table 6.40: Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.535	32.673	32.673	6.535	32.673	32.673	3.653	18.264	18.264
2	1.937	9.687	42.361	1.937	9.687	42.361	3.089	15.443	33.707
3	1.745	8.727	51.088	1.745	8.727	51.088	2.591	12.955	46.662
4	1.556	7.778	58.866	1.556	7.778	58.866	1.695	8.475	55.137
5	1.162	5.812	64.678	1.162	5.812	64.678	1.539	7.693	62.831
6	1.088	5.438	70.116	1.088	5.438	70.116	1.457	7.285	70.116
7	.866	4.328	74.444						
8	.843	4.217	78.661						
9	.711	3.554	82.215						
10	.671	3.355	85.569						
11	.565	2.824	88.393						
12	.509	2.543	90.936						
13	.409	2.045	92.981						
14	.363	1.813	94.794						

15	.321	1.607	96.402						
16	.231	1.157	97.558						
17	.169	.847	98.405						
18	.138	.688	99.094						
19	.117	.584	99.678						
20	.064	.322	100.000						
Extraction Method: Principal Component Analysis.									

(Source: Self compiled from Survey Questionnaire, 2014)

The SPSS output in Table 6.41 below shows the communalities before and after extraction. Principal component analysis works on the initial assumption that all variance is common; therefore, before extract on the communalities are all 1. The communities in the column labeled *Extraction* reflect the common variance in the data structure. The communalities show how much of the variance in the variables has been accounted for by the extracted factors. For instance, over 87% of the variance in technology supply is accounted for while 50% of the variance in the macroeconomic uncertainty is accounted for. Put another way, 67.3% of the variance associated with a number of financial institutions is common or shared variance.

Table 6.41: Communalities

Variables	Initial	Extraction
Number of financial institutions	1.000	.673
Cost of financing i.e. interest rates	1.000	.627
Tax rate & administration	1.000	.690
Macroeconomic uncertainty e.g. inflation, exchange rate	1.000	.502
Cost of investment	1.000	.706
Research and development work	1.000	.846
Appropriate technology supply	1.000	.875
Transportation infrastructures	1.000	.660
Electric power	1.000	.538
Telecommunication service	1.000	.763
Water supply	1.000	.601

Air transport	1.000	.730
Port facilities	1.000	.737
Awareness works with investment laws	1.000	.710
Demand for your product	1.000	.723
Promotion medias for your product	1.000	.642
Pricing for your product	1.000	.844
Skilled and customer attractive labor force	1.000	.733
Raw materials needed	1.000	.760
Location to sell your product	1.000	.661
Extraction Method: Principal Component Analysis.		

(Source: Self compiled from Survey Questionnaire, 2014)

Table 6.42 below shows the component matrix before rotation. This matrix contains the loadings of each variable on each factor. By default, SPSS displays all loadings; however, the SPSS requested that all loadings less than 0.4 be suppressed or blocked in the output and so there are blank spaces for many of the loadings.

Table 6.42: Component matrix

Variables	Component					
	1	2	3	4	5	6
Awareness works with investment laws	.830					
Cost of financing i.e. interest rates	.749					
Telecommunication service	.727					
Port facilities	.719	-.401				
Appropriate technology supply	.684	.482				
Cost of investment	.679			.421		
Location to sell your product	.664					
Promotion medias for your product	.626					
Pricing for your product	.609					
Research and development work	.601	.595				
Raw materials needed	.577				-.564	
Water supply	.492	-.459				
Transportation infrastructures	.480					

Macroeconomic uncertainty e.g. inflation, exchange rate	.458					
Electric power	.465	-.519				
Skilled and customer attractive labor force	.465		-.614			
Air transport			.607			-.408
Number of financial institutions				.713		
Tax rate & administration					.555	
Demand for your product	.429	-.400				.462
Extraction Method: Principal Component Analysis.						
a. 6 components extracted.						

(Source: Self compiled from Survey Questionnaire, 2014)

6.3.3. Factor rotation

The next SPSS output, component matrix, shows the rotated component matrix (also called the rotated factor matrix in factor analysis) which is a matrix of the factor loadings for each variable onto each factor of rotated loadings of each of the items on the components. This matrix contains the same information as the component matrix in the SPSS output of Table 6.42, except that it is calculated after rotation. Comparing this matrix with the unrotated solution, most variables before rotation loaded highly onto the first factor and the remaining factors did not really get a look in. However, the rotation of the factor structure has six factors and variables load very highly onto only one factor. It shows the loadings of the 20 variables on the six factors extracted. The suppression of loadings less than 0.4 and ordering variables by loading size makes interpretation of the data considerably easier. The higher the absolute value of the loading, the more the factor contributes to the variables (see Table 6.43).

Table 6.43: Rotated component matrix

Variables	Component					
	1	2	3	4	5	6
Port facilities	.812					
Telecommunication service	.773					
Water supply	.694					
Transportation infrastructures	.654					
Electric power	.592					
Awareness works of investment laws	.489	.479	.432			
Research and development works		.878				
Appropriate technology supply		.878				
Raw materials needed		.697				
Cost of financing i.e. interest rates	.422	.507				
Skilled and customer attractive labor force			.816			
Pricing for your product			.641			.490
Location to sell your product			.598	.413		
Promotion medias for your product			.484			
Number of financial institutions				.800		
Cost of investment		.405	.469	.520		
Demand for your product					.722	
Air transport	.462				-.616	
Macroeconomic uncertainty e.g. inflation, exchange rate					.576	
Tax rate & administration						.803
Extraction Method: Principal Component Analysis.						
Rotation Method: Varimax with Kaiser Normalisation.						
a. Rotation converged in 9 iterations.						

(Source: Self compiled from Survey Questionnaire, 2014)

The next step is to look at the content of questions that load onto the same factor to try and identify common themes. The questions that load highly on factor 1 seem to all relate to port facilities, telecommunication services, water supply, transport infrastructure and electric power factors. The two questions that load highly on factor 2 all seem to relate to research and development works and appropriate technology

supply. The question that loads highly on factor 3 seems to be a skilled and customer attractive labor force demanded by investment activities. The questions that load highly on factors 4, 5 and 6 are the availability of sufficient numbers of financial institutions, a demand for their product in the market, and tax rate and administration problems respectively.

This analysis shows that various problems exist that hinder the operation of private investors. The main one concerns infrastructure facilities. The second is problems related to technological issues and this is followed by a lack of further development through the support of research and new innovated technologies. Other important problems are economic and financial factors, location concerns, and challenges with the market for outputs from the production phase.

6.4. Summary of results

The major objective of the study was to identify the determinants of PIMS in the State of Tigray. The study results have mainly focused on the influence of independent variables on the dependent variables. The dependent variables were respondents from all statuses and they could be either in the started group (implementation and operation statuses) or non-started group (pre-implementation status). The independent variables were level of education, investment area, credit access, interest rate, access to infrastructure facilities, land access, the judicial system, bureaucratic red tape, corruption, investment incentives, the risk of political instability, and investment location. The data was collected from 259 private investors that are invested in the manufacturing sector. These respondents were divided into pre-implementation (125), implementation (72) and operation (62) statuses. For the descriptive analysis, SPSS software was used to analyse the data. For the econometric analysis of the study, the duration model was used to quantify the impact of independent variables on the dependent variables.

According to the descriptive analysis, most of the private investors were delayed from proceeding through the status levels because of access to credit, the judicial system, bureaucratic red tape, and corruption. The chi-square statistic value result

showed that level of education, access to credit, infrastructure facilities, bureaucratic red tape, corruption, risks of political instabilities, and investment locations are significant, indicating that the type of status group found had a significant effect on whether an investor would delay in the manufacturing sector. This means that the level of ISD varies within the type of groups due to the above stated variables. However, investment area, interest rate, land access, the judicial system, and investment incentives are insignificant.

According to the duration model, in the entire private investors, those investment areas in which investors are less involved are more delayed than those which have a higher number of investors. Infrastructure facilities and the judicial system had a significant and negative influence on the progress of investment status. However, interest rate and investment location boosted the progress of investment status.

According to the factor analysis results, macroeconomic uncertainty has the highest mean value in the production stage. In the analysis, the first six components recorded eigenvalues above 1. The rotated component matrix result shows most of the items load quite strongly on the six components. Finally, variables with a higher value of loading are infrastructure, technology, and economic and financial factors that limit the operation of private investors in the manufacturing sector in the study area.

CHAPTER SEVEN: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

In this chapter, the key points of this research are discussed and conclusions drawn from all information collected. Recommendations are also made for each of the three investment status groups.

7.1. Discussions on private investment status

7.1.1. Background

Investment encompasses any reasonable activity or asset, that is, any form of investment which adds to the existing capital formation of a country. Economists usually reserve the term *investment* for transactions that increase the magnitude of *real aggregate wealth* in the economy. This includes mainly the purchase (or production) of new, real and durable assets such as factories and machines (Bayai & Nyangara, 2013). Investment is a very important determinant of the long-term improvement of an economy's competitiveness, and it plays an important role in an economy by increasing a country's productive capacity, creating employment opportunities, promoting technical progress and causing serious fluctuations to economic activities, thereby increasing private investment.

Private investment is a major drive of the economic growth of a country and has a strong, favorable effect on growth. Generally, it is a powerful means of innovation, economic growth and poverty reduction. It creates job opportunities, generates revenue and increases the income of the poor, so it is very important for an economy to increase its investment in the private sector. Despite all this, in many developing countries including Ethiopia, investment rates are low, incentives for innovation are insufficient and even returns on investment are not very predictable. These are just a few of the causes of slow growth in a developing economy. In addition, the slow progress of new business and the complicating investment factors discussed above, hinders the growth of investment in an economy.

The purpose of this study was to investigate the determining factors of private investment status in the manufacturing sector in the State of Tigray, Ethiopia. Its main objective was to identify the major variables that affect the ISD and the constraints on operations of private investors that are already in production phase in the manufacturing sector. Both quantitative and qualitative primary data was used, and relevant secondary data was properly reviewed. For the primary data, a questionnaire was designed, pre-tested and then employed. The respondents are 259 private investors in the manufacturing sector and include 18 females. In addition, in-depth interviews and FGDs were conducted and the information generated here was used as the main source for the qualitative data. The respondents were from the six zones in the State of Tigray. The study also included descriptive and econometric analysis. In the descriptive and econometric analyses, explanatory variables were used. In the case of the descriptive analysis, all the explanatory variables were analysed. However, in the case of econometric analysis, only the variables significant to the ISD were analysed. The following discussion focuses on the descriptive and econometric analysis.

Private investment has three statuses: pre-implementation, implementation and operation. In the survey study, the status distribution of the sample private investors in the manufacturing sector during the data collection period was: 125 (48%) in the pre-implementation status, 72 (28%) in the implementation status and 62 (24%) in operation status. This shows that most of the private investors in the manufacturing sector were in the pre-implementation status. This supports the known reality that 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 standard period to proceed from pre-implementation status to implementation status is six months; the standard period to proceed from implementation status to operation status is 30 months. After this, an investor should receive their investment permit from the investment office and start their operation status within 36 months. For this study purpose, private investors are divided into non-started and started groups based on their investment status. Investors who have not yet started any

implementation activities (pre-implementation status) are called the non-started group, whereas those investors who have started with investment activities and commenced operation are called the started group. The second group includes investors in the implementation and operation statuses.

7.1.2. Discussion on the determinants of all statuses of private investors

Concerning **gender**, around 93% respondents of the private investors in the study area were males. This percentage is more or less constant between the started and non-started groups of investment status. One can conclude therefore that the private investor groups in the manufacturing sector in the State of Tigray are owned and dominated by males. Concerning **age**, the survey concluded that around 92% of the respondents were above 30 years of age. This percentage is the same in the started and non-started groups of status. One can conclude therefore that all investors were adults and most were mature adults.

According to the descriptive analysis, about 80% of the private investors had a primary and secondary school **educational level** but the status progress of the majority of these was delayed. The highest ratio of ISD was in the primary and secondary school educational levels, next was the diploma and above educational level. In general, investors with more than a secondary school level of education were proceeding with their investment status on time. The chi-square test value indicates a statistically insignificant difference (less than 5%) between the two status groups with regard to delayed rates due to educational level. Moreover, on average, the proportion of graduates delayed in both the non-started and started groups was less than the number of investors with only a high school educational level (Appendix A). This result is consistent with findings by Bigsten and Soderbom (2006) that showed that manufacturing sectors in Africa are positively correlated with education. Similarly, empirical studies by Baye et al. (2005) also show that an investor can more easily make a good investment if he/she has a higher formal education. The result of the duration model of this study shows that educational level is insignificant for the ISD.

Out of the total delayed respondents in the study, about 29% of the private investors were from the food industries **area of investment**; this group was followed by the non-metallic mineral products (15%) and basic metals (11%) industries. Private investors in both the non-started and started groups were similarly delayed and the percentages were markedly higher than those in the other industries examined. The chi-square statistic value also shows that there is no statistically significant difference in the rate of delay due to investment areas between the two status groups. This result is consistent with the empirical studies of Baye et al. (2005) which showed that investment areas make no difference to delays. The econometric result shows that some of the industries (e.g. textile and textile products, leather and leather products, paper and paper products, chemical and chemical products, computer, electronic and optical products, and electrical products) were delayed from beginning operations within the specified time periods. Thus, the research null hypothesis is rejected and the alternative hypothesis which says, "*All private investment areas of the manufacturing sectors are, more likely, not equally subject to investment status delay*" is accepted according to the econometric statistical results.

Concerning private investors' finance, 96% of the respondents explained that the source of finance for their investment activities was from their own contribution. This result was consistent with previous studies undertaken in Kenya, which found that private savings positively affect the change in private investment in the short run (Olweny & Chiluwe, 2012). Majeed and Khan (2008) also suggest that sources of finance are significant and positive determinants of private investment. In addition, nearly half of the respondents of the study reported that loans from formal financial institutions like banks were an added source of finance for their investment activities. However, 97% of the respondents explained that shared contributions and informal financial sources were not used as a source of finance for their investment activities. This result is similar to Workie's (1996) which argues that own contributions play a dominant role and says that the next important source of finance for private investors is formal financial institutions (like banks).

According to the descriptive analysis, around two-thirds of the respondents stated that they requested a loan from formal financial institutions. 170 private investors requested a loan (see Table 6.9 above) and three-fourths of the respondents that

delayed were affected because of a lack of **access to credit**. Private investors found in the non-started group were more delayed than those in the started group because of issues regarding access to credit from banks. The major problems in this regard was shown to be bank paperwork requirements or delays in loan delivery and inadequate credit. The chi-square test value also indicates that the difference between the status groups with regard to access to credit was statistically significant at less than 1% level. This study result is consistent with Batra et al. (2003) who found that as the credit access decreases, investors become more discouraged and hesitant to invest. However, this result differs from Munir et al. (2010) and Getachew's (1997) conclusions on financing. Nevertheless, the duration model result of this study shows that access to credit has an insignificant impact on the ISD at 95% of confidence level; however, if this level decreases, the significance of the variable becomes similar to the descriptive result.

In the FGDs, private investors stated that they experience problems getting adequate and timely bank loans for their investment from financial institutions. In addition, banks request high collateral requirements and do not treat investors equally when assessing loan applications. During the interview with the loan officers of the Commercial Bank of Ethiopia, the reasons cited for problems with credit access were a lack of sufficient budget being allocated by the top management of the commercial bank of Ethiopia. This was true even if the allocated budget was prioritised by the government to the selected sectors and depended on the actual situations. The bank officers felt that investors demand more finance than they need so as to be able to divert the money into other businesses they own. In addition to this, increasing inflation in the market, a lack of knowledge (traditional investors) and insufficient information during assessments by bank experts were the major reasons for inadequate credit being available to private investors.

According to the descriptive analysis, only 23% of the total delayed respondents were affected by the **interest rate** paid to banks. The started and non-started groups were equally affected by this (same percentage as above). This shows that most of the private investors in the manufacturing sector were not affected by the interest rate level set by financial institutions for bank credit. The value of chi-square statistic confirms that the difference in delay rate between the started and non-started groups

of private investors with regard to interest rate was statistically insignificant. The duration model result showed that interest rates have a significant and positive effect on the investment status progress of the private investors at 1% significant level. So, this result is consistent with the McKinnon (1973) and Shaw's (1973) theories which suggest that there could be a positive relationship between investment and interest rate. Frimpong and Marbuah (2010) and Getachew (1997) concluded that the user cost of capital, proxied by the interest rate, has a significant positive impact on private investment and this is consistent with this study model. The null hypothesis of the study, "*The interest rate on bank loans has a negative impact on the investment status delay of private investors in the manufacturing sector*" is not accepted.

As per the descriptive result of the averaged public services, about 18% of the total respondents that delayed reported that **access to infrastructure facilities** affected their ISD in the manufacturing sector. This shows that most of the respondents that delayed were not influenced by the availability of infrastructure facilities. The proportion of investors affected by access to infrastructure facilities for started group was slightly smaller than that of the non-started group. The chi-square statistic value also indicated that there is a significant difference between the two status groups at 1% level. To summarise, the non-started group of private investors delayed because of infrastructure facilities is less than the started group. This indicates that infrastructure facilities did contribute to the ability of most of the private investors to proceed early to their next investment status.

This result is consistent with Baye et al. (2005) who state that infrastructure facilities increase private investment and encourage people to invest more. The duration model result in this study, however, indicates that access to infrastructure facilities has a significant and negative effect on investment status progress at 5% level of significance. This indicates that a decrease in the facilities of infrastructure results in a delay in the progress of investment. The fact shows that infrastructure facilities like roads, telephone lines and electricity is very limited in the State of Tigray and that it does affect the delay. This result is similar to Soneta et al. (2012), Batra et al. (2003) and Getachew (2007) who showed that investment in infrastructure is inversely proportional to the growth of the manufacturing sector in Pakistan. Therefore, according to the econometric analysis result, the null hypothesis "*Access of*

infrastructure facilities affect negatively on the investment status delay of private investors in the manufacturing sector” is not rejected. During the FGDs, most of the private investors reported that the availability of electric power, telephone communications, water supply and transport facilities are major obstacles which affect their status progress. In addition, the interviews with the TIO experts and investors revealed that a lack of electricity and problems with transformers, poles and electric power meters are the main problems for private investors in this regard.

The descriptive analysis shows that around one-third of the respondents that delayed was because of difficulties with **access to land** for their investment projects. The major problems in this regard are complications arising from bureaucratic procedures and the land tenure system. Significantly though, two-thirds of the total that delayed did not have the problems with access to land. This result is similar to the studies on industries in Ethiopia by the Embassy of Japan (2008) which found that investors in Ethiopia consider the land system advantageous since the government of Ethiopia leases the land for a significantly lower price and for long terms. To summarise, most of the private investors found in both types of status groups did not delay because of problem with access to land. The chi-square test result from the survey also shows that there is no significant difference in progress between the two status groups regarding this variable. The duration model result also showed that land access has an insignificant effect on the ISD.

According to the descriptive analysis, about 57% of the respondents that delayed were affected due by the inefficiency of the **judicial system**. The major shortcomings here are the inability to enforce rulings, a lack of independence of employees, corruption, and delayed court rulings. The private investors in both the non-started and started groups were equally delayed by the judicial system. The chi-square test value considering the judicial system problems indicated that the difference between non-started and started groups was not significant. In the discussions with private investors, the legal system of the state was seen as not being robust enough to solve their problems. They added that the competence of the employees in the legal system was not sufficient for them to implement their responsibilities properly. Likewise, the duration model result shows that the judicial system has a significant and negative impact on the ISD. This is similar to Weder’s

(1998) study. Therefore, the null hypothesis, “*The judicial system has a negative effect on the investment status delay of private investors in the manufacturing sector*” is not rejected.

The descriptive analysis shows that about 82% of the respondents that delayed were subjected to delay due to **bureaucratic red tape** in securing public services. Generally it is understood that securing public services takes a long time because of the bureaucratic red tape required by private investors in the state. The bank loan process and utility service procedures are especially involved and these are the worst problems for the ISD. This implies that the existence of bureaucratic red tape hinders the progress of private investment. Most of the private investors found in the non-started group were delayed by bureaucratic red tape, more so than the started group. The chi-square statistic test value also showed that there is a significant difference between the two status groups at 1% level. Private investors in the FGDs also described that they struggled to get investment permits and licenses because of the bureaucratic red tape. This shows that the public services delay has a negative influence on the investment status progress of the private investors. This finding is consistent with Seruvatu and Jayaraman (2001) and Baye et al. (2005) and shows that bureaucratic red tape affects private investment negatively. But, the duration model result in this study indicates that bureaucratic red tape has no impact on the ISD and this is because of the 95% of confidence level in the statistics. This shows that these two variables may have a relationship at less than the 95% of confidence level.

According to the descriptive analysis, more than half of the respondents that delayed their investment status said that the private investors’ perception of **corruption** in their state negatively affects the progress of the investment status groups. That is, the level of corruption in connection to public services (like a bank loans, investment permits and license, municipal works and infrastructure facilities) impacts the ISD. Overall, when found in the non-started group most private investors would delay, but when found in the started group most private investors would not delay because of the impact of corruption. The survey result shows that corruption is statistically significant at a 1% level. The chi-square statistic value indicates that there is a significant difference between the two status groups. That is, the impact of corruption

varies within the status groups. Therefore, according to the descriptive analysis, corruption has a negative impact on the investment status progress of the private investors in the manufacturing sector. This finding is consistent with the study by Everhart and Sumlinski (2002) which evidenced that if a corrupt country raises the level of public investment, the productivity of the new public investment put in place is low, and private investment falls. The studies by Bakare (2011), Asiedu and Freeman (2009) and Basar and Zyck (2012) show that corruption hampers domestic investment and this is consistent with the above findings.

The Corruption Perception Index ranks countries according to the perception of corruption in the public sector on a scale from 0 (highly corrupt) to 100 (very clean). In Transparency International's 2015 Corruption Perception Index, Ethiopia ranked 103 out of 177 rated countries and according to *Doing Business in Ethiopia, Commercial Guide for U.S. Companies* (2015), Ethiopia ranks 132th out of 189 rated countries in the *World Bank's Ease of Doing Business Report*. Contradictorily, the *UN Investment Guide to Ethiopia* (2004) asserts that routine bureaucratic corruption is virtually non-existent in Ethiopia. The guide adds that bureaucratic delays certainly exist but are not devices by which officials seek bribes. The econometric result of this study shows that corruption had an insignificant impact on the progress of the investment status at 95% of confidence level. This result was consistent with the study made in Afghanistan on the impact of corruption on investment and found that corruption was not a severe problem across Afghanistan (Basar & Zyck, 2012).

Concerning the impact of **investment incentives**, about 89% of the total whose investments were delayed were of the opinion that investment incentives provided by the government encouraged investment status promotion. The major investment incentives that promote private investors are a low lease price of land and free custom duty. Only 11% of the respondents that delayed were affected by the investment incentives. A similar proportion of private investors delayed because of investment incentives were found in both types of the status group. The chi-square test result shows that the feelings of sample respondents of the two status groups to this question were the same. This implies that investment incentives encourage more investors to proceed with their status. The study by Baye et al. (2005) showed that investment incentives to investors encourages private investment and this is

consistent with this study. This result is inconsistent with The IMF (Chua, 1995) which concluded that tax incentives do not stimulate investment significantly. This study added that firm surveys routinely show incentives provided by governments are not particularly important in determining the decision to invest. The duration model result of all respondents also showed that investment incentives have an insignificant impact on the ISD.

According to the descriptive analysis, about 84% of the total delayed private investors replied that **political instability risks** did not affect their investment status in the State of Tigray. This is consistent with the findings of *World Bank's Doing Business in Ethiopia 2012* which stated that Ethiopia has been relatively stable and secure for investors. In addition to this, the study by Naa-Idar et al. (2012) concluded that the influence of political stability on private investment recorded a positive sign in the short run and that the long run periods are significant. The remaining 16% of the total delayed private investors found political instability to be a problem for ISD. Though the delay rate was small in both groups, private investors found in the non-started group were highly affected by the political instability risk when compared with the started group. The chi-square test result also shows that there was a significant difference between the two status groups at 5% level. Besides, the duration model result of this study also disclosed that political instability risks have an insignificant impact on the ISD. The study by Busari and Amaghionyeodiwe (2007) which indicated that political instability does not have any significant direct impact on private investment is consistent with the findings of this study.

According to the interview with investors, the major political risks are border conflict and the unnecessary interference of public offices. This is consistent with the findings of Mamo (2008) which concludes that during the period of the Ethio-Eritrea conflict, the number of investors registered to invest in Ethiopia decreased substantially. Moreover, the border conflict significantly impeded investment flows to regions neighboring Eritrea like the State of Tigray. After the border conflict war was resolved, investment began to increase significantly.

The descriptive result reveals that about 97% of the respondents that delayed were not negatively affected by their **investment location**. Only 3% of these investors

were delayed and this was due to long distances of travel for raw materials. To summarise, even though there is little difference between the statuses groups, most of the private investors in both types of the status groups that they would not delay because of location problems. The chi-square statistic result indicates that there was a significant difference between the two status groups at 1% significance level. The duration model result also shows that investment location is significantly positive to private investment at 1% level of significance. This is similar to the study made by Abuka et al. (2006). As a result, the research null hypothesis which states, “*The investment location of private investors relates positively to investment status delay in the manufacturing sector*” is not rejected.

7.1.3. Discussion of the determinants of the started group investors

Started group of investors includes the implementation and operation status of private investment. The number of investors in the implementation status are 72 (28% of the total respondents) and in the operation status are 62 (24% of the total). About 93% of the private investors from this group are males and around 91% of are older than 30 years of age.

Out of the respondents found in the started group, 80% of the total that delayed had only a primary and secondary school **educational level**. The remaining 20% of the group that delayed had at least a diploma. In other words, there are more private investors with a low level of educational in the started but delayed group. The duration model result confirms that the level of education has an insignificant impact on ISD.

From the private investors found in the started group, 55% of the total that delayed were found in the food, other non-metallic mineral products and basic metals industries. A similar number of respondents in these investment areas fall into the started and non-started groups. The highest ratio (19%) of private investors found in started group was invested in the food industry; the rest were invested in other 16 types of manufacturing industries (see Appendix B). In addition, by setting the food industry as a reference category, the duration model result shows industries like beverage, leather and leather products, wood, and vehicles, trailers and semi-trailers

take a longer time to begin operation in the started group. From this it can be concluded that the null hypothesis (H_0) be rejected and the alternative hypothesis “*All private investment areas of the manufacturing sectors are, more likely, not equally subject to investment status delay*” is accepted.

Out of the private investors found in the started group who requested bank loans, about 66% of the total that delayed their status were negatively affected because of a lack of **access to credit**. In other words, private investors found in the started group would delay because of credit access problems less than those in the non-started. However, the econometric result indicates that access to credit has an insignificant impact on the delay of the started group at 95% of confidence level. But, in the started group, about 78% of the total respondents that delayed were not affected by the level of the **interest rate** set by financial institutions. To summarise, most private investors found in this group would not delay any more than the non-started group because of the interest rate. In the same way, the econometric result confirms that interest rate has insignificant influence on the started group ISD.

Out of the total private investors in the started group that delayed, 84% of the respondents were not affected by **infrastructure facilities**. Also, the delay rate of this group is less than that of the non-started group. However, the econometric result confirms infrastructure facilities have a significant and negative influence on the progress of the started group of investment status at 1% significant level. Thus the null hypothesis (H_0) is not rejected. About 71% of the respondents in the started group were not affected by **land access** for their investment activities. To summarise, most of the private investors found in this group did not delay due to a problem with access to land. The duration model result also showed that access to land had no significant impact on the ISD.

In this group, nearly half of the total number that delayed were affected by the **judicial system** of the state and were thus unable to proceed to the next status. Overall, most of the private investors found in this group were equally delayed. The econometric result confirms that the judicial system had an insignificant impact on the started group of ISD at 95% of confidence level. Additionally, 77% of the respondents that delayed in the started group were affected by **bureaucratic red**

tape and had problems securing public services. This impeded the investment progress in the manufacturing sector. The delay measured in the private investors that made up the started group was less than the delay of the non-started group. As per the econometric result, there was an insignificant influence on the status progress of the started group of investors at 95% of confidence level.

The perception of nearly half of the total respondents in the started group felt that the level of **corruption** was a contributing fact to the delays of their projects. The started group of investors did not delay more than the non-started group. The duration model result confirms that corruption has an insignificant impact on the ISD of the started group of private investors.

In this status group, about 88% of the total respondents that delayed reported that their firms did not limit their investment progress due to a lack of benefits rendered by the government **investment incentives**. To summarise, most of the private investors found in the started group did not delay due to the problem of investment incentives. However, the duration model showed that investment incentives negatively influenced the investment progress of this group at a 10% level of significance. The coefficient of investment incentives was negatively and significantly related to the dependent variable, thus the null hypothesis (H_0) is rejected and the alternative hypothesis "*Investment incentives to private investors negatively influence investment status delay in the manufacturing sector*" is accepted. This implies that the existence of incentive problems discourage investment progress in this group. At this stage the construction and installation of machines and equipment is important and the incentives process of government officials, especially in the form of duty-free custom, is not as speedy as that required by the private investor.

92% of the total delayed respondents said that there was no risk related to **political instability** in the state and that this did not create a delay for started group of investment. But, the remaining private investors replied that there were political instability risks because of border conflict and the unnecessary interference of public offices in the state which hindered operations. In general, most of the private investors found in the started group would not delay because of the problem of risk of political instability. This proves also that the started group delayed less when

compared with the non-started group in this regard. In addition, the duration model shows that political instability risks have no significant influence over the progress of the started group of private investors.

Finally, around 95% of the started group that were delayed did not feel that their investment status progress was affected by **investment location** in the state. But the remaining respondents reported that long distances from raw materials was a hindrance that could be related to their investment location. On average, the proportion of delayed investors in the started group is larger than the proportion of delayed investors in the non-started group. The duration model confirmed that the investment location has a significant and positive impact on the ISD at 1% level of significance, thus the null hypothesis (H_0) is not rejected.

7.1.4. Discussion of the determinants of non-started group investors

The total number of respondents in this group is 125 (48%) and it includes those in the pre-implementation status. Of these investors, about 94% are males and 93% are above 30 years of age.

The description analysis result shows that out of the respondents found in the non-started group (pre-implementation status), 80% of the total that delayed were found to be in the primary and secondary schools of **educational level**. The delay rate of the non-started group with a secondary school education is greater than that of the started group. In addition, the duration model showed that the level of education has an insignificant impact on the progress of investment status. This indicates that educational levels have no impact on the progress of investment status of private investors found in the pre-implementation status.

Most of the respondents in the pre-implementation status invested in the food, other non-metallic mineral products, and basic metals industries were more delayed than the other industries. According to the econometric result and taking the food industry as a reference category, the investment types like wood products, printing, basic pharmaceutical products and preparations, and electrical products took more time to proceed from to the started group of investment status. Thus, the null hypothesis of

this study is rejected and the alternative hypothesis “*All private investment areas of the manufacturing sectors are, more likely, not equally subject to investment status delay*” is accepted. This shows a high ISD rate in the investment areas having fewer investors than those with a large proportion of private investors.

The source of finance for the non-started group was their own contributions; the next important source was a bank loan and two-thirds of them had requested one from the financial institutions. However, 80% of these applicants and 100% of those that delayed were affected by a lack of access to bank credit. This implies that the unavailability of **access to credit** had a negative influence on the ISD, i.e. it boosted the ISD. Private investors in the manufacturing sector were more delayed in the non-started than the started group. However, the econometric result shows that access to credit has a insignificant effect on the delay of this group of investors at a 95% of confidence level.

Around three-fourths of the total delayed respondents who had requested loans reported that the **interest rate** paid to financial institutions did not influence private investors. Around one-fourth felt that their progress was affected by the bank’s interest rate. The econometric result shows that the interest rate has a positive and significant impact on the investment status progress at a 1% level of significance. Thus the null hypothesis (H_01) is not accepted but the alternative hypothesis “*The interest rate of bank loans has a positive impact on the investment status delay of private investors in the manufacturing sector*” is accepted.

On average, 82% of the total that delayed in the pre-implementation status were not affected by a lack of access to **infrastructure facilities**. Whereas, only 18% were influenced by this lack and this was particularly due to problems with electric power and municipal facilities. This indicates that most of the private investors were not affected by problems with infrastructure facilities. On the other hand, the duration model result reported that infrastructure facilities was negative and significant at a 1% level of significance related to the ISD, thus the null hypothesis (H_00) is not rejected. This implies that difficulties in access to infrastructure facilities highly boosts the delay rate of private investors in the non-started group.

In this group, the status of 64% of the total delayed respondents was not influenced by problems with **access to land**. To summarise, most of the private investors found in this group did not delay due to such problems. The econometric result also reported that access to land has an insignificant influence on the ISD. This implies that access to land was not a factor for the ISD of this group of private investors.

About 62% of the total respondents that delayed in this group were affected by the inefficiency of the **judicial system**. However, the econometric result showed that the judicial system has an insignificant impact on the ISD at a 95% confidence level.

Out of the respondents of the non-started group, about 85% of the total that delayed were subjected to problems in getting public services because of **bureaucratic red tape**. According to this group responses, there was a delay in getting a bank loan and utility services like water, electric power and telephone services, and this delay could be directly attributed to bureaucratic red tape. In general, most of the private investors found in the non-started group would delay more because of this variable than those in the started group. The duration model result shows that bureaucratic red tape has an insignificant influence on the ISD at a 95% confidence level.

About 60% of the total that delayed in this group replied that the level of **corruption** in getting public services had an impact on their ISD. That is, when private investors were found in the non-started group, they would delay more because of corruption. Overall, the proportion of non-started group delayed was larger than that in the started group. The chi-square statistic result also indicated that there is a difference between the two status groups with regard to corruption, and this was found to be statistically significant. However, the econometric result concluded that this variable is insignificant for the non-started group at a 95% confidence level.

Private investors in general benefited from the **investment incentives** provided by the government. Consequently, about 90% of the non-started group were not delayed because of investment incentives. To summarise, most of the private investors found in this group would not delay due to the problems with investment incentives. The econometric result showed also that it had an insignificant impact at a 95% confidence level.

Around 80% of the non-started group were not influenced by risks associated with **political instability** in the state. To summarise, most of the private investors found in this group did not delay, however, this proportion is greater than the proportion in the started group. The econometric result also confirmed that the risk of political instability has an insignificant influence on the delay of the progress of investment status.

Finally, the progress of about 98% of the private investors in the non-started group was not constrained due to problems with **investment location**. Generally, most of the private investors found in this group would not delay more than the started group. The duration model also showed that investment location has a significant and positive impact on this group's status progress, thus the null hypothesis (H_01) is not rejected.

Table 7.1 below presents a summary of the results of the hypotheses tests, and their associated decisions from the econometric model results of the study. Accordingly, the null hypotheses of the independent variables for all private investors was rejected for these variables: investment areas, access to credit, interest rates, access to infrastructure facilities, the judicial system, bureaucratic red tape, corruption and investment location. The remaining independent variables were insignificant for the decision. In the case of the started and non-started groups, the results of the variables did however start to differ.

Table 7.1: Hypotheses tests and decisions

Independent Variables	Null Hypotheses (H_0)	Entire private investors	Started group	Non-started group
<i>Educational level</i>	<i>The more the private investor is educated, the less is the probability of investment status delay.</i>	<i>Insignificant</i>	<i>Insignificant</i>	<i>Insignificant</i>
<i>Investment areas</i>	<i>All private investment areas of the manufacturing sectors are, more likely, equally subject to investment status delay.</i>	<i>Rejected</i>	<i>Rejected</i>	<i>Rejected</i>
<i>Access to bank loan</i>	<i>There will be no negative influence of access to a bank loan on the investment status delay of private investors in the manufacturing sector.</i>	<i>Insignificant</i>	<i>Insignificant</i>	<i>Insignificant</i>
<i>Interest rate</i>	<i>The interest rate on bank loans has a negative impact on the investment status delay of private investors in the manufacturing sector.</i>	<i>Rejected</i>	<i>Insignificant</i>	<i>Rejected</i>
<i>Access to infrastructure facilities</i>	<i>Access to infrastructure facilities negatively affects the investment status delay of private investors in the manufacturing sector.</i>	<i>Accepted</i>	<i>Accepted</i>	<i>Accepted</i>
<i>Access to land</i>	<i>Access to land will negatively affect the investment status delay of private investors in the manufacturing sector.</i>	<i>Insignificant</i>	<i>Insignificant</i>	<i>Insignificant</i>
<i>Judicial system</i>	<i>Judicial system affects negatively the investment status delay of private investor in the manufacturing sector.</i>	<i>Accepted</i>	<i>Insignificant</i>	<i>Insignificant</i>
<i>Bureaucratic red tape</i>	<i>Public services delays due to bureaucratic red tape has a negative impact on the investment status delay of private investors in the manufacturing sector.</i>	<i>Insignificant</i>	<i>Insignificant</i>	<i>Insignificant</i>
<i>Corruption</i>	<i>Investment status delay is negatively affected by the level of private investors' perception of corruption in the manufacturing sector.</i>	<i>Insignificant</i>	<i>Insignificant</i>	<i>Insignificant</i>
<i>Investment incentives</i>	<i>Investment incentives for private investors positively influences investment status delays in the manufacturing sector.</i>	<i>Insignificant</i>	<i>Rejected</i>	<i>Insignificant</i>
<i>Political instability risks</i>	<i>There will be no negative impact from political instability risks on the investment status delay of private investors in the manufacturing sector.</i>	<i>Insignificant</i>	<i>Insignificant</i>	<i>Insignificant</i>
<i>Investment location</i>	<i>The investment location of private investors relates positively to investment status delay in the manufacturing sector</i>	<i>Accepted</i>	<i>Accepted</i>	<i>Accepted</i>

(Source: Self compiled from Survey Questionnaire, 2014)

7.1.5. Discussion of the constraints of private investors

A survey study of the private investors in the production phase was analysed according to operational constraints and considering the economic and financial, technological, infrastructural, political, regulatory, social, environmental, marketing and location factors of private investment in manufacturing sector found in the State of Tigray.

Accordingly, the factor analysis result shows that the following categories have the highest mean value: macroeconomic uncertainty (i.e. exchange rate, inflation, etc.), problems with raw materials, tax rate and administration issues, and electric power shortages. The component matrix results also report that infrastructural, technological, and economic and financial factors are the highest absolute values of the loading factor. This finding is similar to the study by Abuka et.al. (2006) which concluded that water supply constrains the operation and growth of firms. This result is consistent with Workie (1996) who concluded that electric power is the leading constraint for the operations of private investment.

7.2. Conclusions on private investment status

This study has investigated the factors influencing or determining private investment delays in each investment status, and the operational constraints of private investors in the manufacturing sector in the State of Tigray. The study was conducted based on the data collected from a sample private investors in the manufacturing sector operating in the State of Tigray. Thereafter, both descriptive and econometric analyses were used for analytical purposes.

For the descriptive analysis, SPSS software was used to analyse the influence of independent variables on the private ISD by calculating the frequency and percentage of the investors' status groups and chi-square test results. In addition, factor analysis was used to analyse the constraining factors for operations of private investors in the manufacturing sector. Econometric software called Stata was employed to estimate the duration model and identify factors influencing the delay of

the investment status. The duration model was chosen because, unlike other models, it can reveal the probability of ISD.

7.2.1. Conclusions applicable to all private investment statuses

1. Although the level of education of private investors had a varied influence for the ISD, **level of education** has a statistically insignificant impact on the progress of investment status in the manufacturing sector. To conclude, the level of education insignificantly influences the private investors in the manufacturing sector. That is, the variable of the level of education has no effect on private investment delay in the State of Tigray. That means that a low or high level of education will not affect the progress of private investment status. This conclusion is valid irrespective of whether the private investors are found in the started or non-started status groups.
2. As per the econometric result, manufacturing industries with fewer investors were delayed more than industries with a higher number of investors. To conclude, the type of **investment area** of private investors significantly influences the private investors' ISD. This variable therefore has a negative and significant effect on private ISD. It means that, if an investment area has a decreased investor involvement, the ISD will increase and vice versa. This shows that investors select investment areas that have fewer complications associated with progress. This conclusion applies to private investors found in both the started and non-started status groups.
3. Concerning the **source of finance**, most private investors used their own money to finance their investment; the second biggest source was a bank loan. All respondents stated that the source of finance from shared contributions and informal sources was an insignificant factor in their investment. As per the descriptive analysis, most of the private investors whose progress was delayed, were influenced by access to credit. This means that **access to credit** contributes to the ISD of private investors in this study sector. This is because all the investors expect to get a bank loan for the purchase of construction materials and machinery from outside. However, as per the econometric statistical

analysis, the variable of access to credit has no effect on the ISD. This means that the decrease in access to credit by financial institutions did not create ISD.

4. Most of the respondents reported that the **interest rates** of bank loans were not a cause for the delay of their progress in investment status, especially when compared to the benefits of the loan. Access to credit was considered the most important factor for the progress of private investment and the interest rate paid to the lender was less important.
5. The variable of **access to infrastructure facilities** affects the private investment status significantly, but it has a negative relationship. This means that most of the delayed private investors were influenced in their progress of investment status by a lack of efficient access to infrastructure facilities. Therefore, access to infrastructure facilities significantly and negatively influences private investors' ISD.
6. Based on the analyses results, most of the private investors had no problems with **access to land** for their investments. Considering the total number of respondents it was clear that land access had no impact on their investment status. Therefore, the variable of access to land has a positive impact on the progress of private investment status in the State of Tigray. This conclusion applies to private investors found in both the started and non-started status groups.
7. Most of the private investors who delayed were constrained in their investment status progress due to inefficiencies in the **judicial system** in the state. The variable of the judicial system has a significant and negative impact on the investment status progress. This means that the inefficiency of the judicial system results in the ISD of private investors in the manufacturing sector.
8. The investment of private investors was delayed because of problems in getting public services due to **bureaucratic red tape**. To conclude, the variable of bureaucratic red tape has a negative influence on private ISD, but the

econometric result shows this factor to be insignificant. This conclusion is applicable to both two status groups.

9. On average, the perception of private investors on the level of **corruption** experienced when trying to secure public services in the state, is that it delays their investment status. The study concludes that corruption influences private investors and affects their status group significantly.
10. **Investment incentives** did not impact the progress of most of the private investors, even those who are delayed. The study concludes that, irrespective of the status group, the investment incentives in the manufacturing sector did not significantly influence their progress.
11. Most of the private investors were not delayed because of the risk of **political instability** in the state. This conclusion applies to private investors found in both the started and non-started status groups.
12. Problem associated with **investment location** do not delay the investment activities of private investors. The investment location was shown to have a significant and positive impact on the progress of the investment status. Finally, the study concludes that the type of status group found ,significantly influences the progress of private investors. This conclusion is the same for both two status groups.

The following conclusions are applicable to the started and non-started groups of investment status. In this section, the variables that have a similar effect as that discussed above (and applicable to all investors) are not included. Only variables that have a significant but different effect than the above conclusions are included.

7.2.2. Conclusions applicable to the started group of private investment status

1. Most of the private investors in this group used their own contributions to cover their investment costs. When this was not sufficient, they would apply for a bank

loan. More than half of this group had difficulties with bank **credit access**. About half of these investors were delayed from beginning operations because of this. To conclude, access to credit caused the started group to delay less than it did the non-started group.

2. The variable of access to **infrastructure facilities** has a significant and negative effect on the private ISD. This means that access to infrastructure facilities negatively influences the investment progress of this status group and increases the probability of the started group being delayed in their progress.
3. The perception of private investors in the started group regarding the influence of **corruption** differed from that of the non-started group; they felt it was less significant. Therefore, the study concludes that corruption did not influence the private investors found in the started group, and that it did not impact on their investment progress.
4. The variable of investment incentives has a negative effect on the private investment status. That means that private investors found in the started group did not benefit from the investment incentives given by the government. Therefore, the study concludes that investment incentives negatively affected the progress of the started group of investors in the manufacturing sector.
5. Finally, the **interest rate** and **judicial system** have an insignificant effect on the private ISD as per the analyses of the study.

7.2.3. Conclusions applicable to the non-started group of private investment status

1. Concerning the source of finance, all the investors in the pre-implementation status made use of their own contributions, followed by a bank loan, to finance their venture. Though most of them had requested a bank loan, only a few were given **credit access** and their ISD was also high. Therefore, the study concludes that access to credit delayed private investors found in the non-started group of investors in the manufacturing sector.

2. In the case of private investors in the pre-implementation status, the **interest rate** does not affect their investment status. Rather, the interest rate has a significant positive impact and boosted private investors to proceed to the next status of investment within the standard period.
3. Most of the respondents in this group delayed more when compared to the started group because of problems with **infrastructure facilities**. The study concludes that infrastructure facilities significantly influences private investors to delay in the non-started group.
4. A few more of the private investors found in this group delayed their progress of investment status because of the inefficient **judicial system** when compared to the started group. Overall, the judicial system influenced the non-started group of private investors to delay their progress to proceed to the next status.
5. Concerning the level of **corruption** to get different public services, private investors in this status were significantly delayed. Therefore, the type of status found significant influences on private investors due to corruption.
6. **Investment incentives** given by the government benefited most of the private investors in the pre-implementation status and helped to promote their investment. To conclude, private investors did not delay due to investment incentives in the manufacturing sector.

7.2.4. Conclusions of the constraints in the production phase

Out of the 20 constraint factors included in the factor analysis, the following have the highest mean value: macroeconomic uncertainty (i.e. exchange rate, inflation, etc.), problem with raw materials, tax rate and administration issues and electric power shortages. In addition, the highest absolute value of the loading factor is infrastructural, technological, and economic and financial factors.

7.2.5. Summary of discussions and conclusions

The main aim of this paper was to identify the determinants of private investment in the manufacturing sector. This required the investigation of factors that influence the status of private investment within the context of the State of Tigray. Accordingly, the study has identified the main microeconomic determinants of all respondents, the started group and a non-started group of private investors using an econometric model analysis in the State of Tigray, Ethiopia.

First, the result of all respondent investors shows that access to infrastructure facilities, the judicial system, and few investment areas have a significant and negative impact on the ISD. The result also shows that variables like interest rate and investment locations have statistically significant positive influences on the investment status progress. Nevertheless, the remaining variables of the study were not statistically significant based on the methodology adopted.

Second, the econometric model revealed interesting results in the started group of investment status with regard to access to infrastructure facilities, investment incentives, and few investment areas. These are significant, negative determinants of private investors. Also, investment location is a significant but positive determinant for the progress of investment status. The remaining variables were shown to be insignificant for this specific status group.

Third, analysis of the determinants of private investment in the non-started group concluded that the factors that have a significant and negative impact on the ISD were access to infrastructure facilities and few investment areas. Factors identified as having a positive but significant influence were interest rate and investment locations. The remaining variables are insignificant for the non-started group of private investors.

In addition to the above conclusions, the descriptive statistical analysis shows that access to credit, bureaucratic red tape and corruption discourages the progress of private investors found in all statuses of private investment.

In the following, final section, recommendations are put forward to investors and concerned bodies of the government for further inputs in the development and encouragement of private investment. This is followed by further research ideas and a summary of the contribution of the study.

7.3. Recommendations

On the basis of the results of this study, the following recommendations are put forward to be considered in future intervention strategies. They are aimed at the promotion of private investment status in the study area.

1. It was found that not all private investors in all statuses were equally prompted; important aspects like their licensing, the construction of buildings and installation of machinery did not receive equal attention and this affected their progression to the production phase. This delay occurred more in the *investment areas* where private investors invested less and needed more finance. To tackle this problem:
 - a. Private investors in the pre-implementation status should critically study the opportunities and challenges of the investment areas they have chosen prior to getting an investment permit, with a particular focus on efficient manpower in all phases. The private investors should develop a thorough business plan and consult with professionals and experienced experts in the selected investment areas before starting with their investment activities.
 - b. Private investors in the started group should first identify sources of finance for the required building construction and installation of machinery. Clear and open discussions with the banks must take place to establish the investment areas allocated for loan access set by government policy.
 - c. In addition, the investment agency office of the state should carefully assess the feasibility of all possible types of investments first and only then

select and grant investment permits for a specific investment area. Areas of investment for potential investors should also be clearly specified. If the first choice of private investors is not successful, they should get quick feedback so that they can amend their proposal or change their investment type.

2. The availability of domestic credit is believed to promote private investment statuses. However, the study confirmed that there is very little *credit* available to all statuses of investments, but especially to those in the early production phase in the State of Tigray. It is recommended therefore that:

a. Access to credit for private investors should be made more accessible by banks and should be timeous and through the establishment of fair collateral requiring credit schemes, efficient bank paperwork, and the supply of a sufficient amount of credit.

b. If the private sector is to play a major role in economic growth and development, they must receive the greatest share of domestic credit allowed by financial institutions so as to enable them to render their services efficiently and avoid delays in their investment status. In addition, the government should increase its budget and efforts towards assisting the private sector through the issuing of credit which goes a long way to boosting private investment.

c. Private investors should also prepare a sound financial application in line with financial institutions' policies and procedures and the credit requested should only be the amount required and used for the intended purpose.

3. The analyses revealed that the availability of *infrastructure facilities* was an important determining factor in delaying all private investment statuses. Therefore:

a. There is still a need for the regional state and federal government to develop the infrastructural base of the economy and so boost the private

sector. Furthermore, inefficiencies and a shortage of materials and services like transformers, internet facilities, water supplies and the long distance of access to port services have been cited as the major obstacles which delay the investment status in the state. All this needs continuous improvements. Therefore, improving the availability and quality of utilities such as electricity, water, and telecommunications is important to minimising the delay of status of private sectors.

- b. The State of Tigray should consider better ways of coping with insufficient infrastructure facilities. For example, access to port and dry port services and the facilitating of the construction of train services will make a big difference. The State is far away from the coast and an efficient and effective transport system will greatly improve investment inputs and outputs.
 - c. The substandard construction of public infrastructure affects private investment progress and the corrupt tender system aggravates this. In addition and because of corruption, the public services are not efficient and are exposed to a grave misuse of resources. In general, the government should rise to the challenge and invest some of its available resources in the provision of infrastructures which will ultimately decrease private investment delay.
 - d. The State of Tigray should allocate development funds for infrastructure, especially roads, electricity and other public facilities that facilitate the progress of investment status and act as an incentive for private investors to invest and start operation as per the standard.
4. The *judicial system* has been found to be a significant and negative factor for the ISD in the study area. Therefore:
- a. Individual judges should have the capacity to make decisions independently and honestly on the issues of court. The system should create an environment that enables the enforcement of rules and fast court

rulings. Court rulings and decisions should be based on legality and equity and efficient employees should be assigned to matters. In this way judicial system problems will be minimised.

- b. Private investors should get a fast decision for questions raised in relation to their investments and their cases should be assessed with equality. The application of the legal system should be transparent. In addition, regulations related to investment and tax related information are key elements that facilitates the progress of investment conditions. These should be consistent as they are essential for economic development.

5. It was found that *bureaucratic red tape* is one of the major determinants of ISD in the study area. Thus,

- a. In order to encourage the investment status progress of private investors, the government should act to eliminate the time consumed by bureaucratic procedures in the public services. For example, problems securing investment permits can be minimised by assigning employees who have the required skills and experience to assess all applications.
- b. To simplify the application and approval process of public services, decisions should be quicker and more transparent. This refers to investment licensing, the bank loan process, and utility services. Policy makers and leaders (like investment and municipality officials) should observe and discuss what is done on the ground with the private investors.
- c. Furthermore, the commitment of private investors and government employees should be promoted in order to encourage investment at a regional level.

6. *Corruption* was found to be a major determinant of private investment delays. Even though the government has taken measures to protect against corruption, it admits that corruption not only undermines investor confidence and increases the cost of doing business in Ethiopia, it also leads to an increase in the incidence of

poverty. As mentioned earlier, the cost of doing business may rise substantially if the investor is forced to pay bribes to speed up the passage through the system.

- a. The State of Tigray should, therefore, act more to revise the regulations on investment permits and licensing, land access and custom duty services, as it is these that are most exposed to corruption and where a lot of delay is created. Having an efficient and motivated workforce makes a big difference and this could reduce the incidence of corruption.
 - b. The legal system should be strong enough to weaken corruption in the state. There should be strict follow up procedures in place so that the implementation of the existing laws protect against corruption.
 - c. The government has to strive to prosecute those who have abused their power, failed to achieved what is required of them and misappropriated public funds irrespective of their posts. There is a strong and independent institution which is responsible for dealing with these problems. Admittedly, the fight against corruption is not an easy task and should not be left to government alone; it is rather expected that the government, citizens and other stakeholders should be able to address this most difficult challenge – fighting corruption by strengthening strategies. Therefore, it is the responsibility of every stakeholder to respond to the effort of creating a corrupt-free and transparent civil service where fair competition in the free market can thrive and where participatory good governance can ensure equity and social justice.
 - d. In addition, the establishment of comprehensive, reliable and timely information on corruption in the business sectors is needed. Finally, the strengthening of institutions like the judiciary and legislature is required to minimise corruption.
7. The analysis results indicated that *investment incentives* were found to significantly and negatively influence the ISD of the started group of investors. To solve this problem:

- a. The government should clearly market existing investment incentives to the investors effectively and timeously. It should give also an incentives priority for those private investors who invest in the remote zones and the area perceived to be less secure.
 - b. The government should diversify the types and areas of investment incentives. It would, for example, help if the period before the start of production were extended as this would help to motivate more investors to proceed with their investment activities within the required period. The government must also provide special incentives like prioritised loan payments and the fast facilitation of customs and duty-free benefits for private investment in specific industries. Places where improvement is needed is the industries of beverage production, leather and leather products, wood products, vehicles, trailers and semi-trailers products.
 - c. Private investors allocate the investment incentive benefits (such as customs and duty-free) to the allowed investment areas. Government bodies should strictly follow up on the investment incentives, especially those pertaining to customs and duty-free benefits which are some times used for purposes other than that which is intended.
8. Though the *political instability risk* in the state is low, ISD still exists in all statuses. The area near the border with Eritrea is a place where few private investors are willing to make a large investment. Then,
- a. The government should continue working at political solutions to keep the peace in the border areas and to achieve long-term investment benefits.
 - b. In addition, the government should not interfere by making trade restrictions on the type of products to be manufactured and fixing the price of their output.

- c. Private investors should also be able to set the price of their products according to the principles of a free market economy where a fair profit margin can be applied and which does not affect the purchasing power of customers.
9. Investment and municipal officers should supervise the investment activities on the ground to identify the real problems of investors and to encourage them to perform well. The top management of the state should also observe and control the decisions made on investment at lower levels of administration.
 10. The development of awareness of investment laws within the circle of private investors should be a priority at universities, within the regional state and amongst investors. The achievement of these requirements will lay a concrete foundation for a productive and competitive private sector in the state.
 11. It is clear that taxes collected by the government are important for the development of the economy of a country as they enable the government to invest in things like the expansion of infrastructures. However, the government should work with the investors to improve their awareness of the procedures and implementation of taxation so as to ensure that they pay their tax with a full understanding of the procedures of tax collections. Finally, all private investors should also register for value added tax (VAT) if they fulfill the requirements for doing so as this is part of fair market competition.

To summarise, the micro level analysis was made based on the specific data collected in a single state. In light of this, the findings of the micro level study could be used to improve the investment climate so as to promote private investment in the state. The state-level development policies and strategies can give the desired results only if supported by appropriate research for effective implementation. Therefore, the micro-level implementation of development plans and strategies need to take into account local socio-economic and institutional factors that are directly and indirectly related to private investment. These micro-level determinants of private investment will improve the investment climate at state (regional) level. The clear message that has emerged from this research is that having well-formulated

policies is not enough to induce investors to succeed. A host of microeconomic factors, coupled with a favorable socio-political environment, is essential for promoting private investment.

7.4. Further research areas and the contribution of the study

7.4.1. Further research areas

Like all scientific research projects, this study has certain limitations. The following two points are significant and they lead to areas for possible future research

1. The study aimed to investigate the determinants of PIMS in the State of Tigray by taking only a single investment sector in which serious delay rates are observed. Therefore, the results of this research and recommendations made based on the data collected cannot be generalised to other private investment sectors.
2. As per the descriptive analysis, explanatory variables like access to credit, bureaucratic red tape and corruption were identified as having an impact on the ISD in the State of Tigray. As per the econometric analysis however, these variables had no effect on private ISD. This means that a difference has been identified because of the analysis method of independent variables.

Therefore, further studies on these issues are recommended to fill the research gap. In the end, the results of this study need to be interpreted and assessed with these limitations in mind.

7.4.2. Contribution of the study

As this is an in-depth study into a specific state and investment sector, the research has made the following contributions to literature:

1. The current study was made on the determinant factors of the three types of investment statuses. Until now, no research has been conducted into the three

types of investment status (pre-implementation, implementation and operations) in Ethiopia and other developing countries. This research identifies the major determinant factors of private ISD in the manufacturing sector in the State of Tigray, Ethiopia for the first time. Factors that hinder each investment status have been identified and these are a good indication of problems in other regional states in Ethiopia and other developing countries.

2. In previous research studies, the focus was on all types of investment sectors (i.e. agriculture, services, manufacturing, constructions, etc.) and the overall determinants of private investment (like delay, performance, profitability, etc.) were identified. However, the main focus of the current study was the manufacturing sector and in particular on what caused delays in this area. This contributes to body of knowledge as it is specific and relates to a complex investment sector.
3. Most of the research studies previously undertaken in Ethiopia and other developing countries on the determinants of private investment used variables at a macroeconomic level. The common ones have been the exchange rate, inflation, GDP, external debt, international trade, public investment, real interest rates, trade openness, etc. The variables studied in this research are totally different as an independent variable was selected and studied on a microeconomic level. Therefore, this study contributes new findings that are focused at firm level variables that affect each investment status type. This means that it contributes new findings specifically for the State of Tigray on the factors that determine and constrain the investment status progress and operation of private investment on a microeconomic level.
4. The models used to analyse previous research are those that fit objectives like Ordinary Least Square, error correction, Autoregressive Distributed Lag, an eclectic version of flexible accelerator, panel estimation, etc. In this study, the duration model was selected as it best fits the objectives of the research. Therefore, the research results using this model have their own unique contribution to make to the body of scientific knowledge.

5. This study can be used to support the literature study of future studies into the types of investment statuses in Ethiopia and other countries.
6. Finally, the State of Tigray specifically, and FDRE in general, can use this research as material for the development of advanced policies and strategies on investment.

To sum up, for the past two decades, private and foreign investments have been encouraged in Ethiopia, and development procedures put in place to support the different sectors. In order to solve problems facing investors, the government of Ethiopia has now established investment zones for the manufacturing sector in different states of the country including the State of Tigray. These are already under construction. Therefore, considering the above progress and the overall development of investment in the country, as well as the increase of private investment in the State of Tigray, this research has a clear contribution to make. If steps are taken to solve the problems identified by this study, a measurable difference will be evident in the State of Tigray and elsewhere. The problems have been identified at the level of each investment phase and not as pertains to the total investment. This helps to find ways to address the underlying causes of delays in entering production. This is a difficult problem in all countries where the development of investments is being encouraged. My study makes a contribution to specific, quantifiable knowledge in Ethiopia and has important policy implications for the State of Tigray. These can be extended beyond the regional boundaries within Ethiopia and even into other developing countries.

BIBLIOGRAPHY

- Abazi, X. & Kalaj, E. 2015. 'Firm level determinants of private investments in Albania,' *Interdisciplinary Journal of Research and Development*, II(2), 31-34.
- Abuka, C.A., Egesa, K.A., Atai, I. & Obwona, M. 2006. *Firm level investment: Trends, determinants and constraints*. Research Series No. 47. Economic Policy Research Centre, Kampala, Makerere University.
- Acosta, P. & Loza, A. 2005. 'Short and long run determinants of private investment in Argentina,' *Journal of Applied Economics*, VIII(2), 389-406.
- Adera, A. 1994. *The financial sector and economic development: Reflections on Africa*. Virginia: Finafrica-CARIPO.
- Adugna, H. 2013. 'Determinants of private investment in Ethiopia,' *Journal of Economics and Sustainable Development*, 4(20), 186-194.
- Agrawal, P. 2004. 'Interest rates and investment in East Asia: An empirical evaluation of various financial liberalization hypotheses,' *Journal of Development Studies*, 30(3), 142-173.
- Agu, O.C. 2015. 'Determinants of private investment in Nigeria—An econometric analysis.' *International Journal of Economics, Commerce and Management*, III(4), 2-14.
- Ahmad, F., Draz, M.U. & Yang, S. 2015. 'Determinants of Outward Foreign Direct Investment: Evidence from ASEAN and Selected Asian Countries.' Available online <<http://dx.doi.org/10.2139/ssrn.2629031>> Accessed 7/20/2016 10:31 A.M.

- Akerlof, G.A. 1970. 'The market for lemons: Quality uncertainty and the market mechanism,' *Quarterly Journal of Economics*, 84(3), 488-500.
- Akpalu, W. 1997. 'Determinants of private investment in Ghana.' Unpublished MSc thesis, Addis Ababa, Addis Ababa University.
- Alehegn, E. 2008. 'Investment and economic growth in Ethiopia,' *Journal of African Development Studies*, Ethiopian Civil Service University, 1(1).
- Allen, D.E. 1991. 'The determinants of the capital structure of listed Australian companies: The Financial Manager's perspective,' *Australian Journal of Management*, 16(2), 103-127.
- Ambaye, G.G., Berhanu, T. & Abera, G. 2014. 'Modeling the determinants of domestic private investment in Ethiopia.' *Agris on-line papers in Economics and Informatics*, V(4), 13-23.
- Amihud, Y.B., Lev, B. & Travlos, N.G. 1990. 'Corporate control and the choice of investment financing: The case of corporate acquisitions,' *Journal of Finance*, 45(2), 603-616.
- Anyanwu, J.C. 1998. 'An econometric investigation of the determinants of foreign investment in Nigerian economic society' In *Rekindling investment for economic development in Nigeria*, Ibadan: Nigerian Economic Society: 219-41.
- Anyanwu, J.C. 2006. 'Promoting of investment in Africa,' *African Development Review*, 18(1), 42-71.
- Anyanwu, J.C. & Erhijakpor, A.E.O. 2004. 'Domestic debt and economic growth: The Nigerian case,' *West African Financial and Economic Review*, (1), 98-218.
- Asante, Y. 2000. *Determinants of private investment behavior*. Nairobi: AERC Research Paper No. 100.

- Asiedu, E. & Freeman, J. 2009. 'The effect of corruption on investment growth: Evidence from firms in Latin America, Sub-Saharan Africa, and Transition countries,' *Review of Development Economics*, 13(12), 200-214.
- Asiedu, E. & Gyimah-Brempong, K. 2008. 'The effect of the liberalization of investment policies on employment and investment of multinational corporations in Africa,' *African Development Review, African Development Bank*, 20(1), 48-65.
- Assefa, H., Bienen, D. & Ciuriak, D. 2013. 'Ethiopia's investment prospects: A sectoral overview,' *African Review of Economics and Finance*, 4(2), 203-246.
- Attar, P.K. & Temel, A. 2002. 'Modelling private manufacturing investment in Turkey,' *METU Studies in Development*, (29), 1-20 & 109-122.
- Badawi, A. 2004. *Private capital formation and macroeconomic policies in Sudan: Application of a simple cointegrated vector autoregressive model*. Khartoum: University of Khartoum, Department of Economics.
- Bader, M. & Ibrahim, M.A. 2010. 'The impact of interest rate on investment in Jordan: a cointegration analysis,' *Journal of King Abdul Aziz University: Economics and Administration*. 24(1), 199-209.
- Bakaert, G., Harvey, C.R. & Lundblad C. 2005. 'Does financial liberalization spur growth?' *Journal of Financial Economics*, 77(1), 3-55.
- Bakare, A. 2011. 'The determinants of private domestic investment in Nigeria,' *Far East Journal of Psychology and Business*, 4(2), 27-37.
- Bao, H.X.H., Gong, P. & Yang, B. 2015. 'Real estate investment trust returns: Predictability and determinants.' *Journal of Real Estate Practice and Education*, 18(1), 107-116.

- Barbour, P. 2005. 'An assessment of South Africa's investment incentive regime with a focus on the manufacturing sector.' *ESAU Working Paper 14*. London: Overseas Development Institute.
- Basar, E. & Zyck, S. 2012. 'The impact of corruption on investment,' *Series on Corruption and Anti-Corruption Issues in Afghanistan*. Part 5.
- Batra, G., Kaufmann, D. & Stone, A.H.W. 2003. 'Investment climate around the World: Voices of the firms from the World Business Environment Survey.' Washington, D.C.: World Bank.
- Bayai, I. & Nyangara, D. 2013. 'An analysis of determinants of private investment in Zimbabwe for the period 2009-2011,' *International Journal of Economics and Management Sciences*, 2(6), 11-42.
- Baye, K. Fufa, B. & Wakjira, M. 2005. *Determinants of private investment at national and regional level with particular reference to Dire Dawa and Harari regional states*. Haramaya University, Alamaya.
- Beaudry, P., Mustafa, C. & Schiantarelli, F. 2001. 'Monetary instability, the predictability of prices, and the allocation of investment: An empirical investigation using U.K. panel data,' *American Economic Review*, (91), 648-662.
- Bekhet, H.A. & Al-Smadi, R.W. 2015. 'Determinants of Jordanian foreign direct investment inflows: Bounds testing approach,' *Economic Modelling*, 46(April), 27-35.
- Belay, S. & Terrell G.M. 2009. 'The impact of public and private sector transparency on foreign direct investment in developing countries,' *Critical Perspectives on International Business*, 5(3), 187-206.
- Bello, A. & Lawanson, O. 2012. 'Modelling the long run determinants of domestic private investment in Nigeria,' *Asian Social Science*, 8(13).

- Bhaumik, S.K. Das, P.K. & Kumbhakar, S.C. 2011. Firm investment and credit constraints in India, 1997-2006: A stochastic frontier approach. *William Davidson Institute Working Paper*, Number 1010.
- Bibi, S. Khan, U.A. & Bibi, A. 2012. 'Bibi determinants of investment in Pakistan,' *Academic Research International*, 2(2) 517-524.
- Bigsten, A. 2003. 'Credit constraints in manufacturing enterprises in Africa,' *Journal of African Economies*, 12(1), 104-125.
- Bigsten A. & Soderbom, M. 2006. 'What have we learned from a decade of manufacturing enterprise surveys in Africa?' *The World Bank Research Observer*, 21(2), 241-265.
- Bigsten A., Collier, P., Dercon, S., Gauthier, B., Gunning, J. W., Isaksson, A., Oduro, A., Oostendorp, R., Pattilo, C., Soderbom, M., Sylvain, M., Teal, F. and Zeufack, A. 1999. 'Investment in Africa's manufacturing sector: A four countries panel data analyses,' *Oxford Bulletin of Economics and Statistics*, 61(4), 489-512. doi:10.1111/1468-0084.00140.
- Bigsten, A., Kimuyu, P. & Söderbom, M. 2010. 'The manufacturing sector.' In *Kenya: Policies for prosperity*, edited by C. Adam, P. Collier & N. Ndung'u. Oxford: Oxford University Press & Central Bank of Kenya.
- Blejer, M. & Khan, M.S. 1984. 'Government policy and private investment in developing countries,' *IMF staff paper*, (31), 379-403.
- Bojnec, Š. & Xavier, A. 2004. 'Entry and exit in transition economies: the Slovenian manufacturing sector,' *Post-Communist Economies*, 16(2), 191-214.
- Bond, S. & Meghir, C. 1994. 'Dynamic investment models and the firm's financial policy,' *Review of Economic Studies*, (61), 197-222.

- Bonini, S. 2015. 'Secondary buyouts: Operating performance and investment determinants.' *Financial Management*, 44(2).
- Bouton, L. & Sumlinski, M.A. 2000. 'Trends in private investment in developing countries statistics for 1970-1998.' *The World Bank and International Finance Corporation*, Discussion paper No. 41.
- Brunetti, A. & Weder, B. 1998. 'Investment and institutional uncertainty: A comparative study of different uncertainty measures.' *Review of World Economics (Weltwirtschaftliches Archiv)*, 134(3), 513-533.
- Busari, O.T. & Amaghionyeodiwe, L. 2007. 'Private investment and political instability: Evidence from Nigeria,' *International Journal of Applied Econometrics and Quantitative Studies*, Vol. 4-2(45), 64.
- Busia, K. 2007. *Overview of challenges of the investment climate—Related content of the APRM*. United Nations Economic Commission for Africa.
- Central Statistics Agency. 2016. Available online <[www.csa.gov.et./](http://www.csa.gov.et/)> Accessed 7/21/2016 11:05 A.M.
- Central Statistics Agency. 2007. Population and housing census of Ethiopia report. Addis Ababa CSA.
- Chaplinsky, S. & Niehaus, G. 1990. *The determinants of inside ownership and leverage*. Ann Arbor: University of Michigan Working Paper.
- Chhibber, A. & Leechor, C. 1995. 'From adjustment to growth in Sub-Saharan Africa: the lessons of East Asia applied to Ghana.' *Journal of African Economies*, 4(1), 83-114.
- Chhibber, A., Dailami, M. & Shafik, N. (Eds.) 1992. *Reviving private investment in developing countries: Empirical studies and policy lessons*. Amsterdam: Elsevier.

- Chirinko, R.S. 1993. 'Business fixed investment spending: Modelling strategies, empirical results, and policy implications.' *Journal of Econometric Literature*, 31, 1875-1911.
- Chua, D. 1995. 'Tax incentives.' In *Tax policy handbook*, edited by P. Shome. International Monetary Fund, Fiscal Affairs Department, Washington, DC: World Bank.
- City Population. 2016. Available online <<http://www.citypopulation.de/>> Accessed 7/21/2016 11:28 A.M.
- Claassen, C., Loots, E. & Bezuidenhout, H. 2011. 'Chinese foreign direct investment in Africa.' Economic Research Southern Africa Working Paper 261, North-West University.
- Clerides, S., Lach, S. & Tybout, J. 1998. 'Is learning by exporting important? Micro-dynamic evidence from Colombia, Mexico and Morocco,' *Quarterly Journal of Economics*, 113(3), 903-948.
- Collier, P. 2000. 'Africa's comparative advantage.' In *Industrial Development and Policy in Africa*, edited by H. Jalilian, M. Tribe & J. Weiss, Cheltenham, UK: Edward Elgar.
- Collier P. & Gunning J.W. 1999. 'Explaining African economic performance,' *Journal of Economic Literature*, 37(1), 64-111.
- Corcoran, A. & Gillanders, R. 2015. 'Foreign direct investment and the ease of doing business.' *Review of World Economics*, 151(1), 103-126.
- Costello, A.B. & Osborne, J.W. 2005. 'Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis, practical assessment research & evaluation.' *Research and Evaluation*, 10(7), 1-9.

Available online: <<http://pareonline.net/getvn.asp?v=10&n=7>> [Accessed 2 August 2012].

Coutinho, R., & Gallo, G. 1991. 'Do public and private investment stand in each other's way?' *World Development Report background paper, mimeo*. Washington, D.C.: World Bank.

Creswell, W. 2003. *Research design: Qualitative, quantitative and mixed method approaches*. Thousand Oaks, CA: Sage.

Dangayach, G.S. & Deshmukh, S.G. 2001a. 'Manufacturing strategy: Experiences from Indian manufacturing companies.' *Production Planning and Control*, 12(8), 775-786.

Dangayach G.S. & Deshmukh, S.G. 2001b. 'Manufacturing strategy: Literature review and some issues.' *International Journal of Operation and Production Management*, 21(7), 884-932.

Dawit, H. 2010. Domestic private investments in Mekelle: Analysis of success factors and problems. Unpublished MSc thesis, Mekelle University.

Demir, F. 2005. *Financial liberalization, private investment and low growth traps in Argentina, Mexico and Turkey: Limits of growth without investment*. Mimeo. Notre Dame, IN: University of Notre Dame.

Deneke, S. 2001. *Private Sector Development in Ethiopia*. International Conference on African Development Archives: Paper 19. Available online <http://scholarworks.wmich.edu/africancenter_icad_archive/19> [Accessed 15 January 2011].

Department for International Development (DFID). 2001. Investment and Developing Countries. Background Briefing, September, London.

- Devarajan, S., Easterly, W. & Pack, H. 2001. 'Is investment in Africa too high or too low? Macro and micro evidence.' *Journal of African Economies*, 10(2), 81-108.
- Di Bartolomeo, G. & Papa, S. 2015. *Some determinants of trust formation and pro social behaviours in investment games: An experimental study*. Available online < http://wp.comunite.it/data/wp_no_112_2014.pdf> Accessed 7/20/2016 10:52 A.M.
- Doing Business in Ethiopia: 2013 Country Commercial Guide for U.S. Companies*. USA Department of Commerce: U.S. Commercial Service.
- Dooley, M., Frankel, J. & Mathieson, D.J. 1987. 'International capital mobility: What do saving-investment correlations tell us?' *IMF Staff papers* 34(3), 503-530.
- Dornbusch, R. & Fischers, S. 1994. *Macroeconomics*. 6th edition. New York: McGraw-Hill.
- Duncan, R., Cuthbertson, S. & Bosworth, M. 1999. *Pursuing economic reform in the Pacific*. Pacific Studies Series No.18. Manila: Asian Development Bank.
- Dupasquier, C. & Osakwe, P.N. 2003. 'Performance, promotion, and prospects for foreign investment in Africa: National, regional, and international responsibilities.' Paper prepared for the Eminent Persons' Meeting on the promotion of investment in Africa. Tokyo.
- Easterly, W. & Levine, R. 1997. 'Africa's growth tragedy: Policies and ethnic divisions.' *Quarterly Journal of Economics*, 112(November), 1203-50.
- Eckstein, O. & Sinai, A. 1986. 'The mechanisms of the business cycle in the Postwar Era.' In *The American business cycle: Continuity and change*, edited by R.J. Gordon, Chicago, University of Chicago Press.

- Egesa, K.A. 2010. *Indigenous firms' survival in Uganda: Is there a role for increased technology use?* Kampala: Bank of Uganda.
- Eifert, B., Gelb, A. & Ramachandran, V. 2005. *Business environment and comparative advantage in Africa: Evidence from the investment climate data.* RPED Report 126. Washington, D.C.: World Bank.
- Elshamy, J., Ma, J Adams 2015. 'The economic determinants of Chinese foreign direct investment in Egypt.' *Emerald insight.com*.
- Embassy of Japan in Ethiopia, 2008. A series of studies on industries in Ethiopia.
- Erden, L. & Holcombe, R.G. 2005. 'The effects of public investment on private investment in developing economies.' *Public Finance Review*, 33(5), 575-602.
- Ethiopian Investment Authority. 2008. *Statistics on investment report in Ethiopia.* Addis Ababa.
- Ethiopian Investment Authority. 2012. *Statistics on investment report in Ethiopia.* Available online <www.et.emb-japan.go.jp/Eco_Research_E.pdf> Accessed 5/21/2013.
- Ethiopian Investment Authority. 2013. *Statistics on investment report in Ethiopia.* Addis Ababa.
- Ethiopian Investment Commission. <http://www.investethiopia.gov.et/>
- Everhart, S.S. & Sumlinski, M.A. 2002. *Trends in private investment in developing countries statistics for 1970-2000 and the impact on private investment of corruption and the quality of public investment.* IFC Discussion Paper No. 44. Washington DC.: World Bank.
- Fafchamps, M., Gunning, J.W. & Oostendorp, R. 2000. 'Inventories and risk in African manufacturing.' *Economic Journal*, 110(466), 861-93.

- Fairbairn, T.I.J. 1992. 'Private sector development in the South Pacific: Options for donor assistance.' *Pacific Studies Monograph No.3*. University of New South Wales: The Centre for South Pacific Studies.
- Fazzari, F.M., Hubbard, R.G. & Petersen, B.C. 1988. 'Financing constraints and corporate investment.' *Brookings Papers on Economic Activity*, 19(1), 141-195.
- FDRE. 1995. *Constitution of the Federal Democratic Republic of Ethiopia. Proclamation No. 1/1995*. Addis Ababa.
- FDRE. 1996. *Investment proclamation No. 37/1996*. Addis Ababa.
- FDRE. 2002. *Investment proclamation No. 280/2002*. Addis Ababa.
- FDRE. 2003. *Council of ministers regulations No. 84/2003*. Addis Ababa.
- FDRE. 2008. *Council of ministers regulation No. 146/2008*. Addis Ababa.
- Field, A.P. 2009. *Discovering statistics using SPSS*. 3rd edition. London: Sage.
- Fielding, D. 1997. 'Adjustment, trade policy and investment slumps: Evidence from Africa.' *Journal of Development Economics*, 52, 121-137.
- Fischer, S.E. Hernandez-Cata, E. & Khan, M.S. 1998. *Africa: Is this the turning point?* IMF Paper on Policy Analysis and Assessment 98/6, May.
- Fisman, R. 2001. 'Trade credit and productive efficiency in developing countries,' *World Development*, 29(2), 311-321.
- Fisman, R. & Raturi, M. 2004. 'Does competition encourage credit provision? Evidence from African trade credit relationships.' *Review of Economics and Statistics*, 86(1), 345-352.

- Froot, K. & Stein, J. 1991. 'Exchange rate and foreign direct investment: An imperfect capital market approach.' *Quarterly Journal of Economics*, Vol.106(4), 1197-1217.
- Frimpong, J.M. & Marbuah, G. 2010. 'The determinants of private sector investment in Ghana: An ARDL approach.' *European Journal of Social Science*, 15(2), 250-261.
- Galbis, V. 1979. 'Money, investment and growth in Latin America, 1961-1973.' *Economic Development and Cultural Change*, 27(3), 423-443.
- Gebrehiwot, T. 2009. 'Determinants of food security in rural households of the Tigray Region.' Unpublished MSc thesis, Addis Ababa, University of Addis Ababa.
- Getachew, M. 1997. 'Determinants of private industrial investment in Ethiopia.' Unpublished MSc thesis, Addis Ababa, University of Addis Ababa.
- Gellos, R.G. & Werner, A.M. 2002. 'Financial liberalization, credit constraints and collateral: Investment in the Mexican manufacturing sector.' *Journal of Development Economics*, 67, 1-27.
- Geng, N. & N'Diaye, P. 2012. *Determinants of corporate investment in China: Evidence from cross-country firm level data*. IMF Working Paper 12/80. Washington: International Monetary Fund.
- Gertler, M. 1988. 'Financial structure and aggregate economic activity: An overview,' *Journal of Money Credit and Banking*, 20(3), 559-596.
- Ghebre, S. 1996. 'Determinants of private investment: A review.' Ethiopia.
- Ghura, D. 1997. 'Private Investment and Endogenous Growth: Evidence from Cameroon,' *IMF Working Paper 97/165*.

- Ghura, D. & Goodwin, B. 2010. Determinants of private investment: A cross-country empirical investigation." *Applied Economics*, 32(14), 1819-1829.
- Godfrey, 2008. *Why is competition important for growth and poverty reduction?* OECD Global Forum on International Investment.
- Greene, J. & Villanueva, D. 1990. 'Determinants of private Investment in LDCs.' *Finance and Development*.
- Greene, J. & Villanueva, D. 1991. 'Private investment in developing countries: An empirical analysis.' *International Monetary Fund Staff Papers*, 38(1), 33-58.
- Guimarães, R. & Unterberdoerster, O. 2006. 'What's driving private investment in Malaysia? Aggregate trends and firm-level evidence.' *International Monetary Fund Working Paper*.
- Günçavdi, Ö & McKay, A. 2003. 'Macroeconomic adjustment and private manufacturing investment in Turkey: A time-series analysis,' *Applied Economics*, 35, 1901-1909.
- Günçavdi, Ö., Bleaney, M. & McKay, A. 1998. 'Financial liberalization and private investment: Evidence from Turkey,' *Journal of Development Economics*, 57(2), 443-455.
- Günçavdi, Ö., Bleaney, M. & McKay, A. 2008. Financial determinants of private investment in Turkey: An Euler equation approach to time series. *EconoQuantum*, 2(2).
- Gunning, J.W. & Mengistae, T. 2001. 'Determinants of African manufacturing investment: The microeconomic evidence.' *Journal of African Economics*, 10(2), 48-80.
- Habyarimana, J. 2003. *The benefits of banking relationships: Evidence from Uganda's banking crisis*. Cambridge, Mass.: Harvard University Press.

- Haile, G. & Assefa, H. 2005. 'Determinants of foreign direct investment in Ethiopia: A time-series analyses.' Paper prepared for the 4th International Conference on the Ethiopian Economy. Available online <westminsterresearch.wmin.ac.uk/2892/1/Haile_Assefa_2006_final.pdf> Accessed 11/19/2010 12:19 A.M.
- Hallward-Driemeier, M., Wallsten, S. & Xu, L.C. 2003. *The investment climate and the firm: Firm-level evidence from China*. World Bank Policy Research Working Paper No. 3003. Available online <<http://ssrn.com/abstract=373946>>
- Harris, R.I.D. 2000. *Using cointegration analysis in econometrics modeling*. New York: Prentice Hall.
- Harris, M. & Raviv, A. 1991. 'The theory of capital structure.' *Journal of Finance*, 46(1), 297-355.
- Harris, J.R., Schiantarelli, F. & Siregar, M.G. 1994. 'The effects of financial liberalization on the capital structure and investment decisions of Indonesian manufacturing.' *World Bank Economic Review*, 8(1), 17-47.
- Harupara, G. 1998. 'Macroeconomic determinants of private investment in Namibia.' Unpublished MSc thesis, Addis Ababa University.
- Harvey, C. 1985. *Macroeconomics in Africa*. London: Macmillan Education Limited.
- Heidenheimer, A.J. 1989. 'What is the problem about corruption?' *In Political corruption: A handbook.*, edited by M. Johnson and V.T. LeVine. New Brunswick: Transaction Books.
- Henderson, S.C., Swamidass, P.M. & Byrd, T.A. 2004. 'Empirical models of the effect of integrated manufacturing on manufacturing performance and return on investment.' *International Journal of Production Research*, 42(10), 1933-1954.

- Herandez-Cata, E. 2000. 'Raising growth and investment in Sub-Saharan Africa: What can be done?' *International Monetary Fund Policy Discussion Paper: PDP/00/4*.
- Hosamane, M.D. & Niranjana, R. 2010. 'Determinants of investment pattern in Indian manufacturing industries: A panel data study,' *Indian Journal of Economics & Business*, 9(1), 207-218.
- Hussien, A. 2000. 'Factors determining private investment in Ethiopia.' Unpublished MEcon thesis, KDI School of Public Policy and Management, Seoul.
- Igošina, V. 2015. 'FDI to EU15 and new member states: Comparative analysis of inflow determinants.' *Prague Economic Papers*, 24(3). Prague: University of Prague.
- Imperial Government of Ethiopia. 1963. *Investment Decree No. 51/1963*. Addis Ababa.
- Jayaraman, T.K. 1996. *Private investment and macroeconomic environment in the South Pacific island countries: A cross-country analysis*. Occasional Paper No.14. Manila: Asian Development Bank.
- Jha, P. 2015. 'Impact of determinants of FDI on Indian economy,' *International Journal of Academic Research in Commerce & Management*, 1(1), 9-12.
- Jongwanich, J. & Kohpaiboon, A. 2006. *Private investment: Trends and determinants in Thailand*. International Conference, APEC Study Centre, City University of Hong Kong, 18-20.
- Jorgenson, D.W. 1963. 'Capital theory and investment behavior.' *American Economic Review Paper and Proceedings*, 53(2), 247-259.
- Jorgenson, D.W. 1971. 'Econometric studies of investment behaviour: A survey.' *Journal of Economic Literature*, 9(4), 1111-1147.

- Kaiser, H. 1974. An index of factorial simplicity. *Psychometrika*, 39(1), 31-6.
- Karadag, M., Önder, A.O. & Deliktas, E. 2005. 'Growth of factor productivity in the Turkish manufacturing industry at provincial level.' *Regional Studies*, 39(2), 213-223.
- Karagoz, K. 2010. 'Determining factors of private investments: An empirical analysis for Turkey,' *Sosyoekonomi*, 6(1), 7-25.
- Kehinde, O., Felix, O., Kayode, I. & Adedamola, A. 2012. 'The determinants of domestic private investment in Nigeria.' *IOSR Journal of Humanities and Social Science*, 2(6), 46-54.
- Keynes, J.M. 1936. Reprinted in 1994. *General theory of employment, interest and money*. San Diego: Harcourt Brace Jovanovich.
- Khalil, E. 2015. 'Analysis of determinants of foreign direct investment in Egypt: 1970-2013.' *European Scientific Journal*, Special Edition(2), 329-361.
- Khan, M.S. & Reinhart, C.M. 1990. 'Private investment and economic growth in developing countries.' *World Development*, 18(1), 19-27.
- Khan, S. & Khan, M.A. 2007. 'What determines private investment? The case of Pakistan. *Working Paper of the Pakistan Institute of Development Economics*.
- King, R.G. & Levine, R. 1993. 'Finance and growth: Schumpeter might be right.' *Quarterly Journal of Economics*, 108(3), 717-738.
- Kothari, C.R. 2004. *Research methodology, methods and techniques*. New Delhi: New Age International Publishers.
- Kitov, I.O. 2009. *What is the best firm size to invest?* Russian Academy of Sciences: Institute for the Geospheres' Dynamics.

- Kumar-Das, S. 2006. 'An analysis of investment in the registered manufacturing sector in India.' Paper presented at the Indian Econometric Society Conference, New Delhi, Jawaharlal Nehru University.
- Kwaku, A. & Enning, D.K. 2016. 'An OLS approach to modelling the determinants of private investment in Ghana.' *International Journal of Academic Research in Business and Social Sciences*, 6(4), 201-226.
- Le, Q.V. 2004. 'Political and economic determinants of private investment.' *Journal of International Development*, 16(4), 589-604.
- Legum, B. 2005. 'Defining investment and investor: Who is entitled to claim?' Symposium co-organised by ICSID, OECD and UNCTAD, Paris.
- Lesotlho, P. 2006. An investigation of the determinants of private investment: The Case of Botswana. Unpublished MEcon thesis, Cape Town, University of the Western Cape.
- Levine, R. & Renelt, D. 1992. 'A sensitivity analysis of cross-country growth regressions.' *American Economic Review*, 82(4), 942-963.
- Magableh, S.I. & Ajlouni, S.A. 2016. 'Determinants of private investment in Jordan: An ARDL bounds testing approach,' *Dirasat, Administrative Sciences*, 43(1), 263-274.
- Mahmoud, M. 1994. 'Construction productivity awareness and improvement programs in Saudi Arabia.' Unpublished MSc thesis, Dhahran, King Fahd University of Petroleum and Minerals.
- Majdzadeh, M.A., Ghazanfari, A. & Ara, M.M. 2014. 'Determinants of private investment in Iran based on Bayesian Model Averaging.' *International Journal of Academic Research in Business and Social Sciences*, 4(7) 229-240.

- Majeed, M.T. & Khan, S. 2008. 'The determinants of private investment and the relationship between public and private investment in Pakistan.' Available online <https://mpa.ub.uni-muenchen.de/49301/1/MPRA_paper_49301.pdf> [Accessed on 26 August 2013].
- Mamo, S. 2008. 'Determinants of foreign direct investment in Ethiopia.' Unpublished MSc thesis, Maastricht, Maastricht University.
- Mauskopf, E. 1990. 'The transmission channels of monetary policy: How have they changed?' *Federal Reserve Bulletin*, 76(12), 985.
- Mbugua, T. 2000. 'The micro and macroeconomic determinants of private investment in the manufacturing sector in Kenya.' Unpublished MSc thesis Addis Ababa, Addis Ababa University.
- McCall, P.J. 2004. *Overcoming Barriers to Private Investment in the Middle East and North Africa Region*. Arab Financial Forum. Bahrain.
- McKinnon, R.I. 1973. *Money and capital in economic development*. Washington DC: The Brookings Institution.
- Mele, M. & Nicolai, F. 2015. 'On the determinants of foreign direct investment in emerging countries: The case of China.' *Rivista Italiana di Economia Demografia e Statistica*, Volume LXIX(1) 39-46.
- Mengistae, T. & Pattillo, C. 2004. 'Export orientation and productivity in Sub-Saharan Africa. *International Monetary Fund Staff Papers*, 51(2):327-53.
- Michael, I.M. & Aikaeli, J. 2014. 'Determinants of private investment in Tanzania,' *African Journal of Economic Review*, Volume 11(2), 39-52.
- Military Government of Ethiopia, 1975a. *Proclamation No. 26/1975*. Addis Ababa.

- Military Government of Ethiopia, 1975b. *Proclamation No. 76/1975*. Addis Ababa.
- Military Government of Ethiopia, 1983. *Proclamation No. 235/1983*. Addis Ababa.
- Mills, K., Morling, S & Tease, W. 1994. *The influence of financial factors on corporate investment*. Research Discussion Paper 9402, Sydney, Reserve Bank of Australia.
- Mitiku, W. 1996. 'Determinants and constraints of private investment in Ethiopia,' *Ethiopian Journal of Economics*, 5(2).
- Ministry of Finance and Economic Development.1999. *Survey of the Ethiopian economy: Review of post reform developments (1992/93–1997/98)*. Addis Ababa, Ethiopia.
- Ministry of Finance and Economic Development. 2000. *Annual report*. Addis Ababa.
- Mlambo, K. & Oshikoya, W. 2001. 'Macroeconomic factors and investment in Africa,' *Journal of African Economics*, 10(2), 12-47.
- Mogues, T. 2015. 'Political economy determinants of public spending allocations: A review of theories, and implications for agricultural public investment.' *European Journal of Development Research*, 27(3), 452-47.
- Mohamed, I. 2016. 'Determinants of private investment in Egypt.' *International Journal of Scientific Research*, 5(5).
- Molapo, S. & Damane, M. 2015. 'Determinants of private investment in Lesotho.' *European Scientific Journal*, 11(34).
- Muhammedhussen, B., 2016. 'Determinants of private investment: A systematic review.' *International Journal of Economics, Finance and Management Sciences*, 4(2): 52-56.

- Mulenga, S. 1997. '*The determinants of foreign direct investment in Zambia.*' Unpublished MSc thesis, Addis Ababa, Addis Ababa University.
- Munir, R., Awan, R.U. & Hussain, Z. 2010. 'Investment, savings, interest rate and bank credit to the private sector nexus in Pakistan.' *International Journal of Marketing Studies*, 2(1), 140-146.
- Muradu, A. 2009. *Legal history and traditions. Teaching material.* Justice and Legal System Research Institute. Available online <<https://chilot.me/teaching-materials/>> Accessed 11/29/2011 04:15 P.M.
- Mwangi K. 2015. 'An analysis of the determinants of private sector investment in Kenya using the ARDL approach.' Unpublished MSc thesis. Windhoek, University of Namibia.
- Myers, S.C. & Majluf, N.S. 1984. 'Corporate financing and investment decisions when firms have information that investors do not have.' *Journal of Financial Economics*, 13(2), 187-221.
- Naa-Idar, F., Ayentimi, D.T. & Frimpong, J.M. 2012. 'Time series analysis of determinants of private investment in Ghana (1960-2010).' *Journal of Economics and Sustainable Development*, 3(13).
- Nainggolan, P., Ramli, R., Daulay, M. & Rujiman, R. 2015. 'An analysis of determinant on private investment in North Sumatra Province, Indonesia.' *Journal of Management Research*, 7(1), 38-57.
- Natangwe N. 2009. 'Factors influencing investment: A case study of the Namibian economy.' Unpublished MSc thesis, Windhoek, University of Namibia.
- National Bank of Ethiopia. 2012/13. *Annual report.* Addis Ababa, Ethiopia.
- National Bank of Ethiopia. 2013/14. *Annual report.* Addis Ababa, Ethiopia.

National Bank of Ethiopia. 2014/15. *Annual report*. Addis Ababa, Ethiopia.

Naudé, W.A., Oostendorp, R. & Serumaga-Zake, P.A.E. 2000. *Determinants of investment and exports of South African manufacturing firms: Firm-level survey results*. Paper presented at the Conference on Opportunities in Africa, University of Oxford.

Ndikumana, L. 2000. 'Financial determinants of domestic investment in Sub-Saharan Africa: Evidence from Panel Data.' *World Development*, 28(2), 381-400.

Niranjan. R. & Hosamane, M.D. 2015. 'Investment behavior in private manufacturing sector in India: An empirical analysis.' *The Journal of Industrial Statistics*, 4(1), 91-112.

Ogunbayo, E.I., Sangodoyin, A.A., Lawal, J.O. & Okoruwa, V.O. 2014. 'Macroeconomic analysis of the determinants of private investment in Nigeria.' *International Journal of Agricultural Economics & Rural Development*, 6(1), 84-101.

Olorunniwo, F.O. 1997. 'A framework for measuring success of cellular manufacturing implementation.' *International Journal of Production Research*, 35(11), 3043-3062.

Olweny, T. & Chiluwe, M. 2012. 'The effect of monetary policy on private sector investment in Kenya.' *Journal of Applied Finance and Banking*, 2(2), 239-287.

Omet, G., Yaseen, H. & Abukhadijeh, T. 2015. 'The determinant of firm investment: The case of listed Jordanian industrial companies,' *International Journal of Business and Management*, 10(9).

Onaran, O. & Yenturk, N. 2001. 'Do low wages stimulate investment? An analysis of the relationship between distribution and investment in Turkish private

manufacturing industry.' *International Review of Applied Economics*, 15(4), 359-374.

Organisation for Economic Cooperation for Development. 2012. *Annual report*. <<http://www.oecd.org>> Accessed 08/17/2013.

Oshikoya, T.W. 1994. 'Macroeconomic determinants of domestic private investment in Africa: An empirical analysis.' *Journal of Economic Development and Cultural Change*, 42(3), 573-596.

Ouattara, B. 2005. *Modelling the long run determinants of private investment in Senegal*. CREDIT Research Paper No 04/05. Nottingham: University of Nottingham: Centre for Research in Economic Development and International Trade.

Ozaler, S. & Rodrik, D. 1992. 'External shocks, politics and private investment: Some theory and empirical evidence.' *Journal of Development Economics*, 39, 141-62.

Pattillo, C. & Soderbom, M. 2001. *Do risk averse entrepreneurs get lower profits?* Oxford: Oxford University Press.

Peoples Democratic Republic of Ethiopia. 1989. *Special Decree No. 11/1989*. Addis Ababa.

Peoples Democratic Republic of Ethiopia. 1990. *Special Decree No. 17/1990*. Addis Ababa.

Pfefferman, G.P. & Madarassy, A. 1993. '*Trends in private investment in developing countries, 1990-91 edition*.' IFC discussion paper 11. International Finance Corporation.

Pindyck, R.S. 1991. 'Irreversibility, uncertainty and investment.' *Journal of Economic Literature*, 29(3), 1110-1148.

- Pinegar, J.M. & Wilbricht, L. 1989. 'What managers think of capital structure theory: A survey.' *Financial Management*, 18(4), 82-91.
- Poncet, S., Steingress, W. & Vandenbussche, H. 2008. 'Financial constraints in China: Firm-level evidence.' *China Economic Review*, 21(3), 411-422.
- Pun, K.F. 2005. 'An empirical investigation of strategy determinants and choices in manufacturing enterprises.' *Journal of Manufacturing Technology Management*, 16(3), 282-301.
- Quan, J. 2006. '*Land access in the 21st Century: Issues, trends, linkages and policy options.*' Livestock Support Programme Working Paper 24. Natural Resources Institute of the University of Greenwich.
- Raphael, K. 2014. 'Macroeconomic determinants of private sector investment: An ARDL approach: Evidence from Nigeria.' *Global Advanced Research Journal of Management and Business Studies*, 3(2), 82-89.
- Record, R. & Davies, S. 2007. *Determinants and impact of private sector investment in Malawi: Evidence from the Investment Climate Survey*. MPRA Paper No. 3818. Bath: University of Bath.
- Rehman, H., Khan, S. & Khan, M.A. 2009. 'What determines private investment? The case of Pakistan.' *A Research Journal of South Asian Studies*, 24(1), 52-68.
- Relief Web. 2016. Available online <<http://reliefweb.int/maps>> Accessed 7/21/2016 11:37 A.M.
- Roberts, M. & Tybout, J. 1997. 'The decision to export in Colombia: An empirical model of entry with sunk costs.' *American Economic Review*, 87(4), 545-564.

- Rodrik, D. 1991. 'Policy uncertainty and private investment in developing countries.' *Journal of Development Economics*, 36(2), 229-242.
- Rolfe, R., Perri, A. & Woodward, D. 2015. 'Patterns and determinants of intra-African foreign direct investment.' In *The changing dynamics of international business in Africa*, edited by I. Adeleye, K. Ibeh, A. Kinoti & L. White, London, Palgrave Macmillan, 101-122.
- Ross, A.G. 2015. 'An empirical analysis of Chinese outward foreign direct investment in Africa,' *Journal of Chinese Economic and Foreign Trade Studies*, 8(1), 4-19.
- Rossiter, R. 2002. 'Structural cointegration analysis of private and public investment.' *International Journal of Business and Economics*, 1(1), 59-67.
- Saghir, R. & Khan, A. 2012. 'Determinants of public and private investment: An empirical study of Pakistan.' *International Journal of Business and Social Science*, 3(4), 183-188.
- Sakr, K. 1993. *Determinants of private investment in Pakistan*. Working Paper of the International Monetary Fund, Middle Eastern Department.
- Salahuddin, M. & Islam, R. 2008. 'Factors affecting investment in developing countries.' *The Journal of Developing Areas*, 42(1), 21-37.
- Salahuddin, M., Islam, R. & Salim, S.A. 2009. 'Determinants of investment in Muslim developing countries: An empirical investigation.' *International Journal of Economics and Management*, 3(1), 100-129.
- Salem A. & Rafiq, H. 2013. 'Determinants of private investment in United Arab Emirates.' *International Journal of Economics, Commerce and Management*, United Kingdom, 1(2), 1-13.

- Sarkar, H. & Hasan, M. 2001. 'The impact of corruption on the efficiency of investment: Evidence from a cross-country analysis.' *Asia-Pacific Development Journal*, 8(2), 111-116.
- Seruvatu, E. & Jayaraman, T.K. 2001. *Determinants of private investment in Fiji*. Suva: Reserve Bank of Fiji.
- Serven, L. 1998. 'Macroeconomic uncertainty and private investment in developing countries: An empirical investigation.' *World Bank Policy Research Paper* 2035, 1-38.
- Serven, L. 2002. 'Real exchange rate uncertainty and private investment in developing countries.' *World Bank Policy Research Paper* 2823, 1-24.
- Serven, L. & Solimano, A. 1990. *Private investment and macroeconomic adjustment: Theory, country experience and policy implications*. Washington, D.C.: World Bank.
- Serven, L. & Solimano, A. 1992. 'Private investment and macroeconomic adjustment: A survey.' *The World Bank Research Observer*, 7(1), 1-35 & 95-114.
- Shafik, N. 1992a. 'Modelling private investment in Egypt.' *Journal of Development Economics*, 39(2), 263-277.
- Shafik, N. 1992b. 'Private investment and public policy: The Egyptian case.' In *Reviving private investment in developing countries*, edited by A. Chhibber, M. Dailami & N. Shafik, Amsterdam: Elsevier.
- Shaw, E.S. 1973. *Financial deepening in economic development*. New York: Oxford University Press.

- Shuetrim, G., Lowe, P. & Morling, S. 1993. 'The determinants of corporate leverage: A panel data analysis.' *Reserve Bank of Australia Research Discussion Paper No. 9313*.
- Siwatibau, S. 1993. 'Macroeconomic management in the small open economies of the South Pacific.' In *The future of Asia-Pacific economies: Pacific Islands at the cross roads?* edited by R. Cole & S. Tambunlertchai, National Centre for Development Studies, Canberra: Australian National University.
- Skully, M. 1997. *The South Pacific: Finance, development and the private sector*. International Development Issues No.48: Canberra: Australian Agency for International Development.
- Smith, N. & Thomas, E. 2015. 'Determinants of Russia's informal economy: The impact of corruption and multinational firms.' *Journal of East-West Business*, 21(2), 102-128.
- Soderbom, M. & Teal, F. 2004. 'Size and efficiency in African manufacturing firms: Evidence from firm-level panel data.' *Journal of Development Economics*, 73(1), 369-394.
- Soneta, K., Bhutto, N.A., Butt, F., Mahar, N. & Sheikhet, S.A. 2012. 'Impact of public infrastructure on manufacturing sector of Pakistan.' *Proceedings of 2nd International Conference on Business Management* (ISBN: 978-969-9368-06-6).
- Srinivasan, P. & Kalaivani, M. 2015. 'Determinants of foreign institutional investment in India: An empirical analysis.' *Global Business Review*, 16(3), 364-376.
- Stasavage, D. 2002. 'Private investment and political institutions.' *Economics and Politics*, 14(1), 41-63.
- Stiftung, B. 2009. *BTI 2010 – Ethiopia Country Report*. Gütersloh: Bertelsmann Stiftung, 2010. Available online <<https://www.bti-project.org/fileadmin/files/>

BTI/Downloads/Reports/2010/pdf/BTI_2010_Ethiopia.pdf> [Accessed on 11 June 2011].

Stiglitz, J.E. & Weiss, A. 1981. 'Credit rationing in markets with imperfect information.' *American Economic Review*, 71(3), 393-410.

Suhendra, I. & Anwar, C.J. 2014. 'Determinants of private investment and the effect of economic growth in Indonesia.' *GSTF Journal on Business Review (GBR)*, 3(3), 1-6.

Tahir, S.H. & Sabir, H.M. 2015. 'Ownership structures as determinants of financial decisions: Evidence from Pakistani family owned listed firms.' *Zbornik radova Medimurskog veleucilista*, UDC 658.1(549.1).

Tanzi, V. 1998. 'Corruption around the world: Causes, consequences, scope and cures.' *Working Paper of the International Monetary Fund WP/98/63*. Washington, D.C: World Bank.

Teklay, B. 2016. The financial determinants of private sector investment: The case of Ethiopia. Unpublished MSc thesis, Addis Ababa, Addis Ababa University.

Tigray Investment Office. 2012. *Statistics on Investment report in Tigray*.

Tobin, J. 1969. 'A general equilibrium approach to monetary theory.' *Journal of Money, Credit and Banking*, 1(1), 15-29.

Transitional Government of Ethiopia. 1992. *Proclamation No. 15/1992*. Addis Ababa, Ethiopia.

Transitional Government of Ethiopia. 1992. *Personal Income Amendment Proclamation No. 30/1992*, Addis Ababa, Ethiopia.

Transitional Government of Ethiopia. 1993. *Proclamation No. 68/1993*. Addis Ababa, Ethiopia.

- Transitional Government of Ethiopia. 1994. *Proclamation No. 107/1994*. Addis Ababa, Ethiopia.
- Transitional Government of Ethiopia. 1994. *Proclamation No. 108/1994*. Addis Ababa, Ethiopia.
- Tsuchiya, Y. 2015. *Determinants of foreign direct investment in India: Region-sector wise analysis*. Tokyo: Tokyo University of Foreign Studies.
- Ulrich, G. 2010. *The determinants of private investment in Benin: A panel data analysis*. Nairobi: African Economic Research Consortium Research Paper 209.
- United Nations. 2004 *An investment guide to Ethiopia: Opportunities and conditions*. New York: United Nations.
- United Nations Commission for Trade and Development. 1998. *Report*. New York: United Nations.
- United Nations Commission for Trade and Development. 2002. *Investments and innovation policy review Ethiopia*. New York: United Nations.
- Valadkhani, A. 2004. 'What determines private investment in Iran?' *International Journal of Social Economics*, 31(5/6), 457-468.
- Vera, O.S. & Simon, K.H. 2008. 'Fiscal policy, private investment and economic growth: The case of Ghana.' *Studies in Economics and Finance*, 25(2), 112-130.
- Vergara, R. 2004. *Taxation and private investment: Evidence for Chile*. Santiago: Universidad Católica de Chile.

- Villaverde, J. & Maza, A. 2015. 'The determinants of inward foreign direct investment: Evidence from the European regions.' *International Business Review*, 24(2), 209-223.
- Wai, T.U. & Wong, C.H. 1982. 'Determinants of private investment in developing countries,' *Journal of Development Studies*, 19(1), 19-36.
- Weder, B. 1998. 'Africa's trade gap: What should Africa do to promote exports?' Paper presented at the Workshop on Asia and Africa in the Global Economy, Tokyo: United Nations University.
- Were, M. 2001. 'The impact of debt on economic growth and private investments in Kenya: An empirical assessment.' Paper presented at the Wider Development Conference on Debt Relief, Helsinki.
- Whited, T.M. 1991. 'Investment and financial asset accumulation.' *Journal of Financial Intermediation*, 1(4), 307-334.
- Woldemeskel, S.M. 2008. *Determinants of foreign direct investment in Ethiopia*. Maastricht: Maastricht Graduate School of Governance.
- Woo, L. & Lange, H.P. 1992. 'Equity raising by Australian small business: A study of access and survival.' Monash University: Department of Accounting and Finance Discussion Paper No. 19/92.
- Wong, D.Y. 1990. 'What do savings-investment relationships tell us about capital mobility?' *Journal of International Money and Finance*, 9, 60-74.
- Workie M. 1996. 'Determinants and constraints of private investment in Ethiopia,' *Ethiopian Journal of Economics*, 5(2), 57-80.
- World Bank. 1995. *Pacific Island economies: Building a resilient base for the 21st Century*. Washington, D.C.: World Bank.

World Bank. 2005. *World Development Report 2005: A Better investment climate for everyone*. New York: Oxford University Press.

World Population Review. 2014. Available online <<http://worldpopulationreview.com/continents/world-population>> Accessed 08/26/2014 08:49 A.M.

Xaypanya, P., Rangkakulnuwat, P. & Paweenawat, S.W. 2015. 'The determinants of foreign direct investment in ASEAN: The first differencing panel data analyses. *International Journal of Social Economics*, 42(3), 239-250.

Zebib, M. & Muoghalu, M. 1998. 'Dynamic nature of private investment and its determinants in developing countries.' *Studies in Economics and Finance*, 18(2), 100-110.

Zerfu, D. 2001. *Determinants of private investment in Ethiopia*. Addis Ababa: Addis Ababa University.

Zikmund, W.G., Babin, B.J. Carr, J.C. & Griffin, M. 2010. *Business research methods*. 9th edition. Mason: South-Western publishing.

Appendices

APPENDIX A: CHI-SQUARE TEST

Crosstabs

[DataSet1] D:\SPSS DATA\Arranged Thesis data for factor analysis March, 2014.sav

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Did they delay due to education level?	259	100.0%	0	0.0%	259	100.0%
Did they delay due to investment areas?	259	100.0%	0	0.0%	259	100.0%
Did they delay due to access to credit?	170	65.6%	89	34.4%	259	100.0%
Did they delay due to interest rate?	163	62.9%	96	37.1%	259	100.0%
Did they delay due to infrastructure facilities?	228	88.0%	31	12.0%	259	100.0%
Did they delay due to land access?	259	100.0%	0	0.0%	259	100.0%
Didn't they delay due to judicial system?	257	99.2%	2	0.8%	259	100.0%
Did they delay due to bureaucratic red tape?	259	100.0%	0	0.0%	259	100.0%
Did they delay due to corruption?	251	96.9%	8	3.1%	259	100.0%
Did they delay due to investment incentives?	259	100.0%	0	0.0%	259	100.0%
Did they delay due to risks of political instability?	259	100.0%	0	0.0%	259	100.0%
Did they delay due to investment location?	257	99.2%	2	0.8%	259	100.0%

Types of status group: Did they delay due to education level? What was their educational level?

Cross tabulation

What was their educational level?			Did they delay due to education level?		Total
			Yes	No	
Up to high school	Non-started group	Count	32	68	100
		Expected Count	41.4	58.6	100.0
		% within Types of status group	32.0%	68.0%	100.0%
		% within Did they delay?	39.0%	58.6%	50.5%
		% of Total	16.2%	34.3%	50.5%
	Started group	Count	50	48	98
		Expected Count	40.6	57.4	98.0
		% within Types of status group	51.0%	49.0%	100.0%
		% within Did they delay?	61.0%	41.4%	49.5%
		% of Total	25.3%	24.2%	49.5%
	Total	Std. Residual	-1.5	1.2	
		Count	82	116	198
		Expected Count	82.0	116.0	198.0
		% within Types of status group	41.4%	58.6%	100.0%
		% within Did they delay?	100.0%	100.0%	100.0%
Graduate	Non-started group	% of Total	41.4%	58.6%	100.0%
		Count	3	22	25
		Expected Count	3.7	21.3	25.0
		% within Types of status group	12.0%	88.0%	100.0%
		% within Did they delay?	33.3%	42.3%	41.0%
	Started group	% of Total	4.9%	36.1%	41.0%
		Std. Residual	-.4	.1	
		Count	6	30	36
		Expected Count	5.3	30.7	36.0
		% within Types of status group	16.7%	83.3%	100.0%
Total	% within Did they?	66.7%	57.7%	59.0%	
	% of Total	9.8%	49.2%	59.0%	
	Std. Residual	.3	-.1		
	Count	9	52	61	
	Expected Count	9.0	52.0	61.0	
		% within Types of status group	14.8%	85.2%	100.0%
		% within Did they delay?	100.0%	100.0%	100.0%

		% of Total	14.8%	85.2%	100.0%	
		Count	35	90	125	
		Expected Count	43.9	81.1	125.0	
Total	Non-started group	% within Types of status group	28.0%	72.0%	100.0%	
		% within Did they delay?	38.5%	53.6%	48.3%	
		% of Total	13.5%	34.7%	48.3%	
			Std. Residual	-1.3	1.0	
			Count	56	78	134
			Expected Count	47.1	86.9	134.0
		Started group	% within Types of status group	41.8%	58.2%	100.0%
			% within Did they delay?	61.5%	46.4%	51.7%
			% of Total	21.6%	30.1%	51.7%
			Std. Residual	1.3	-1.0	
			Count	91	168	259
			Expected Count	91.0	168.0	259.0
	Total	% within Types of status group	35.1%	64.9%	100.0%	
		% within Did they?	100.0%	100.0%	100.0%	
		% of Total	35.1%	64.9%	100.0%	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	5.397 ^a	1	.020	.027	.014	
Continuity Correction ^b	4.809	1	.028			
Likelihood Ratio	5.435	1	.020	.027	.014	
Fisher's Exact Test				.027	.014	
Linear-by-Linear Association	5.376 ^c	1	.020	.027	.014	.007
N of Valid Cases	259					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 43.92.

b. Computed only for a 2x2 table

c. The standardized statistic is -2.319.

Types of status group: Did they delay due to investment areas?

Crosstab

Types of status group		Did they delay due to investment areas?		Total
		Yes	No	
Non-started	Count	36	89	125
	Expected Count	33.3	91.7	125.0
	% within Types of status group	28.8%	71.2%	100.0%
	% within Did they delay?	52.2%	46.8%	48.3%
	% of Total	13.9%	34.4%	48.3%
	Std. Residual	.5	-.3	
Started	Count	33	101	134
	Expected Count	35.7	98.3	134.0
	% within Types of status group	24.6%	75.4%	100.0%
	% within Did they delay?	47.8%	53.2%	51.7%
	% of Total	12.7%	39.0%	51.7%
	Std. Residual	-.5	.3	
Total	Count	69	190	259
	Expected Count	69.0	190.0	259.0
	% within Types of status group	26.6%	73.4%	100.0%
	% within Did they delay?	100.0%	100.0%	100.0%
	% of Total	26.6%	73.4%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.576 ^a	1	.448	.484	.268	
Continuity Correction ^b	.383	1	.536			
Likelihood Ratio	.576	1	.448	.484	.268	
Fisher's Exact Test				.484	.268	
Linear-by-Linear Association	.574 ^c	1	.449	.484	.268	.084
N of Valid Cases	259					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 33.30.

b. Computed only for a 2x2 table

c. The standardized statistic is .758.

Types of status group: Did they delay due to access to credit?

Crosstab

Types of status group		Did they delay due to access to credit?		Total
		Yes	No	
Non-started	Count	68	16	84
	Expected Count	55.8	28.2	84.0
	% within Types of status group	81.0%	19.0%	100.0%
	% within Did they delay?	60.2%	28.1%	49.4%
	% of Total	40.0%	9.4%	49.4%
	Std. Residual	1.6	-2.3	
Started	Count	45	41	86
	Expected Count	57.2	28.8	86.0
	% within Types of status group	52.3%	47.7%	100.0%
	% within Did they delay?	39.8%	71.9%	50.6%
	% of Total	26.5%	24.1%	50.6%
	Std. Residual	-1.6	2.3	
Total	Count	113	57	170
	Expected Count	113.0	57.0	170.0
	% within Types of status group	66.5%	33.5%	100.0%
	% within Did they delay?	100.0%	100.0%	100.0%
	% of Total	66.5%	33.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	15.625 ^a	1	.000	.000	.000	
Continuity Correction ^b	14.367	1	.000			
Likelihood Ratio	16.037	1	.000	.000	.000	
Fisher's Exact Test				.000	.000	
Linear-by-Linear Association	15.533 ^c	1	.000	.000	.000	.000
N of Valid Cases	170					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 28.16.

- b. Computed only for a 2x2 table
- c. The standardized statistic is 3.941.

Types of status group: Did they delay due to interest rate?

Crosstab

Types of status group		Did they delay due to interest rate?		Total
		Yes	No	
Non-started	Count	19	61	80
	Expected Count	21.6	58.4	80.0
	% within Types of status group	23.8%	76.2%	100.0%
	% within Did they delay?	43.2%	51.3%	49.1%
	% of Total	11.7%	37.4%	49.1%
	Std. Residual	-.6	.3	
Started	Count	25	58	83
	Expected Count	22.4	60.6	83.0
	% within Types of status group	30.1%	69.9%	100.0%
	% within Did they delay?	56.8%	48.7%	50.9%
	% of Total	15.3%	35.6%	50.9%
	Std. Residual	.5	-.3	
Total	Count	44	119	163
	Expected Count	44.0	119.0	163.0
	% within Types of status group	27.0%	73.0%	100.0%
	% within Did they delay?	100.0%	100.0%	100.0%
	% of Total	27.0%	73.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.839 ^a	1	.360	.383	.230	
Continuity Correction ^b	.547	1	.460			
Likelihood Ratio	.841	1	.359	.383	.230	
Fisher's Exact Test				.383	.230	
Linear-by-Linear Association	.834 ^c	1	.361	.383	.230	.093
N of Valid Cases	163					

- a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 21.60.
- b. Computed only for a 2x2 table
- c. The standardized statistic is -.913.

Types of status group: Did they delay due to infrastructure facilities?

Crosstab

Types of status group		Did they delay due to infrastructure facilities?		Total
		Yes	No	
Non-started	Count	47	65	112
	Expected Count	30.9	81.1	112.0
	% within Types of status group	42.0%	58.0%	100.0%
	% within Did they?	74.6%	39.4%	49.1%
	% of Total	20.6%	28.5%	49.1%
	Std. Residual	2.9	-1.8	
Started	Count	16	100	116
	Expected Count	32.1	83.9	116.0
	% within Types of status group	13.8%	86.2%	100.0%
	% within Did they delay?	25.4%	60.6%	50.9%
	% of Total	7.0%	43.9%	50.9%
	Std. Residual	-2.8	1.8	
Total	Count	63	165	228
	Expected Count	63.0	165.0	228.0
	% within Types of status group	27.6%	72.4%	100.0%
	% within Did they delay?	100.0%	100.0%	100.0%
	% of Total	27.6%	72.4%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	22.615 ^a	1	.000	.000	.000	
Continuity Correction ^b	21.228	1	.000			
Likelihood Ratio	23.349	1	.000	.000	.000	
Fisher's Exact Test				.000	.000	
Linear-by-Linear Association	22.516 ^c	1	.000	.000	.000	.000
N of Valid Cases	228					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 30.95.

b. Computed only for a 2x2 table

c. The standardized statistic is 4.745.

Types of status group: Did they delay due to land access?

Crosstab

Types of status group		Did they delay due to land access?		Total
		Yes	No	
Non-started	Count	45	80	125
	Expected Count	40.1	84.9	125.0
	% within Types of status group	36.0%	64.0%	100.0%
	% within Did they delay?	54.2%	45.5%	48.3%
	% of Total	17.4%	30.9%	48.3%
	Std. Residual	.8	-.5	
Started	Count	38	96	134
	Expected Count	42.9	91.1	134.0
	% within Types of status group	28.4%	71.6%	100.0%
	% within Did they delay?	45.8%	54.5%	51.7%
	% of Total	14.7%	37.1%	51.7%
	Std. Residual	-.8	.5	
Total	Count	83	176	259
	Expected Count	83.0	176.0	259.0
	% within Types of status group	32.0%	68.0%	100.0%
	% within Did they delay?	100.0%	100.0%	100.0%
	% of Total	32.0%	68.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	1.734 ^a	1	.188	.230	.118	
Continuity Correction ^b	1.401	1	.237			
Likelihood Ratio	1.735	1	.188	.230	.118	
Fisher's Exact Test				.230	.118	
Linear-by-Linear Association	1.728 ^c	1	.189	.230	.118	.045
N of Valid Cases	259					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 40.06.

b. Computed only for a 2x2 table

c. The standardized statistic is 1.314.

Types of status group: Didn't they delay due to judicial system?

Crosstab

Types of status group		Did they delay due to judicial system?		Total
		Yes	No	
Non-started	Count	77	47	124
	Expected Count	71.4	52.6	124.0
	% within Types of status group	62.1%	37.9%	100.0%
	% within Did they delay?	52.0%	43.1%	48.2%
	% of Total	30.0%	18.3%	48.2%
	Std. Residual	.7	-.8	
Started	Count	71	62	133
	Expected Count	76.6	56.4	133.0
	% within Types of status group	53.4%	46.6%	100.0%
	% within Did they delay?	48.0%	56.9%	51.8%
	% of Total	27.6%	24.1%	51.8%
	Std. Residual	-.6	.7	
Total	Count	148	109	257
	Expected Count	148.0	109.0	257.0
	% within Types of status group	57.6%	42.4%	100.0%
	% within Did they delay?	100.0%	100.0%	100.0%
	% of Total	57.6%	42.4%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	1.995 ^a	1	.158	.167	.099	
Continuity Correction ^b	1.654	1	.198			
Likelihood Ratio	1.999	1	.157	.167	.099	
Fisher's Exact Test				.167	.099	
Linear-by-Linear Association	1.987 ^c	1	.159	.167	.099	.037
N of Valid Cases	257					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 52.59.

b. Computed only for a 2x2 table

c. The standardized statistic is -1.410.

Types of status group: Did they delay due to bureaucratic red tape?

Crosstab

Types of status group		Did they delay due to bureaucratic red tape?		Total
		Yes	No	
Non-started	Count	107	18	125
	Expected Count	96.5	28.5	125.0
	% within Types of status group	85.6%	14.4%	100.0%
	% within Did they delay?	53.5%	30.5%	48.3%
	% of Total	41.3%	6.9%	48.3%
	Std. Residual	1.1	-2.0	
Started	Count	93	41	134
	Expected Count	103.5	30.5	134.0
	% within Types of status group	69.4%	30.6%	100.0%
	% within Did they delay?	46.5%	69.5%	51.7%
	% of Total	35.9%	15.8%	51.7%
	Std. Residual	-1.0	1.9	
Total	Count	200	59	259
	Expected Count	200.0	59.0	259.0
	% within Types of status group	77.2%	22.8%	100.0%
	% within Did they delay?	100.0%	100.0%	100.0%
	% of Total	77.2%	22.8%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	9.645 ^a	1	.002	.003	.001	
Continuity Correction ^b	8.746	1	.003			
Likelihood Ratio	9.876	1	.002	.002	.001	
Fisher's Exact Test				.003	.001	
Linear-by-Linear Association	9.608 ^c	1	.002	.003	.001	.001
N of Valid Cases	259					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 28.47.

b. Computed only for a 2x2 table

c. The standardized statistic is 3.100.

Types of status group: Did they delay due to corruption?

Crosstab

Types of status group		Did they delay due to corruption?		Total
		Yes	No	
Non-started	Count	75	49	124
	Expected Count	61.8	62.2	124.0
	% within Types of status group	60.5%	39.5%	100.0%
	% within Did they delay?	60.0%	38.9%	49.4%
	% of Total	29.9%	19.5%	49.4%
	Std. Residual	1.7	-1.7	
Started	Count	50	77	127
	Expected Count	63.2	63.8	127.0
	% within Types of status group	39.4%	60.6%	100.0%
	% within Did they delay?	40.0%	61.1%	50.6%
	% of Total	19.9%	30.7%	50.6%
	Std. Residual	-1.7	1.7	
Total	Count	125	126	251
	Expected Count	125.0	126.0	251.0
	% within Types of status group	49.8%	50.2%	100.0%
	% within Did they delay?	100.0%	100.0%	100.0%
	% of Total	49.8%	50.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	11.188 ^a	1	.001	.001	.001	
Continuity Correction ^b	10.359	1	.001			
Likelihood Ratio	11.272	1	.001	.001	.001	
Fisher's Exact Test				.001	.001	
Linear-by-Linear Association	11.143 ^c	1	.001	.001	.001	.000
N of Valid Cases	251					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 61.75.

b. Computed only for a 2x2 table

c. The standardized statistic is 3.338.

Types of status group: Did they delay due to investment incentives?

Crosstab

Types of status group		Did they delay due to investment incentives?		Total
		Yes	No	
Non-started	Count	13	112	125
	Expected Count	13.5	111.5	125.0
	% within Types of status group	10.4%	89.6%	100.0%
	% within Did they delay?	46.4%	48.5%	48.3%
	% of Total	5.0%	43.2%	48.3%
	Std. Residual	-.1	.0	
	Count	15	119	134
	Expected Count	14.5	119.5	134.0
	% within Types of status group	11.2%	88.8%	100.0%
	% within Did they delay?	53.6%	51.5%	51.7%
Total	% of Total	5.8%	45.9%	51.7%
	Std. Residual	.1	.0	
	Count	28	231	259
	Expected Count	28.0	231.0	259.0
	% within Types of status group	10.8%	89.2%	100.0%
	% within Did they delay?	100.0%	100.0%	100.0%
	% of Total	10.8%	89.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.042 ^a	1	.837	.845	.499	
Continuity Correction ^b	.000	1	.996			
Likelihood Ratio	.042	1	.837	.845	.499	
Fisher's Exact Test				1.000	.499	
Linear-by-Linear Association	.042 ^c	1	.837	.845	.499	.155
N of Valid Cases	259					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.51.

b. Computed only for a 2x2 table

c. The standardized statistic is -.205.

Types of status group: Did they delay due to risks of political instability?

Crosstab

Types of status group		Did they delay due to risks of political instability?		Total
		Yes	No	
Non-started	Count	24	101	125
	Expected Count	17.4	107.6	125.0
	% within Types of status group	19.2%	80.8%	100.0%
	% within Did they delay?	66.7%	45.3%	48.3%
	% of Total	9.3%	39.0%	48.3%
	Std. Residual	1.6	-.6	
Started	Count	12	122	134
	Expected Count	18.6	115.4	134.0
	% within Types of status group	9.0%	91.0%	100.0%
	% within Did they delay?	33.3%	54.7%	51.7%
	% of Total	4.6%	47.1%	51.7%
	Std. Residual	-1.5	.6	
Total	Count	36	223	259
	Expected Count	36.0	223.0	259.0
	% within Types of status group	13.9%	86.1%	100.0%
	% within Did they?	100.0%	100.0%	100.0%
	% of Total	13.9%	86.1%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	5.672 ^a	1	.017	.020	.014	
Continuity Correction ^b	4.848	1	.028			
Likelihood Ratio	5.745	1	.017	.020	.014	
Fisher's Exact Test				.020	.014	
Linear-by-Linear Association	5.650 ^c	1	.017	.020	.014	.009
N of Valid Cases	259					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 17.37.

b. Computed only for a 2x2 table

c. The standardized statistic is 2.377.

Types of status group: Did they delay due to investment location?

Crosstab

Types of status group		Did they delay due to investment location?		Total
		Yes	No	
Non-started	Count	2	121	123
	Expected Count	12.0	111.0	123.0
	% within Types of status group	1.6%	98.4%	100.0%
	% within Did they delay?	8.0%	52.2%	47.9%
	% of Total	0.8%	47.1%	47.9%
	Std. Residual	-2.9	.9	
Started	Count	23	111	134
	Expected Count	13.0	121.0	134.0
	% within Types of status group	17.2%	82.8%	100.0%
	% within Did they delay?	92.0%	47.8%	52.1%
	% of Total	8.9%	43.2%	52.1%
	Std. Residual	2.8	-.9	
Total	Count	25	232	257
	Expected Count	25.0	232.0	257.0
	% within Types of status group	9.7%	90.3%	100.0%
	% within Did they delay?	100.0%	100.0%	100.0%
	% of Total	9.7%	90.3%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	17.633 ^a	1	.000	.000	.000	
Continuity Correction ^b	15.907	1	.000			
Likelihood Ratio	20.679	1	.000	.000	.000	
Fisher's Exact Test				.000	.000	
Linear-by-Linear Association	17.564 ^c	1	.000	.000	.000	.000
N of Valid Cases	257					

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.96.

b. Computed only for a 2x2 table

c. The standardized statistic is -4.191.

APPENDIX B: INVESTMENT AREAS

Investment areas	Status group	Delayed		Not-delayed		Total	
		Freq.	%	Freq.	%.	Freq.	%
Food industry	Non-started	30	94	2	6	32	100
	Started	23	47	26	53	49	100
	Total	53	68	28	32	81	100
Beverage industry	Non-started	2	100	0	0	2	100
	Started	1	33	2	67	3	100
	Total	3	60	2	40	5	100
Textile and textile products industry	Non-started	3	100	0	0	3	100
	Started	2	50	2	50	4	100
	Total	5	71	2	29	7	100
Leather and leather products industry	Non-started	3	100	0	0	3	100
	Started	2	67	1	33	3	100
	Total	5	83	1	17	6	100

Investment areas	Status group	Delayed		Not-delayed		Total	
		Freq.	%	Freq.	%	Freq.	%
Wood products industry	Non-started	5	100	0	0	5	100
	Started	1	50	1	50	2	100
	Total	6	86	1	14	7	100
Paper and paper products industry	Non-started	6	100	0	0	6	100
	Started	1	50	1	50	2	100
	Total	7	87	1	13	8	100
Printing industry	Non-started	4	100	0	0	4	100
	Started	0	0	1	100	1	100
	Total	4	80	1	100	5	100
Chemical and chemical products industry	Non-started	6	100	0	0	6	100
	Started	3	75	1	25	4	100
	Total	9	90	1	10	10	100

Investment areas	Status group	Delayed		Not-delayed		Total	
		Freq.	%	Freq.	%	Freq.	%
Pharmaceutical product industry	Non-started	3	100	0	0	3	100
	Started	2	100	0	0	2	100
	Total	5	100	0	0	5	100
Rubber and plastics products ind.	Non-started	3	100	0	0	3	100
	Started	7	70	3	30	10	100
	Total	10	77	3	23	13	100
Non-metallic mineral products ind.	Non-started	21	100	0	0	21	100
	Started	7	37	12	63	19	100
	Total	28	70	12	30	40	100
Basic metals industry	Non-started	13	100	0	0	13	100
	Started	7	39	11	61	18	100
	Total	20	65	11	35	31	100

Investment areas	Status group	Delayed		Not-delayed		Total	
		Freq.	%	Freq.	%	Freq.	%
Fabricated metal products industry	Non-started	4	100	0	0	4	100
	Started	5	71	2	29	7	100
	Total	9	82	2	18	11	100
Electrical products industry	Non-started	3	100	0	0	3	100
	Started	0	0	0	0	0	0
	Total	3	100	0	0	3	100
Machinery/equipment industry	Non-started	17	100	0	0	17	100
	Started	4	50	4	50	8	100
	Total	21	84	4	16	25	100
Others	Non-started	0	0	0	0	0	0
	Started	0	0	1	100	1	100
	Total	0	0	1	100	1	100
Total of all industries	Non-started	125	100	0	0	125	100
	Started	65	49	68	51	133	100
	Total	190	74	68	26	258	100

APPENDIX C: ACCESS TO INFRASTRUCTURE FACILITIES

i. Overall access of infrastructure facilities response by all private investors

Infrastructure	Quality and efficiency of services	Delayed		Non-delayed		Total	
		Freq.	%	Freq.	%	Freq.	%
Road authority	Good	171	92	64	89	235	92
	Bad	14	8	7	11	21	8
Telephone authority	Good	179	96	62	86	241	93
	Bad	7	4	10	14	17	7
Electric power	Good	106	57	48	67	154	60
	Bad	80	43	24	33	104	40
Water authority	Good	113	61	56	78	169	66
	Bad	73	39	16	22	89	34
Postal services	Good	183	98	69	96	252	98
	Bad	3	2	3	4	6	2
Port services	Good	154	93	53	74	207	90
	Bad	11	7	12	26	23	10
Investment office	Good	172	92	67	93	239	93
	Bad	14	8	5	7	19	7
Municipality	Good	98	53	51	71	149	58
	Bad	86	47	21	29	107	42
Customs and Revenue	Good	142	80	57	81	199	80
	Bad	36	20	13	19	49	20
Others	Good			1		1	
	Bad						
Total	Good	1318	80	528	83	1846	81
	Bad	324	20	111	17	435	19
Average (10)	Good	146	80	59	83	205	81
	Bad	36	20	12	17	48	19

ii. Overall access of infrastructure facilities response by started group

Infrastructure	Quality and efficiency of services	Delayed		Non-delayed		Total	
		Freq.	%	Freq.	%	Freq.	%
Road authority	Good	58	89	60	90	118	89
	Bad	7	11	7	10	14	11
Telephone authority	Good	60	92	58	85	118	89
	Bad	5	8	10	15	15	11
Electric power	Good	46	71	46	68	92	69
	Bad	19	29	22	32	41	31
Water authority	Good	50	83	54	79	104	78
	Bad	15	17	14	21	29	22
Postal services	Good	64	98	65	96	129	97
	Bad	1	2	3	4	4	3
Port services	Good	50	89	49	80	99	85
	Bad	6	11	12	20	18	15
Investment office	Good	58	89	64	94	122	92
	Bad	7	11	4	6	11	8
Municipality	Good	42	65	49	72	91	68
	Bad	23	35	19	28	42	32
Customs and Revenue	Good	52	85	54	82	106	83
	Bad	9	15	12	18	21	17
Others	Good	0	0	1	100	1	100
	Bad	0	0	0	0	0	0
Total	Good	480	84	500	83	980	85
	Bad	92	16	103	17	195	15
Average (10)	Good	48	84	50	85	98	84
	Bad	9	16	10	15	19	16

iii. Overall access of infrastructure facilities response by non-started group

Infrastructure	Quality and efficiency of services	Delayed		Non-delayed		Total	
		Freq.	%	Freq.	%	Freq.	%
Road authority	Good	113	94	4	100	117	94
	Bad	7	6	0	0	7	6
Telephone authority	Good	119	98	4	100	123	98
	Bad	2	2	0	0	2	2
Electric power	Good	60	49.6	2	50	62	49.6
	Bad	61	50.4	2	50	63	50.4
Water authority	Good	63	52	2	50	65	52
	Bad	58	48	2	50	60	48
Postal services	Good	119	98	4	100	123	98
	Bad	2	2	0	0	2	2
Port services	Good	104	96	4	100	108	96
	Bad	5	4	0	0	5	4
Investment office	Good	110	94	3	75	117	94
	Bad	7	6	1	25	8	6
Municipality	Good	56	47	2	50	58	47
	Bad	66	53	2	50	68	53
Customs and Revenue	Good	90	77	3	75	93	77
	Bad	27	23	1	25	28	23
Others	Good	0	0	0	0	0	0
	Bad	0	0	0	0	0	0
Total	Good	866	78	0	0	866	78
	Bad	243	22	0	0	243	22
Average (10)	Good	87	78	0	0	87	78
	Bad	24	22	0	0	24	22

APPENDIX D: SPECIFICATON TESTS

- For entire private investors

```

No. of subjects      =          215          Number of obs      =          215
No. of failures     =           38
Time at risk        =          9453

Log pseudolikelihood = -160.61179          Wald chi2(24)      = 16964.76
                                                Prob > chi2       = 0.0000
    
```

_t	Haz. Ratio	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
educ	1.033874	.060814	0.57	0.571	.9212951	1.16021
accland	.7863514	.4377426	-0.43	0.666	.2641031	2.341315
accred	.8528625	.4600843	-0.30	0.768	.2962721	2.45509
invtyp1						
2	.4261691	.284685	-1.28	0.202	.1150724	1.578311
3	9.01e-17	8.29e-17	-40.14	0.000	1.48e-17	5.47e-16
4	9.02e-17	6.01e-17	-55.45	0.000	2.44e-17	3.33e-16
5	.8540523	.7272267	-0.19	0.853	.1609478	4.531936
6	2.56e-16	1.80e-16	-51.26	0.000	6.50e-17	1.01e-15
7	.3298771	.3132343	-1.17	0.243	.0512974	2.121335
8	3.25e-17	4.37e-17	-28.22	0.000	2.32e-18	4.54e-16
9	.5038201	.4425543	-0.78	0.435	.0900704	2.818181
10	.6520684	.2951329	-0.94	0.345	.2685534	1.583273
11	.5985619	.3054227	-1.01	0.315	.2201782	1.627211
12	.2478775	.2937651	-1.18	0.239	.0242918	2.529383
14	1.28e-16	1.15e-16	-40.61	0.000	2.19e-17	7.49e-16
15	7.91e-17	5.04e-17	-58.23	0.000	2.27e-17	2.76e-16
inrat	3.943876	1.848065	2.93	0.003	1.574193	9.88072
judsys	.3598874	.1903964	-1.93	0.053	.1275979	1.015056
bureta	.6377256	.3826259	-0.75	0.453	.1967549	2.067008
corrupt	.5970556	.3051861	-1.01	0.313	.2192409	1.625953
invinc	.561424	.4653851	-0.70	0.486	.1105856	2.850253
polins	.5758247	.478464	-0.66	0.507	.1129823	2.934745
invloc	6.754458	2.843994	4.54	0.000	2.959295	15.41674
infrstr1a	.5619453	.1334421	-2.43	0.015	.3528287	.8950025

- For started group (Implementation & operation statuses)

```

No. of subjects = 106           Number of obs = 106
No. of failures = 38
Time at risk = 3013
Log pseudolikelihood = -143.28594
Wald chi2(22) = 7540.13
Prob > chi2 = 0.0000

```

_t	Robust					
	Haz. Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
educ	1.059013	.0585137	1.04	0.299	.95032	1.180138
accland	.9020224	.450644	-0.21	0.836	.3388153	2.401439
accred	1.431114	.7487494	0.69	0.493	.5132526	3.990408
invtyp1						
2	3.69e-16	3.52e-16	-37.28	0.000	5.70e-17	2.39e-15
3	.508343	.3478259	-0.99	0.323	.1329643	1.943473
4	7.22e-16	8.13e-16	-30.99	0.000	7.97e-17	6.55e-15
5	7.78e-16	9.87e-16	-27.42	0.000	6.47e-17	9.35e-15
6	1.545061	.9059136	0.74	0.458	.489623	4.875616
8	.2229821	.2108654	-1.59	0.113	.0349399	1.423043
10	.2910962	.302846	-1.19	0.236	.0378859	2.236639
11	.934268	.4543541	-0.14	0.889	.3601757	2.42342
12	.6163383	.2739232	-1.09	0.276	.2579373	1.472733
13	.2527867	.2759065	-1.26	0.208	.0297647	2.146874
16	5.45e-16	5.03e-16	-38.02	0.000	8.89e-17	3.33e-15
inrat	2.037712	.9757267	1.49	0.137	.797183	5.208677
judsys	.4533852	.2418342	-1.48	0.138	.159382	1.28972
bureta	.6018874	.367993	-0.83	0.406	.18159	1.99498
corrupt	.6523761	.3584489	-0.78	0.437	.2222308	1.915102
invinc	.1636076	.1545032	-1.92	0.055	.0257022	1.041447
polins	.8114946	.5937262	-0.29	0.775	.193423	3.404577
invloc	4.196411	1.847801	3.26	0.001	1.770392	9.946873
factor2	.4933319	.1223361	-2.85	0.004	.3034302	.8020834

```

No. of subjects = 106           Number of obs = 106
No. of failures = 38
Time at risk = 3013
Log likelihood = -143.15261
LR chi2(2) = 41.59
Prob > chi2 = 0.0000

```

_t	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
_hat	1.051976	.1875737	5.61	0.000	.6843383	1.419614
_hatsq	.0220273	.0121524	1.81	0.070	-.001791	.0458456

Collinearity Diagnostics

Variable	VIF	SQRT VIF	Tolerance	R- Squared
educ	1.10	1.05	0.9052	0.0948
accland	1.48	1.22	0.6757	0.3243
accred	1.70	1.30	0.5891	0.4109
invtyp1	1.08	1.04	0.9295	0.0705
inrat	1.16	1.08	0.8624	0.1376
judsys	1.66	1.29	0.6024	0.3976
bureta	1.53	1.24	0.6516	0.3484
corrupt	1.55	1.25	0.6449	0.3551
invinc	1.14	1.07	0.8802	0.1198
polins	1.83	1.35	0.5466	0.4534
invloc	1.07	1.03	0.9353	0.0647
factor2	1.76	1.33	0.5689	0.4311
Mean VIF	1.42			

- For non-started group (Pre-implementation status)

Cox regression -- Breslow method for ties

```

No. of subjects      =          215                Number of obs      =          215
No. of failures     =           51
Time at risk        =          6471
Log pseudolikelihood = -238.45585
Wald chi2(25)      = 11547.80
Prob > chi2        = 0.0000
  
```

_t	Haz. Ratio	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
educ	1.002549	.0517416	0.05	0.961	.9060982	1.109267
accland	.8044996	.3738691	-0.47	0.640	.3235589	2.000315
accred	.9075571	.3886886	-0.23	0.821	.3920318	2.101003
invtyp1						
2	3.721918	3.64845	1.34	0.180	.5449636	25.41945
3	.4113838	.2914285	-1.25	0.210	.1026236	1.6491
4	.7909664	.8592332	-0.22	0.829	.0940786	6.650054
5	1.55e-15	9.02e-16	-58.56	0.000	4.95e-16	4.85e-15
6	.5700535	.5164734	-0.62	0.535	.0965427	3.365981
7	3.00e-15	1.89e-15	-53.03	0.000	8.70e-16	1.03e-14
8	.3189939	.3088742	-1.18	0.238	.0478172	2.128044
9	1.38e-15	1.54e-15	-30.64	0.000	1.54e-16	1.23e-14
10	.6376117	.4202971	-0.68	0.495	.1751726	2.320846
11	.5944514	.2432762	-1.27	0.204	.2665425	1.325764
12	.5802777	.2537229	-1.24	0.213	.2462936	1.367158
13	.212469	.2390505	-1.38	0.169	.0234208	1.927476
15	1.72e-15	1.51e-15	-38.75	0.000	3.09e-16	9.62e-15
16	.4352454	.3436413	-1.05	0.292	.0926149	2.045442
inrat	4.415411	1.644153	3.99	0.000	2.128197	9.160736
judsys	.5269336	.2169822	-1.56	0.120	.2350963	1.181044
bureta	.8047878	.3998161	-0.44	0.662	.3039535	2.130864
corrupt	.8345099	.3436616	-0.44	0.660	.3723026	1.87054
invinc	1.052308	.8818085	0.06	0.951	.2036368	5.437874
polins	.732676	.4800937	-0.47	0.635	.2028398	2.646493
invloc	5.96439	2.131494	5.00	0.000	2.960548	12.016
infrstr1a	.578503	.1126304	-2.81	0.005	.3949869	.8472831

```

No. of subjects =          215                Number of obs =          215
No. of failures =           51
Time at risk    =          6471
Log likelihood   = -238.44178
LR chi2(2)      = 60.53
Prob > chi2     = 0.0000
  
```

_t	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
_hat	.9889959	.1502052	6.58	0.000	.6945991	1.283393
_hatsq	.015881	.0931649	0.17	0.865	-.1667189	.1984809

(obs=216)

Collinearity Diagnostics

Variable	VIF	SQRT VIF	Tolerance	R- Squared
educ	1.10	1.05	0.9080	0.0920
accland	1.51	1.23	0.6642	0.3358
accred	1.79	1.34	0.5578	0.4422
invtyp1	1.08	1.04	0.9295	0.0705
inrat	1.17	1.08	0.8558	0.1442
judsys	1.35	1.16	0.7396	0.2604
bureta	1.49	1.22	0.6720	0.3280
corrupt	1.53	1.24	0.6521	0.3479
invinc	1.13	1.06	0.8871	0.1129
polins	2.06	1.43	0.4862	0.5138
invloc	1.07	1.03	0.9369	0.0631
infrstr1a	2.20	1.48	0.4549	0.5451

Mean VIF 1.46

	Eigenval	Cond Index
1	6.8972	1.0000
2	1.7770	1.9701
3	0.9833	2.6485
4	0.7754	2.9825
5	0.7375	3.0581
6	0.4968	3.7259
7	0.3940	4.1839
8	0.2903	4.8746
9	0.2401	5.3598
10	0.2090	5.7448
11	0.1156	7.7250
12	0.0637	10.4018
13	0.0201	18.5094

Condition Number 18.5094

Eigenvalues & Cond Index computed from scaled raw sscp (w/ intercept)

Det(correlation matrix) 0.0947

APPENDIX E: CORRELATION MATRIX

Variables	1	2	3	4	5	6	7	15	16	17	18	19	20
1	1.000	-.013	-.018	.005	.261	.028	.105	.059	.057	-.246	-.045	.060	.198
2	-.013	1.000	.270	.325	.586	.508	.487	.225	.416	.419	.200	.404	.403
3	-.018	.270	1.000	.071	.091	.267	.072	-.012	.149	.391	.019	-.007	.163
4	.005	.325	.071	1.000	.285	.236	.264	.386	.271	.162	.242	.308	.297
5	.261	.586	.091	.285	1.000	.371	.441	.204	.416	.286	.264	.418	.641
6	.028	.508	.267	.236	.371	1.000	.290	.023	.292	.373	.209	.498	.247
7	.069	.531	.262	.268	.446	.864	.391	.062	.240	.284	.090	.485	.402
8	-.030	.353	.085	.059	.115	.315	.463	.248	.193	.235	.000	.185	.095
9	-.153	.289	-.065	.205	.236	.006	.506	.229	.219	.137	.278	.231	.318
10	.105	.487	.072	.264	.441	.290	1.000	.301	.481	.233	.206	.215	.438
11	-.177	.215	.028	.129	.177	.066	.425	.244	.207	.313	.138	.334	.144
12	.162	.301	-.055	-.028	.223	.078	.416	-.106	-.028	.046	-.030	.065	.057
13	-.051	.438	-.014	.343	.325	.225	.632	.364	.393	.423	.161	.258	.374
14	.020	.615	.126	.262	.551	.464	.561	.317	.454	.464	.315	.478	.652
15	.059	.225	-.012	.386	.204	.023	.301	1.000	.446	.221	.343	.079	.229
16	.057	.416	.149	.271	.416	.292	.481	.446	1.000	.513	.411	.199	.395
17	-.246	.419	.391	.162	.286	.373	.233	.221	.513	1.000	.548	.315	.365
18	-.045	.200	.019	.242	.264	.209	.206	.343	.411	.548	1.000	.377	.412
19	.060	.404	-.007	.308	.418	.498	.215	.079	.199	.315	.377	1.000	.294
20	.198	.403	.163	.297	.641	.247	.438	.229	.395	.365	.412	.294	1.000
1		.460	.444	.485	.022	.417	.213	.328	.333	.029	.366	.324	.064
2			.018	.006	.000	.000	.000	.042	.000	.000	.063	.001	.001
3				.294	.245	.020	.292	.464	.128	.001	.444	.480	.107
4					.014	.035	.021	.001	.018	.108	.031	.008	.011
5						.002	.000	.059	.000	.013	.021	.000	.000
6							.012	.432	.012	.002	.054	.000	.029
7								.320	.032	.014	.248	.000	.001
8								.028	.070	.035	.500	.079	.235
9								.039	.047	.149	.016	.038	.007
10								.010	.000	.037	.057	.049	.000
11								.030	.056	.007	.146	.005	.136
12								.210	.417	.363	.410	.311	.332
13								.002	.001	.000	.110	.023	.002
14								.007	.000	.000	.007	.000	.000
15									.000	.045	.004	.274	.039
16										.000	.001	.064	.001
17											.000	.007	.002
18												.001	.001
19													.011
20													

APPENDIX F: SUMMARY OF ARTICLES

Appendix F (1): Summary of Articles on Private Investments by previous studies

Ser. No.	Author and year	Title of the study	Method or techniques used	Variables used
1	Francis Naa-Idar, Desmond Tutu Ayentimi, Joseph Magnus Frimpong (2012)	A Time Series Analysis of Determinants of Private Investment in Ghana (1960-2010)	co-integration and error correction modeling	GDP, inflation, political stability, external debt, exchange rate, public investment, aid, trade openness and credit provided to private sector.
2	Pinondang Nainggolan, Ramli, Murni Daulay, Rujiman (2015) in Indonesia	An Analysis of Determinant on Private Investment in North Sumatra Province, Indonesia	Error Correction Model (ECM) method	Economic growth, government investment, interest rate, exchange rates, investment credit, inflation, international interest rates, and economic crisis
3	BATISTAR MWANGI KINGORI (2015)	AN ANALYSIS OF THE DETERMINANTS OF PRIVATE SECTOR INVESTMENT IN KENYA USING THE AUTOREGRESSIVE DISTRIBUTED LAG (ARDL) APPROACH	ARDL model	Real gross domestic product, Openness, Real interest rate, Inflation, Credit to the private sector, Real exchange rate, Foreign direct investment, External debt, Public investment
4	MANJAPPA. D. HOSAMANE AND NIRANJAN, R. (2010)	DETERMINANTS OF INVESTMENT PATTERN IN INDIAN MANUFACTURING INDUSTRIES A PANEL DATA STUDY	Panel estimation models	Output, sales, net assets, bank borrowings, equity capital, cost of capital

Ser. No.	Author and year	Title of the study	Method or techniques used	Variables used
5	Muhdin Muhammedhussen Batu (2016)	Determinants of Private Investment: A Systematic Review	Systematic review	Gross Domestic product, Public Investment, Exchange Rate, Inflation, Interest rate, Credit, International Trade,
6	PABLO ACOSTA and ANDRÉS LOZA (2005)	SHORT AND LONG RUN DETERMINANTS OF PRIVATE INVESTMENT IN ARGENTINA	ADF tests	exchange rate, trade liberalization, public investment, credit markets
7	Islam Mohamed Elbanna (2016)	Determinants of Private Investment in Egypt	Multiple - Regression Models	Gross Domestic Production (GDP), Government investment (GI), Net Commercial banks and other lending (PPG + PNG), lending interest rate (IR), exchange rate (EXCHR), Money supply (MS), and foreign direct investment (FDI)
8	Hailu Adugna (2013)	Determinants of private investment in Ethiopia	Multiple regressions – using OLS model	Nominal Public Investment, Real GDP Per-capita, Inflation Rate, Real Lending Interest Rate, External Debt Burden, Official Exchange Rate, International Trade as % of nominal GDP, Corporate Tax Rate as % of total corporate taxable income, Structural Dummy

Ser. No.	Author and year	Title of the study	Method or techniques used	Variables used
9	Motahareh Alsadat Majdzadeh, Arezoo Ghazanfari, Mohsen Mehr Ara (2014)	Determinants of Private Investment in Iran based on Bayesian Model Averaging	Bayesian Model Averaging (BMA) approach	internal environment variables (such as production growth, the share or structure of economic sectors in production and business cycles), external environment variables (like oil exports and import) and price and monetary variables (Like rate and the amount of credit, exchange rate and inflation)
10	Khaled Sakr, 1993	Determinants of Private Investment in Pakistan	Natural logarithms	Financing availability, Foreign capital inflows, External debt, Profitability and market structure, Uncertainty, Government expenditure
11	Al-Jundi, Salem A. Hijazi, Rafiq H, 2013	DETERMINANTS OF PRIVATE INVESTMENT IN UNITED ARAB EMIRATES	Vector Error-Correction Model	non-oil GDP and real public expenditure

12	Kadir Karagoz, 2010	Determining factors of private investments: An empirical analysis for Turkey	Auto-regressive distributed lags (ARDL) Approach	real GDP, real exchange rate, ratio of private sector credit to GDP, private external debt, inflation and trade openness
13	Niranjan. R, Manjappa. D. Hosamane, 2015	Investment behavior in private manufacturing sector in India: An empirical analysis	Generalized least squares (GLS) technique	Operating profit, borrowing, equity and financial liberalization index
14	G. G. Ambaye, T. Berhanu, G. Abera, 2014	Modeling the Determinants of Domestic Private Investment in Ethiopia	Autoregressive Distributed Lag (ARDL) model	Real GDP growth rate, Inflation, Real exchange rate, external debt, Gross domestic saving, domestic credit, government expenditure and Foreign direct investment
15	Kazeem Bello Ajide & Olukemi Lawanson, 2012	Modelling the Long Run Determinants of Domestic Private Investment in Nigeria	Auto-Regressive Distributed Lag (ARDL) bounds testing approach	private domestic investment, public investment, real gross domestic product, Rate of Inflation, Real exchange rate, Real rate of interest rate, real credit to the private sector, export divided by import price multiplied by 100, external debt, foreign direct investment

Ser. No.	Author and year	Title of the study	Method or techniques used	Variables used
16	Bazoumana Ouattara 2004	Modelling the Long Run Determinants of Private Investment in Senegal	Johansen cointegration technique and the ARDL bounds approach	public sector investment; real GDP; credit to the private sector; foreign aid; terms of trade
17	Juthathip Jongwanich and Archanun Kohpaiboon, 2006	Private Investment: Trends and Determinants in Thailand	neoclassical model (Jorgenson, 1967 and 1971)	output growth, growth of real cost of capital, availability of financing, public investment, output growth uncertainty, inflation uncertainty, terms of trade uncertainty, real exchange rate uncertainty, output gap, real exchange rate
18	Sosthène Ulrich Gnansounou, 2010	The Determinants of Private Investment in Benin: A Panel Data Analysis	First-order autoregressive process using panel data	Level of the demand, the cost of capital utilization, the cost of labour, and demand uncertainty
19	Abbas Valadkhani, 2004	What determine private investment in Iran?	Johansen Multivariate cointegration technique and a short-run dynamic model.	non-oil GDP, rate of inflation

Ser. No.	Author and year	Title of the study	Method or techniques used	Variables used
20	ABDISHU HUSSIEN, 2000	FACTORS DETERMINING PRIVATE INVESTMENT IN ETHIOPIA	Eclectic version of flexible accelerator model	Macroeconomic variables included in the regression are real per capita GDP growth rate, public investment, credit availability to private sector, foreign exchange reserve availability, real exchange rate, consumer price index and government budget deficit.
21	Eric Kwaku Attefah and Dawud K. Enning, 2016	An OLS Approach to Modelling the Determinants of Private Investment in Ghana	linear regression using OLS estimator	Real GDP, Public investment, Credit Supply to the Private Sector, Inflation, External debt, Real interest rate, Openness of the economy, Real exchange rate, corporate tax and democracy
22	<i>Sohail I. Magableh, Sameh A. Ajlou, 2016</i>	Determinants of Private Investment in Jordan: An ARDL Bounds Testing Approach	ARDL cointegration approach	Real income, real interest rates, real public investment, and the trends of private investment over time.
23	Senei Molapo, Moeti Damane, 2015	DETERMINANTS OF PRIVATE INVESTMENT IN LESOTHO	ARDL approach	GDP, gross domestic expenditure deflator, public investment, and per capita GDP

Ser. No.	Author and year	Title of the study	Method or techniques used	Variables used
24	Osmond Chigozie Agu, 2015	DETERMINANTS OF PRIVATE INVESTMENT IN NIGERIA AN ECONOMETRIC ANALYSIS	Cointegration and Error-Correction Methodology	interest rate, infrastructure proxy by electricity, public investment, political stability, and Savings Rate
25	Ogunbayo, E. I., Sangodoyin, A. A., Lawal, J. O., and V. O. Okoruwa, 2014	Macroeconomic analysis of the determinants of private investment in Nigeria	Error correction model (ECM)	Public investment; exchange rate; corruption perception index; inflation; savings rate; terms of trade; political instability; and credit to private sector.
26	Nan Geng and Papa N'Diaye, 2012	Determinants of Corporate Investment in China: Evidence from Cross-Country Firm Level Data	dynamic panel data estimator	Corporates capital expenditure (in relation to sales) on past capital expenditure, the capital output ratio squared, stock market capitalization in relation to GDP, real interest rates, the change in the real effective exchange rate, real GDP growth, the current account balance in relation to GDP, foreign debt to GDP ratio, the relative price of capital to output, and the volatility of output.

27	Salma Bibi, Urooj Akram Khan, Anbreen Bibi, 2012	DETERMINANTS OF INVESTMENT IN PAKISTAN	co integration technique	real capital formation, domestic saving, gross domestic product, trade openness
28	Rabia Saghir, Azra Khan, 2012	Determinants of Public and Private Investment An Empirical Study of Pakistan	co-integration and error correction	Government revenue, foreign aid and loan, Government investment, private investment, gross national product.
29	XHENSILA ABAZI, ERMIRA KALAJ, 2015	FIRM LEVEL DETERMINANTS OF PRIVATE INVESTMENTS IN ALBANIA	OLS3 method and for the Godness to Fit data are used R2, F-test and p-value.	Private investments, sales, liquidity, debt, profit (all in million ALL1), firm size (0 - small firms and 1 – large firms) and years of operating in the market.
30	Ghassan Omet, Hadeel Yaseen & Tareq Abukhadijeh, 2015	The Determinant of Firm Investment: The Case of Listed Jordanian Industrial Companies	Panel regression model	Net fixed investments, cash flows, Sales set for sales revenues, Debt Ratio, QRatio is the current ratio
31	Roberto Guimaraes and Olaf Unteroberdoerster, 2006	What's Driving Private Investment in Malaysia? Aggregate Trends and Firm-Level Evidence	vector-error correction model	Financial development and availability of financing, Public investment, Exchange rate volatility, sales, cash flow, stock of liquid assets, leverage, firm size.

This article is my thesis summary to compare with the methods and variables used in previous studies.

Ser. No.	Author and year	Title of the study	Method or techniques used	Variables used
1	G Y Gebrewubet, 2016	An Analysis of the Determinants of Private Investment in the Manufacturing Sector: The Case of the State of Tigray, Ethiopia	Duration model	Level of education, investment area, access to credit, interest rate, judicial system, access to land, Infrastructure facilities, Bureaucratic red tape, corruption, political stability risk, investment incentives, investment location.

Appendix F (2): Summary of Articles on Foreign Direct Investments (Except serial number 1)

Ser. No.	Author and year	Title of the study	Method or techniques used	Variables used
1	Innocent M. Michael and Jehovaness Aikaeli, 2014	Determinants of Private Investment in Tanzania	Error Correction Model and employing time series data	Public investment, exchange rate, degrees of openness of the economy, lending rate, GDP growth, and credit to private sector
2	Yuki Tsuchiya, 2015	Determinants of Foreign Direct Investment in India Regional sector wise analysis	multiple regression model based on cross-state analysis using OLS	GDP, GDP per capita, expenditure on education per capita, length of state and national highways, highway density, GDP of service sector, GDP of mining and quarrying sector, number of telephones per 100 populations, and amount of natural gas produced.
3	Carike Claassen*, Elsabe Loots† and Henri Bezuidenhout, 2011	Chinese Foreign Direct Investment in Africa	Base Model,	domestic investment of the host country, political stability, host country's annual CPI inflation rate, gross secondary enrolment rate, trade openness, host country's infrastructure
4	Dr. Emam Khalil, 2015	ANALYSIS OF DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN EGYPT (1970-2013)	ARIMA, Exp smoothing, Random walk	Gross Domestic Product GDP, Inflation, Unemployment, Population, Gross Government Expenditure, Households' Expenditure, Monetary Reserve, Domestic Investment (gross formation of fixed capital), Savings, Balance of Goods and Services, Degree of trade exchange, Exchange Rate, Interest Rate

Ser. No.	Author and year	Title of the study	Method or techniques used	Variables used
5	Fayyaz Ahmad, Muhammad Umar Draz, Su-chang Yang, 2015	Determinants of Outward Foreign Direct Investment: Evidence from ASEAN and Selected Asian Countries	OLS	Income, Interest rate, openness, exchange rate, Technology, human capital

6	P. Srinivasan and M. Kalaivani, 2015	Determinants of Foreign Institutional Investment in India: An Empirical Analysis	ARDL modelling approach	exchange rate, Indian equity market returns, returns on S&P CNX Nifty index of India, returns on S&P 500 index of US, volatility of S&P CNX Nifty, S&P 500 index, WPI of India
7	Viktorija Igošina, 2015	FDI TO EU15 AND NEW MEMBER STATES: COMPARATIVE ANALYSIS OF INFLOW DETERMINANTS	Gravity model approach	Market related variables (GDP, GDP growth rate, and existing FDI stock), Distance related variables (economical distance, trade performance, openness of imports, political and economic risk), endowment related variables (unit labour costs in host country, <i>per capita</i> income).
8	Priti Jha, 2015	IMPACT OF DETERMINANTS OF FDI ON INDIAN ECONOMY	descriptive study	Stable Policies, Economic Factors, Cheap and Skilled Labour, Basic Infrastructure, Unexplored Markets, Availability of Natural Resources, Advancement of technology

Ser. No.	Author and year	Title of the study	Method or techniques used	Variables used
9	Marco Mele, Florian Nicolai, 2015	ON THE DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN EMERGING COUNTRIES: THE CASE OF CHINA	multivariate regressions model	market seeking, resource seeking, political risk, cultural proximity, real interest rate, exchange rate, parabolic distance and openness to FDI
10	Giovanni Di Bartolomeo, Stefano Papa, 2015	Some determinants of trust formation and pro social behaviours in investment games: An experimental study	experiment based	Social history, unilateral communication (cheap talk) and meditation.
11	Dr. Hany Elshamy	The Economic Determinants of Chinese Foreign Direct Investment in Egypt	long run co integration analysis and short run analysis (ECM)	market size, endowments of natural resources, endowments of ownership advantages, inflation rates, rising levels of political and economic risk, Liberalisation of Chinese FDI policy

12	Nguyen Thi Tuong Anh, 2016	Chinese Outward Foreign Direct Investment: Is ASEAN A New Destination?	Pool OLS, Random effects, and fixed effects techniques	Institution, natural resources, and China-ASEAN FTA
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Ser. No.	Author and year	Title of the study	Method or techniques used	Variables used
13	Rania S. Miniesy and Eman Elish, 2016	IS MENA DIFFERENT? AN INVESTIGATION OF THE HOST COUNTRY DETERMINANTS OF CHINESE OUTWARD FOREIGN DIRECT INVESTMENT	pooled ordinary least squares estimation technique	Market seeking motive, Resource seeking motive, Efficiency seeking motive, Strategic asset seeking motive, Macroeconomic risk – high inflation, Political risk – poor governance,
14	Safdar Husain Tahir, Hazoor Muhammad Sabir, 2015	Ownership structures as determinants of financial decisions: Evidence from Pakistani family owned listed firms	Generalized Method of Moments (GMM)	Internal fund, Tobin Q, debt ratio, dividend ratio and net earnings
15	Stefano Bonini, 2014	Secondary Buyouts: Operating Performance and Investment Determinants	Abnormal performance percentage change indicator	Operating Margins Ratios, Turnover Ratio, Return on Investment Ratios, Return on Equity Ratios, Liquidity Ratios, Capital Structure Ratio

APPENDIX G: SURVEY QUESTIONNAIRE

To be filled by Owners/Managers of Private Investment in manufacturing sector

Dear Respondents,

My name is Gizachew Yirtaw lecturer in Mekelle University, college of Business and Economics in the department of Accounting and Finance. By now, I am a student of Doctor of Business Leadership at University of South Africa (UNISA). And, I am undertaking a research study on “An analysis of the Determinants of Private Investment in the Manufacturing sector: The case of the State of Tigray, Ethiopia. The objective of the study is to analysis the factors that affects for the status i.e. pre-implementation, implementation and operation of private investment in the manufacturing sector in Tigray.

The objective of the research is for academic purpose to achieve my partial fulfillment of doctoral degree in the field of study stated above. Therefore, I would like your cooperation in to provide me your crucial information because it has very high value for the success of this study. I promise that your information will not be forwarded to any other third parties without your permission.

Thank you in advance for your time and consideration.

1. Background Information

- 1.1. Name of the enumerator/interviewer: _____
Sign: _____ Date: _____ Mobile No. _____
- 1.2. Approved by Researcher: Gizachew Yirtaw Sign: _____
Comment, if any _____
- 1.3. Name and address of the firm: Name: _____
Address: Region Tigray, Zone _____, Wereda _____
- 1.4. Position of the interviewee (Please circle one):
1) Owner only
2) Manager only
3) Owner and Manager
- 1.5. Gender of the respondent (Please circle one): 1) Male 2) Female
- 1.6. Age of the respondent: _____ years
- 1.7. Educational level of the respondent: _____ grade
- 1.7.1. Does your educational level affect to delay your status?
1) Yes
2) No

2. Basic business information

- 2.1. What is the status of your firm/organisation? Please circle one.
1) At pre-implementation stage i.e. not yet started or acquired investment license and/or land
2) Under implementation i.e. under construction and/or installation of machineries)
3) At operation i.e. production stage
- 2.2. When did you get your investment permit for your firm from investment bureau? (Duration)
Date _____, Month _____, Year _____
- 2.3. If you are in the implementation and operation statuses, when did you start implementation status? (Duration)
Date _____, Month _____, Year _____
- 2.4. If your answer in question No. 2.1 above is at operation phase (i.e. No. 3), when did you get your business license?

Date _____, Month _____ Year: _____

- 2.5. What is this company's current legal form? Please circle one.
1. Sole proprietorship
 2. Partnership
 3. Private Limited company
 4. Share Company
 5. Others (specify) _____
- 2.6. What are the investment areas (types) of your firm? Please circle one or more if they are in one license.
- 1) Food industry
 - 2) Beverage industry
 - 3) Textile and textile products industry
 - 4) Leather and leather products industry
 - 5) Wood products industry
 - 6) Paper and paper products industry
 - 7) Printing industry
 - 8) Chemical and chemical products industry
 - 9) Basic pharmaceutical products and pharmaceutical preparations industry
 - 10) Rubber and plastics products industry
 - 11) Other non-metallic mineral products industry
 - 12) Basic metals industry (excluding mining of the mineral)
 - 13) Fabricated metal products industry (excluding machinery and equipment
 - 14) Computer, Electronic and optical products industry
 - 15) Electrical products industry
 - 16) Machinery/Equipment industry
 - 17) Vehicles, trailers and semi-trailers industry
 - 18) Others (specify) _____
- 2.6.1. Does your type of investment areas affect to delay your status?
- 1) Yes
 - 2) No

3. Source and access of Finance

- 3.1. What is your source of finance for your private investment? (Please circle one or more)

- 1) Own contributions
- 2) Share contributions
- 3) Formal financial institutions (banks and Micro finance)
- 4) Informal financial sources (e.g. money lenders, family/friends)
- 5) Others (specify) _____

3.2. If your answer in question No. 3.1 above is other source in addition to the formal financial institutions (i.e. No. 4), can you judge their level of difficulties?

- 1) Very easy
- 2) Easy
- 3) Medium
- 4) Difficult
- 5) Very difficult

3.3. Please explain for your answer in question No. 3.2 above: _____

3.4. After getting your investment permit, have you ever asked financial institutions like bank for loan?

- 1) Yes
- 2) No

3.5. If your answer in question No. 3.4 above is yes, go to question No. 3.6. But, if your answer is no, after explaining the reason go to question No. 5.1.

3.6. If you asked to get a loan from financial institutions (like banks), have you experienced any difficulty in acquiring loan that create investment status delay (access to credit)?

- 1) Yes
- 2) No

3.7. If practiced any difficulty in acquiring banks loan, what were the problems? (Please circle one from listed number under Yes or No)

No.	Problems	Yes	No
1	Collateral requirements of banks/financial institutions	1	2
2	Bank paper work/bureaucracy/delay in loan delivery.	1	2
3	High interest rate	1	2
4	Corruption of bank officials:	1	2
5	Inadequate credit/finance	1	2
6	Banks require detailed feasibility study information on	1	2

	customers:		
7	Others (specify) _____	1	2

3.8. From the problems to get bank loan in question No. 3.7 above, what are the most severe problem (Please fill the number on the given black space) _____, _____ and _____.

4. Cost of Finance

4.1. If you asked for loan, does the level of interest payment for the loan from financial institutions like banks had high delay?

1. Yes
2. No

4.2. Please explain for the answer to question No. 4.1 above:

5. Quality and Integrity of Public Services (Infrastructure facilities)

5.1. Does the overall quality and efficiency of infrastructure facilities/services delivered by the following public agencies or services create investment status delay?

No.	Public agencies or services	Yes	No
1	Roads department/authorities	1	2
2	Telephone Authority	1	2
3	Electric power co/agency	1	2
4	Water/sewerage agency	1	2
5	Postal service/agency	1	2
6	Port service office	1	2
7	Investment Office	1	2
8	Municipality	1	2
9	Customs and revenue authority	1	2
10	Others (explain) _____	1	2

6. Access to land

6.1. Do you encounter any delay problem like procedure to access, size and lease price in getting land for investment?

- 1) Yes
- 2) No

6.2. If your answer in question No. 6.2 above is yes, go to question No. 6.4. But, if your answer is no, after explaining the reason go to question No 7.1.

-
- 6.3. To get land for your investment, what were the problems? (Please circle one from listed number under Yes or No)

No.	Land access	Yes	No
1	Existing land tenure system	1	2
2	Bureaucratic procedure	1	2
3	Lease price	1	2
4	Other (specify) _____	1	2

- 6.4. From the problems to get land for investment in question No. 6.3 above, List from the first to the third most severe problem. (Please fill the number on the given black space) _____, _____ and _____

7. Judicial/Legal System

- 7.1. In your opinion, is the judicial system like independency, motivation and corruption of employees, and enforcing of rules in your region do not create investment status delay?

- 1) Yes
- 2) No
- 3) Neutral

- 7.2. If your answer in question No. 8.2 above is no, go to question No. 8.4. But, if your answer is yes or neutral, after explaining the reason go to question 8.6.

-
- 7.3. If the judicial system create delay, what is/are the most acute shortcomings? (Please circle one from listed number under Yes or No)

No.	Shortcomings	Yes	No
1	Lack of independence	1	2
2	Inability to enforce rulings	1	2
3	Delayed court rulings	1	2
4	Lack of motivation	1	2
5	Corruption	1	2
6	Others (specify) _____	1	2

- 7.4. From the legal system shortcomings in question No. 7.3 above, list from the first to the third most severe shortcoming. (Please fill the number on the given black space) _____, _____ and _____

8. Bureaucratic Red Tape

8.1. Have you been subjected to delays in getting public services like investment license, bank loans, land, and infrastructure utilities due to the bureaucratic red tape?

1) Yes

2) No

8.2. If your answer in question No. 8.1 above is yes, go to question No. 8.3. But, if your answer is no, after explaining the reason go to question 8.5.

8.3. From the public services listed below, for what services do you subjected to dalliance due to bureaucratic red tape? (Please circle one from listed number under Yes or No)

No.	Public services	Yes	No
1	To get investment license	1	2
2	To get bank loans	1	2
3	To get land	1	2
4	To register vehicle	1	2
5	To get police services	1	2
6	To get utilities (water, electric and telephone)	1	2
7	Others (specify) _____	1	2

8.4. From the dalliance due to bureaucratic red tape made by the public services in question No. 8.3 above, list the service from the first to third most subjected to delay? (Please fill the number on the given black space) _____, _____ and _____

8.5. In your perception, does corruption in this region to get different services like bank loan, investment permit and license, municipality works, infrastructure facilities that are related to your investment was high and enhance investment status delay?

1. Yes

2. No

8.6. If your answer in question No. 8.5 above is yes, what effect do you think corruption has on investment?

1) High negative effect

2) Average negative effect

- 3) Neutral
- 4) Average positive effect
- 5) High positive effect

8.7. Please explain for the answers in question No. 8.6 above:

9. Investment incentive structure

9.1. Does your firm delayed the progress of investment status due to not getting investment incentives like income tax holidays, custom duty free, and access to bank loan and land?

- 1) Yes
- 2) No

9.2. If your answer in question No. 9.1 above is no, go to question No. 9.3. But, if your answer is yes, after explaining the reason go to question 10.1.

9.3. Which one of the following investment incentives promotes you much to invest? (Please circle one from listed number under Yes or No)

No.	Investment incentives	Yes	No
1	Income tax holidays	1	2
2	Custom duty	1	2
3	Access to bank loan	1	2
4	Access to low lease price of land	1	2
5	Market incentives	1	2
6	Other (specify) _____	1	2

9.4. From the investment incentives specified in question No. 9.3 above, list from the first to third most promotes you. (Please fill their number on the given black space) _____, _____ and _____

10. Political stability

10.1. Does the risk of political instability like border conflict, security system and trade restrictions exist and create investment status delay in the region?

- 1) Yes
- 2) No

10.2. If your answer in question No. 10.1 above is yes, go to question No. 10.3. But, if your answer is no, after explaining the reason go to question 11.1.

10.3. From the risks listed below, which of the following political stability risk exist in the region? (Please circle one from listed number under Yes or No)

No.	Risks	Yes	No
1	Border conflict	1	2
2	Weak security system	1	2
3	High trade restriction	1	2
4	Public offices unnecessary interference	1	2
5	Others (specify) _____	1	2

10.4. From the political instability risks specified in question No. 10.3 above, list from the first to third most risks. (Please fill the number on the given black space) _____, _____ and _____

11. Investment Location

11.1. Are there any investment status delay problems that face to your firm because of your investment location like having long distance to raw materials and to sell your product?

- 1) Yes
- 2) No

11.2. If your answer in question No. 12.1 above is yes, go to question No. 12.3. But, if your answer is no, after explaining the reason go to question 13.1

11.3. Please select from the following problems that face to your firm because of your investment location. (Please circle one from listed number under Yes or No)

No.	Problems	Yes	No
1	Long distance to raw materials and that may lead to high transportation cost	1	2
2	Long distance to sell your product (loss of market by distance)	1	2
3	Shortage of skilled and customer attractive labor force	1	2
4	Higher cost of house rents which do not concern the market	1	2
5	Others (specify) _____	1	2

11.4. From the investment location problems specified in question No. 11.3 above, list from the first to the third most problem? (Please fill the number on the given black space) _____, _____ and _____

12. Constraints of private investment status

12.1. Judge on a four-point scale how the following factors limit the operation of your business. Please circle one.

12.1.1. *Economic and Financial Factor in the region*

No.	Factors	No limit	Little limit	Moderate limit	High limit	Very high limit
Q1	Number of financial institutions	1	2	3	4	5
Q2	Cost of Financing	1	2	3	4	5
Q3	Tax rates and Administration	1	2	3	4	5
Q4	Macroeconomic uncertainty (e.g. inflation, exchange rate)	1	2	3	4	5
Q5	Cost of Investment	1	2	3	4	5

12.1.2. *Technological factors in the region*

No.	Factors	No limit	Little limit	Moderate limit	High limit	Very high limit
Q6	Research and development works	1	2	3	4	
Q7	Appropriate technology supply	1	2	3	4	

12.1.3. *Infrastructural factors in the region*

No.	Factors	No limit	Little limit	Moderate limit	High limit	Very high limit
Q8	Road Transport	1	2	3	4	5
Q9	Electric power	1	2	3	4	5
Q10	Telecommunication service	1	2	3	4	5
Q11	Water supply	1	2	3	4	5
Q12	Air transport	1	2	3	4	5
Q13	Port facilities	1	2	3	4	5

12.1.4. Regulatory factors in the region

No	Factors	No limit	Little limit	Moderate limit	High limit	Very high limit
Q14	Awareness works of Investment laws	1	2	3	4	5

12.1.5. Marketing factors in the region

No.	Factors	No limitation	Little limitation	Moderate limitation	High limitation	Very high limitation
Q15	Demand for your product	1	2	3	4	5
Q16	Promotion medias for your product	1	2	3	4	5
Q17	Pricing for your product	1	2	3	4	5

12.1.6. Location factors in the region

No.	Factors	No limitation	Little limitation	Moderate limitation	High limitation	Very high limitation
Q18	Skilled and customer attractive labor force	1	2	3	4	5
Q19	Raw materials needed	1	2	3	4	5
Q20	Location to sell your product	1	2	3	4	5

13. Feed back

13.1. If there were other problems (other than the described one), would you please list out them?

13.2. What do you suggest as a solution for the above-mentioned problems?

Thank again for your cooperation

APPENDIX H: FOCUS GROUP DISCUSSION QUESTIONS

1. Most of the respondents (i.e. 96%) replied that source of finance for their private investment was from their own contributions in addition to the formal financial institutions. Can you explain their level of difficulties whether they are easy or difficult to get the source from them?
2. After getting their investment permit, around one-third of the respondents did not even asked financial institutions like banks for a loan. What are the reasons?
3. Nearly three-fourths of the respondents out of the private investors who asked for a bank loan (i.e. 66%) replied that the level of interest payment for the loan from financial institutions like banks did not delay. Can you explain the reasons?
4. Around two-thirds of the respondents of the private investors did not encounter problems in getting land for investment that delay investors investment status. Explain the reasons.
5. Around 58% of the respondent of the private investors replied that the judicial system in their region created delay due to inefficiency. Can you explain the reasons?
6. About three-fourths of the respondent of the private investors in the study replied that they have been subjected to delays in getting public services due to the bureaucratic red tape. Can you explain the reasons?
7. Half of the respondents of the private investors in the study replied that in their perception corruption was high and that it influenced delay to get different services that are related to their investments. Can you please explain the reason?
8. If you have an idea concerning to the domestic private investment (other than the ones described), would you please explain it.

Thank you

APPENDIX I: INTERVIEW QUESTIONS

1. In the questionnaire, most of the respondents were replied that they had a problem of credit access from banks. Why?
2. Some investors replied that banks did not give adequate credit as per their proposal for the investment or as per their request. Why?
3. Out of the private investors were reported that infrastructure facilities such as electric, telephone, and water are the obstacles for the progress of investment status. What is your opinion?
4. Some of the investors were complaining with the investment permit period and investment license process. Why?
5. Most of the investors were engaged in specific investment areas such as food industry. What are the reasons?
6. Is there any practice made before to create awareness on the existing issues of investment like its rules, policies, procedures, taxes to private investors?