ADDIS ABABA UNIVERSITY

SCHOOL OF GRAGUATE STUDIES

COLLEGE OF BUSINESS AND ECONOMICS

BANK CREDIT FINANCING AND MANUFACTURING SECTOR PERFORMANCE

THE CASE OF COMMERCIAL BANK OF ETHIOPIA

A PROJECT PAPER SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILMENT FOR THE DEGREE OF EXECUITIVE MASTERS OF BUSINESS ADMINSTRATION

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DECLARATION

I hereby declare that the work which is being presented in this project paper entitled "**Bank Credit Financing and Manufacturing Sector Performance the case of Commercial Bank of Ethiopia**" is my original work, has not been presented for a degree in any other university and that all sources of material used for the thesis have been duly acknowledged.

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APPENDICES

Interview guide lines for Credit core process

ABBREVIATIONS

CBE: Commercial Bank of Ethiopia

EEPO: Ethiopian Electric Power Office

EESO: Ethiopian Electric Services Office

EPRDF: Ethiopian People's Revolutionary Democratic Front

ECA: Economic Commission for Africa

FDI: Foreign Direct Investment

GDP: Gross Domestic Product

GDPM: Gross Domestic Product of Manufacturing

GFCF: Gross Fixed Capital Formation

GTP: Growth and Transformation Plan

HCI: Heavy and Chemical Industry

HDA: Housing Development Agencies

ICICI   Industrial Credit and Investment Corporation of India,

IDBI: Industrial Development Bank of India

IFC: Indian Finance Corporation

IFD: Industrial Finance Department

ISR: Industrial System Research

KOICA: Korea International Cooperation Agency

MIS: Management Information System

MoFED: Ministry of Finance and Economic Development

NBE: National Bank of Ethiopia

NPL: Non Performing Loan

OLS: Ordinary Least Square

RBI: Reserve Bank of India

R & D: Research and Development

SSA: Sub Saharan Africa

SFC: State Financial Corporation

TC: Total Credit

UNDP: United Nations Development Program

UTI: United Trust of India

VARM: Vector Autoregressive Model

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ABSTRACT

The idea of banks financing the private sector as an engine of economic growth has a long history. The long-held belief of positive relationship between credit financing and manufacture sector growth has prompted to be a principal component of policy advice in many developing countries. However, it is still an issue of high debate between developed and developing nations governments and policy makers. Nowadays, many empirical studies confirm the existence of strong and positive link between credit financing and economic growth in general and manufacturing sector in particular while few found significant negative relationship. Thus, the long-run and short-run impact of credit financing on manufacturing sector performance is analyzed using Johansson method of co-integration approach and Vector Autoregressive Model (VARM) based on annual data for the period 1974/75-2013/14. The results suggest the existence of significant positive impact and insignificant negative impact of trade credit financing on manufacturing sector growth in the long and short-run respectively. As a result, an evidence for strategic financing of infant domestic manufacturing industries meant to foster economic growth of the nation has been inferred.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Ministry of Finance and Economic Development has classified manufacturing sector in to large and Medium Scale and Small Scale. These have also subsectors such as Textile and Garment, Agro-Processing, Metal and Metal Products, Leather and Leather Products and others.

The manufacturing sector began to flourish in our country with the establishment of central government, formation of cities, and development of infrastructures like railway, roads, and beginning of trade relation with foreign nations that create an opportunity for entering of technology. (Mulu, 2013)

The manufacturing sector development in Ethiopia dates backs to the 1920s, but it has remained weak due to various challenges. Cottage and handicraft industries were dominant in the early 1950s, which manufactures subsistence goods and products such as clothes, tools, and leather goods. After the Second World War, some modern industries were introduced that has contributed to the development of the national economy. (Mulu, 2013)

Development, Ownership and marketing strategy of manufacturing sector in Ethiopia has been different depending on political ideologies and development policy of each government such as import substitution and private sector led (from early 1950s to 1974, the Imperial regime); the import substitution and state owned (from 1974 to 1991, the Dergue regime), and the export oriented and private sector led (since 1991, the Ethiopian People's Revolutionary Democratic Front, (EPRDF)). (Mulu 2013)

Ethiopian Industrial contribution to the national GDP has been about 5% in the periods 2000 to 2010. After change of the Derg Regime the economic reform and privatization of state owned enterprises have attracted foreign investment to the industrial sector. Under Ethiopia's Growth & Transformation Plan (GTP), which ends by the year 2014/15, the country has envisioned for

industrial development by boosting the manufacturing sector. The GTP aims to increase total manufacturing as follows: (GTP, 2010-2015)

- ✓ Roughly triple industrial output in five years, i.e., annual growth of 24%

- ✓ Increase industrial exports at an annual growth rate of 30%

- ✓ Create 3 million jobs in industry by 2015

- ✓ Increase contribution of industry to GDP from 13% to 18.7%

1.2 Banking Industry in Ethiopia

Ethiopian traditional and modern financial system and its economic contribution have a long history. Traditional institutions like Eqqub have contributed to cultural development of saving and financial management within its cultural context. (Habtamu, 2012)

The banking industry in Ethiopia dates back to 1905 by the establishment of Bank of Abyssinia in the reign of Minilik II by the agreement made between the Government of Ethiopian and Egyptian. It was inaugurated 16 February 1906. (NBE, http://www.nbe.gov.et/aboutus/index.html)

By 1931, Bank of Abyssinia was legally replaced by Bank of Ethiopia shortly after Emperor Haile Selassie came to power. Bank of Ethiopia was a purely Ethiopian institution and was the first indigenous bank in Africa and it was established by an official decree on August 29, 1931 with capital of £750,000. Ethiopian government owned 60 percent of the total shares of the Bank and all transactions were supervised by the Minister of Finance. (NBE, http://www.nbe.gov.et/aboutus/index.html)

Bank of Ethiopia had been operating all commercial activities of the Bank of Abyssinia and continued successfully until the Italian invasion in 1935. During the Italian invasion, the Italians

established their own Banks namely Banca d'Italia, Banco di Roma, Banco di Napoli and Banca Nazionale del lavoro and started operation in the main towns of Ethiopia. (NBE, http://www.nbe.gov.et/aboutus/index.html)

In 1941, another foreign bank, Barclays Bank, came to Ethiopia with the British troops and organized banking services in Addis Ababa, until its withdrawal in 1943. Then on 15th April 1943, the State Bank of Ethiopia commenced full operation after 8 months of preparatory activities. (NBE, http://www.nbe.gov.et/aboutus/index.html)

In 1963 the Ethiopian Monetary and Banking law that came into effect has separated the function of commercial and central banking by creating the National Bank of Ethiopia (NBE) and Commercial Bank of Ethiopia (CBE). (NBE, http://www.nbe.gov.et/aboutus/index.html)

In 1974 due to change of government and the declaration of Socialism as the guiding ideology, the government nationalized all banks and merged all private banks and commercial Bank of Ethiopia by proclamation No.184 of August 2, 1980 to form the sole commercial bank in the country till the establishment of private commercial banks in 1994. (NBE, http://www.nbe.gov.et/aboutus/index.html)

1.3 Statement of the Problem

The Ethiopian economy is one of the fast growing economies in the world that is attracting investors to participate in the manufacturing, agriculture and service sectors. (U.S.A Department of State, 2014). The growth of manufacturing is essential to bring about industrialization and economic transformation. Particularly, growth of large and medium and micro and small scale manufacturing enterprises is vital. However, the share of industry represented by the GTP is not realized as expected. From the document that has reviewed, the industry sector contribution towards GDP is minimal economic as compared to the three main economic sectors in the GTP I period (2010-2013) (MoFED, 2014). Growth and transformation review (MoFED, 2014) indicates that the share of agriculture, industry and service 42.9, 12.4, 45.2 percent respectively in 2012/2013.

The growth rate of manufacturing (large and medium scale and micro and small scale manufacturing) has been consistent across the years. Despite of the government effort to increase the share of industry by policy to get priorities credit and foreign currency, it has not shown satisfactory improvement. The laggardness of manufacturing sector may be due to many factors like institutional, policy, labour and resource factors. As a result measuring these factors is very critical for measuring performance of manufacturing sector. Therefore, in order to increase the role of manufacturing industry in the economy, the growth rate of the manufacturing sector has to accelerate further (MoFED, 2014). As a result, in the GTP II the government has planned to increase the contribution of industry to GDP from the current 12% to at least 28% in the coming ten years (GTP II, 2015).

To achieve the stated objective, the government has to work on different challenges of the sector like capacity, finance, competitiveness, demand and raw material supply. To resolve these challenges the financial intervention of banks for the growth of the sector is vital. (KOICA GTP review document, 2013). The intermediation of the banks by availing credit products that fit the credit requirement of the manufacturing sector is vital for the sector dynamism. Banks are one of the financial institutions that has strong financial base to fulfill huge financial requirement of the manufacturing sector. The study made by Murty et al. (2012) has examined the impact of bank credit on economic growth in Ethiopia over the period 1971 – 2011 and shown that, bank credit financing to private sector positively impacted overall economic growth. This study evaluates the impact of bank credit financing and other variables to the growth manufacturing sector.

1.4 General Research Question

What is the impact and extent of factors mainly credit financing on the performance of manufacturing sector over time?

1.4.1 Specific research questions

- What is the long run and short run impact of banks' financing for growth of the manufacturing sector?

- What is the long run and short run impact of other control variables like lending interest rate, money supply, fixed capital formation and inflation on the manufacturing sector?

1.5 Objectives of the Study

The General objective of the study is to assess the impact of credit financing on manufacturing sector performance. The specific objectives of the study include;

1. To evaluate the impact of Banks in financing manufacturing sector;
2. To examine the role of CBE in particular, in financing the manufacturing sector.
3. To examine and measure the effects of the major factors affecting the manufacturing sector;

1.6 Scope of the Study

Even though there are 3 public owned bank and 16 private banks, due to resource and time constraint and difficulty in managing the inclusion of other banking institutions and assessment of bank credit financing for manufacturing sector case study is delimited to CBE. Discussion on credit performers is made at head office level as majority of loan concentration is made at head office.

1.7 Significance of the Study

The study is made for academic purpose. However, the research conducted on the impact of credit financing for growth of manufacturing sector and identified results could provide information to the banks as a major stakeholders, to the policy makers and to those interested to make further study on related area in the future.

1.8 Limitation of the study

The limitation of the study are challenge of accessing complete data due to lack of organized information as required for the study and confidentiality of some information, like access to customers file to keep customers information confidentially. Some the challenges are resolved by reviewing different reports of the bank.

1.9 Organization of the study

The research work consists of six chapters. The first chapter introduced the background of the study, followed by statement of the problem, basic questions, objectives, scope significance and limitation of the study. The second chapter has dwelt on the literature review of different author's outlooks on bank credit financing of manufacturing sector. Chapter three dealt on methodology and discussed the methods of the research, how the research questionnaire developed, how the sample selected and the data collected and further the instruments used in the study. Chapter four devoted on presentation of qualitative and quantitative analysis of bank financing of manufacturing sector and significance of bank financing on growth of manufacturing sector. Data analysis and interpretation are stated in chapter five. The six chapter winded up the research by giving conclusions and recommendations based on the findings.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this section the conceptual framework on factors driving for growth of manufacturing sector, experience of different countries that contribute for growth of manufacturing sector, rationale of financing manufacturing sector, contribution of manufacturing sub sector in the industry to GDP, source of fund for financing, international practice in financing of manufacturing sector, and challenges on financing of manufacturing sector is discussed.

2.2 Factors Driving the Growth of Manufacturing Sector

The common factors for growth and performance of manufacturing includes Government political involvement such as ownership and detailed intervention in bureaucratic interference in enterprise decision making and operation, human factors (skilled and trained man power availability), shortage of professional managerial expertise and special scientific and technical personnel, technological development and other factors. (Industrial System Research (ISR), 2011)

2.3 The Major Factors for the Growth of Manufacturing Sector in Fast Growing Counties Experience

Industrial System Research (ISR) in 2011 has identified the following basic factors for growth of manufacturing sector in South East Asian countries.

- Favourable political-legal environment,

- Availability and flexibility of labour markets and wage system,

- Rate of learning and utilizing new technologies and scientific data in production system is rapid,

- Open trade system and zero or low duties on import of investment capital goods and raw material,

- Positive work ethics,

- Adoption of advanced technology, product innovation and flexibility with changes in outside market economic conditions,

- Access to cheap raw material,

- Competent and cheap energy supply,

- Substantial amount of Foreign Direct Investment,

- Export orientation and import substitution,

- Availing of substantial amount of money with low interest rates, and tax incentives and,

- Application of different management tools to lower cost and to lead the market

The major factors identified above have contributed to manufacturing sector growth; especially in steel making, shipbuilding, automobile production and production of other heavy duty goods in Japan and South Korea; and to produce industrial commodities in countries like Malaysia, Indonesia, Philippines, Hong Kong, and Singapore. (ISR, 2011)

Pre-war Japanese manufacturing firms were heavily indebted on bank loan, and those accessed bank credit performed better than those without. The others also claim that the Japanese manufacturing growth was also supported by through fund raised through competitive capital market. (Yoshiro Miwa, J. Mark Ramseyer, 2000)

Other factors for growth of manufacturing sector in Asia are exposure to foreign trade and FDI. Countries like Taiwan, South Korea, and India designated special economic zones to attract FDI,

reformed their regulatory, reduced cost of doing business, and lowered tariff barriers to increase trade. These have helped increased productivity, technology transfer, to become internationally cost competitive, exposure to international trade, learn new production technologies, and to design better marketing strategies. (Hasan A. Faruq and Peter J. Telaroli, 2011)

The share of FDI for growth of manufacturing sector in the period 2006 to 2010 in Far East Asian countries is indicated here below.

Table 2.1: Share of FDI by sector in Asian countries (in %)

Countries	Manufacturing	period	Source
India	46	1991-2006	Landes (2008)
Indonesia	31.1	2003-2005	ASEAN secretariat (2006)
Japan	16.2	2000-2005	OECD statistics (2010)
Malaysia	60	2003-2005	ASEAN secretariat (2006)
Philippines	26.5	2003-2005	ASEAN secretariat (2006)
Singapore	17	2003-2005	ASEAN secretariat(2006)
South Korea	23.2	2000-2005	OECD statistics (2010)
Thailand	27.4	2003-2005	ASEAN secretariat(2006)

Source: ASEAN Economic Bulletin, Vol. 28, No. 1 (2011)

As indicated in the above table the involvement of FDI in the above indicated countries ranges from minimum 16.2% in Japan to maximum 60% in Malaysia. This indicates the share of FDI in the growth of manufacturing is minor in country like Japan; whereas, in other countries like India and Philippines it is significant.

2.3.1 South Korea Experience for Growth of Manufacturing Sector

Korea is one of successful nation in growth of manufacturing sector and the basic factors for growth are summarized as follows. (KOIKA, 2013)

- Outward looking development strategy;

- Presence of well-educated and disciplined workforce;

- Technological innovation,

- Implementation of import substitution and export-oriented policies;

- Identifying the manufacturing sectors that are the basis for industrialization such as chemicals, machinery, and iron;

- Continuous move from unskilled labour intensive light industries to skilled labour intensive, assembly to fabrication, and capital intensive heavy industries to technology intensive ICT industries;

- Government incentives which include tax incentives, and financial assistance to indigenous R&D;

- Government's support by establishing non-profit guarantee institution which helps to obtain loans for development or commercialization of technology; and

- Organizing specialized banks to support some specialized sectors.

2.3.2. Indian Experience for Growth of Manufacturing Sector

India is one of fast growing country in the manufacturing sector. Factors for growth of Indian manufacturing sector are summarized as follows. (C.P. Chandrasekhar, 2010)

- Availing of Government credit guarantee scheme for small-scale industries for accessing credit;

- Industrial credit institutions were promoted with the setting up of the Industrial Finance Corporation (IFC);

- State Financial Corporation's (SFCs) were created to encourage state level medium size industries with industrial credit; and

- Continuous move from labour intensive industries to skill intensive industries such as auto components, hardware, generic drugs and specialty chemicals.

2.3.3 Brazil's Experience for Growth of Manufacturing Sector

The basic factors identified for growth of Brazil's manufacturing sector are summarized as follows[1],

- Development of physical infrastructure (roads, ports, electricity grids, and telecommunication) that has attracted foreign direct investment;

- Development of science and engineering talent that drive innovation, research and development, and close the skills gap; Clean, low energy costs, and reliable energy;

- Large natural resource base;

- An increase in foreign direct investment;

- Availability of educated and skilled man power;

- Adoption of contemporary management tools like Six Sigma; and

- Application of international quality standards that are practiced by different FDI companies,

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[1] Deloittee., 2012. Competitive Brazil Challenges and strategies for the manufacturing industry.

2.3.4 China's Experience for Growth of Manufacturing Sector

China is the second largest economy in the world. The role of manufacturing for its economic growth is significant. The basic factors for dynamism of China's manufacturing sector are summarized as follows. (C.P. Chandrasekhar, 2010)

- Cheap labour resources, quality of infrastructure, the government's scheme and local business dynamics;

- Moving low-wage sectors to sophisticated production of computers, pharmaceuticals, and automobiles;

- Development of interior large industrial parks and infrastructure for movement of physical goods,

- Growth of FDI; and

- High domestic backward and forward linkages.

1. Vertical linkages (supplier base and customers), value chain integration within its national boundaries;

2. Backward linkages (domestic input suppliers); and

3. Forward linkages of an industry capture its output that feeds into another industry.

2.4 Incentives for Manufacturing Sector in Ethiopia

Ethiopia is laying a ground to smooth the environment for both local and foreign investors. In this regard, under the council of ministers regulation No. 270/2012 investment incentives for manufacturing and other sectors are articulated. The core objective of this law is to encourage and promote the investment in different economic sectors, to accelerate the flow of capital and technology transfer by creating fair competition among industries thereby boost the economic development of the country and segregating investment areas reserved for local investors. (Negarit Gazeta, No.63, 2012).

To encourage investment and promote the inflow of foreign capital and technology into Ethiopia, the following incentives are granted to both domestic and foreign investors engaged in selected areas of investment activities:

2.4.1 Income tax exemption

Any investor who invests to establish a new enterprise shall be entitled for income tax exemptions for different periods depending on the nature and area of investment.

Table 2.2 Investment areas and income tax exemptions for manufacturing sector

Investment areas	Investment areas and Income tax exemption	
	Addis Ababa and surrounding Oromia zones	In other area
Food industry	1 to 5 years	2 to 6 years
Beverage industry	1 to 3 years	2 to 4 years
Textile and Textile products Industry	2 to 5 years	3 to 6 years
Leather and leather products industry	2 to 5 years	3 to 6 years
Wood products Industry	2 years	3 years
Paper and paper products industry	1 to 5 years	2 to 6 years
Chemical and Chemical products Industry	2 to 5 years	3 to 6 years
Basic pharmaceuticals and pharmaceuticals preparation industry	4 to 5 years	5 to 6 years
Other none metallic mineral products industry	1 to 4 years	2 to 5 years
Basic metals industry (excluding mining of the minerals)	3 to 5 years	4 to 6 years
Fabricated metal products industry(excluding machinery and equipment)	1 to 3 years	2 to 4 years
Computer, Electronic and Optic products industry	2 to 4 years	3 to 5 years
Electric products industry	2 to 4 years	4 to 5 years
Machinery/equipment industry	5 years	6 years
Vehicles, trailers, and semi-trailers industry	1 to 5 years	2 to six years

Source: Negarit Gazeta, No.63, 2012

2.4.2 Additional income tax exemption

Any investor who exports or supplies to an exporter as production or input is exempted at least 60% of products from income tax exemption for two years in addition to exemptions provided for other sectors.

2.4.3 Loss carry forward

An investor who has incurred loss within the period of income tax exemption shall be allowed to carry forward such loss for half of the income tax exemption period after the expiry of such period.

2.4.4 Exemption from Customs Duties

For investors engaged in new enterprises or expansion projects such manufacturing, agro-industries and construction contracting, etc. …

- 100% exemption from payments of customs duties and other taxes import all capital goods, such as plants, machinery & equipment and construction materials,

- Spare parts worth 15% of the total value of imported investment capital goods,

- An investor granted of customs duty exemption is allowed to import capital goods duty free any time in operational phase of his enterprise,

- Investment capital goods imported without the payment of custom duties and other taxes levied on imports may be transferred to another investor enjoying similar privileges.

2.5 Rationale for Financing of manufacturing sector

The business of banks involves providing financial service to individuals, business making institutes, government and non-profit making institutes. The banking business cycle begins with safeguarding of depositors' money and then providing this fund to borrowers to consume and to invest that leads to creation of jobs, economic growth and prosperity. The wealth that is built

through prosperity comes back into banks as deposits and the cycle continues. (Americans Bankers Association, 2013)

Fig. 2.1: Business cycle of the banks (Americans Bankers Association, 2013)

As indicated above, in the business cycle of the bank, credit is one of the core businesses of the bank. Credit is financing of money from lender to borrower with repayment arrangement to individual or organization. Therefore, the lending and borrowing process transforms the depositors' money into productive investment that lead to economic growth. (Yakubu and Affoi, 2014)

Banks offer a number of different services that help businesses development. One of banks services is maintaining customers' deposits and uses it for lending. This has fundamental impact on the economies of the community and countries. (Kuang, 2009)

Banks business earns profit from lending of depositors money and from other banking services for which they charge a fee. From this earning they pay tax and it is one contribution for the development of the country. (American Bankers Association, 2014)

Credit as financial intermediation provides funds to those economic entities that put them more productive and lead the nation's rapid growth. Efficient financial intermediation of banks

contributes to economic growth by channelling savings to high productive activities.   (Ehikioya, and Mohammed, 2013)

Investors continuously expand and maintain their business through acquisition, merger, expanding plants and equipment, updating technologies, and innovating products. Consequently, investors incur capital expenditures during subsequent implementation of the above activities and require finance from internal funds from own equity and use external financing. (Kuang 2009)

Banks avail the required fund for investors that involve in manufacturing sector for new investment, expansion of existing business, acquisition, and for purchase new technology, create jobs opportunity for communities and generate returns for stakeholders, and in general economic growth of local communities and the nation as a whole. (American Bankers Association, 2014)

Providing innovative credit that fits the requirement of manufacturing sector have impact on creation of job down the chain of the business for machinery suppliers, the supplier hires additional workers to meet the increased orders, transport service, raw material suppliers, whole sellers, distributers and related businesses. (American Bankers Association, 2014)
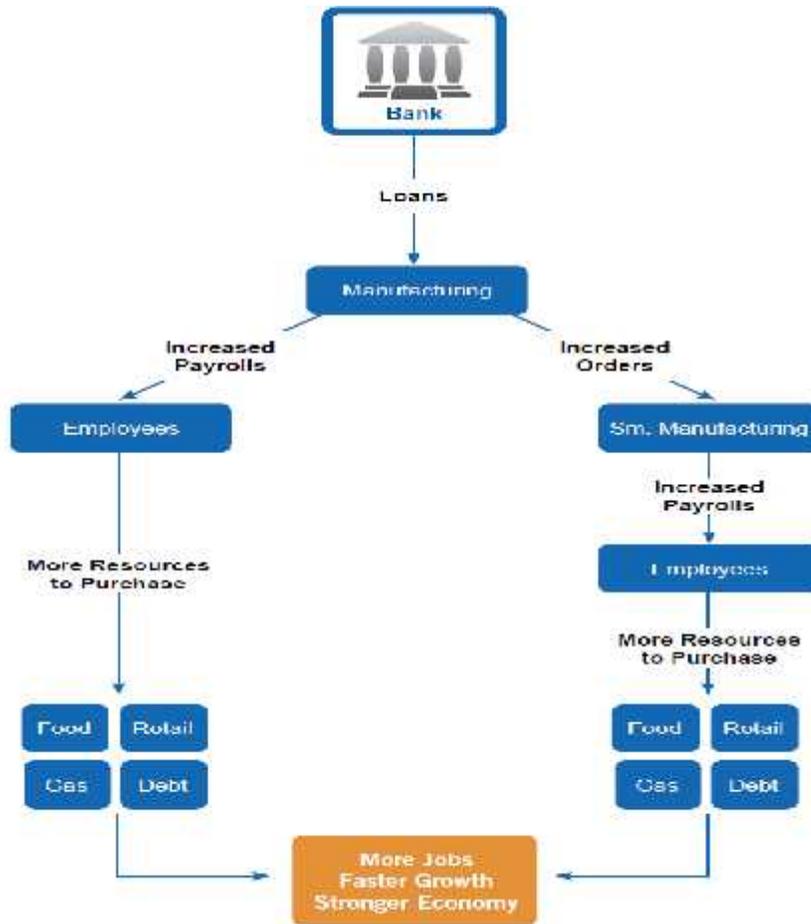
Fig 2.2 the role of banks in manufacturing chain and economic stimulus (American Bankers Association, 2014)

Banks also create financial confidence for entrepreneurs by encouraging investment through providing finance for their investment, consultancy service on resource allocation appropriate project selection, and follow up of resource application and financial management. (American Bankers Association, 2014)

2.6 The Role of Banks in supporting manufacturing sector

The role of bank is financial intermediation by mobilizing savings, managing bank business risk management, evaluation of projects before financing, financing and monitoring the business, and facilitating transactions, allocation of available resources for capital formation that helps technological improvement and growth of nation. (American Bankers Association, 2014)

The manufacturing sector also requires financial assistance of banks for expansion of existing business, acquisitions and investment on new projects. The contemporary manufacturing sectors involve in high standards of quality production, innovation and require computer supported machinery and continuous expansion to satisfy demand that needs intermediation of bank as it involves high initial capital investment. (http://www.lloydsbank.com)

2.7 Allocation of the right fund

Most economies of the world are advanced through effective investments and banks allocate the required finance for its effectiveness. The investment in manufacturing sector requires long term finance for acquisition of industrial plants, production of capital goods, research and innovation and related activities. The fund required for such investment in this sector is large in amount that require an extended grace period to complete for complex development or construction, and long tenure of loan repayment period as it takes long time for return of the investment. (Nkamare and Effiong, 2014)

Long-term finance have tenure of long term repayments for capital intensive projects and in most cases such funds are directly paid by lenders under consent of borrowers to end users for controlling of its application of the fund for intended purpose. Long-term finance is accessed from financial institutions like banks, insurance funds, pension funds and capital markets. The

demand for such long-term finance could be for different purposes like for construction of factory plant buildings, for acquisition of plant and equipment, software, permanent working capitals and so forth. (Group of Thirty, 2013)

In developed and developing nations the role of bank during the industrial take off period was crucial. The banks finances for both working capital purposes and long-term investment to capital intensive sectors. Therefore, while financing it is necessary to finance the required amount of fund with the suitable credit product and with appropriate loan repayment tenure. (Chandrasekhar, 2010)

2.8 Assigning of qualified human resource

In financing and supporting the manufacturing sector, it is necessary to have a qualified and experienced human resource that have technical and commercial business sector knowledge and sector's banking needs. Those who have better understanding, trained and specialized in these sectors can provide best solution for each sub sector needs of the business requirement. (Royal bank of Scotland 2015, http://www.rbs.co.uk)

Sources of knowledge for the banks to develop trained human resource could be sector specific training institutions, studies made on manufacturing's supply chains, government initiatives for the sector, factory site visits to learn about best practices and potential risks and preparing standard reference documents for each sector specific manufacturing. Better understanding of the manufacturing sector help customer banking relation in manufacturing sector as follows. (DR. Dhliwayo, 2014)

- To understands exactly what the business demands in a single point of access,
- Create a strong link between the bank and entrepreneur,
- To deliver what the business needs when the customer needs it,

- And give professional advice proactively by foreseeing the issues likely to affect the customers' business, and clarifying important opportunities.

Assignment of specialized human resource that have better understanding of each manufacturing subsector supply chains and trade cycles helps to offer knowledge based credit sanctioning and deploy products and services best suited to the sector. The greater understanding of the unique challenges facing manufacturing sector allows for banks to give informed guidance and support. (Royal bank of Scotland 2015, http://www.rbs.co.uk)

Sometimes lending leads to higher than normal debt to equity ratios, in such case banks assign bank staff to safeguard their resources, closely monitor the activities of the firms, provide consultancy service (including technical assistance such as drawing up project plans, identifying technology, and implementing the project) and to prevent potential damages with wrong decision making and financial diversion for unintended purpose. This requires banks to have team of technical and managerial expert that involved in the decisions related to lending and the nature of the investment. (Chandrasekhar, 2010)

2.9 Sources of fund for financing of manufacturing sector

The large scale manufacturing sector requires large amount of resource for its investment for fixed capital investment for acquisition of capital goods and for permanent working capital.

Banks are financial institutions that allocate fund in the form of credit. This involves channelling of funds from the surplus to the deficient units of the economy by transforming bank deposits into credits. (Yakubu, 2014)

This requires mobilization of resource by banks to meet their customers' demands. Resource mobilization is defined by Judith B. Seltzer, 2014 "securing new and additional resources, making better use and maximizing existing resources, new business development by creating new business opportunities to mobilize resources form part of an organization's overall functioning".

The major source for growth of East Asian countries is consequence of well-designed programs and policies of the countries by intensive intervention of government in operations of financial system by making financial markets and institutions work better and directing of resources to some vital industries. (Stiglitz, 2014)

When we look at the experience of some countries their source for financing of long term investment varies depending on countries growth stage of financial institutions. (Stiglitz, 2014)

2.9.1 Saving mobilized from Commercial banks

Financial resource attraction is extremely important activities of a bank because success in this area is a factor for success in other services. (Aftabi, 2013)

One of the basic functions of the banking sector is mobilizing surplus funds from savers who have no immediate needs of such funds and lending it in the form of credit to investors who have entrepreneurial ideas and knowhow to create additional wealth in the economy but lack the necessary capital to execute. Therefore, banks are debtors to the depositors of funds and creditors to the borrowers of funds. (Yakubu and Affoi, 2014)

On International Conference held on 18 to 22 March 2002 at Mexico on Financing for Development Monterrey, the first of six "leading actions" for poverty eradication and sustainable development was mobilizing domestic savings both public and private by creating an enabling domestic environment, increasing productivity, reducing capital flight, encouraging the private sector, and attracting and making effective use of international investment and assistance.

Sustainable development financing needs rely on domestic financial systems and ultimately on domestic investors by mobilizing savings and channel into productive investments. The structure of financial systems in many developing countries tends to be dominated by the banking system, whose financing is generally short-term in nature and not well suited for longer term financing needs for investment projects. (UN system task team, 2013)

In most case the investment required by entrepreneurs are beyond their capacity. In this case they demand external financing from financial institutes. The financial institutes lend from deposit

mobilized from small amount holder savings that are large in number which can't invest individual level. This accumulated fund raised from large number of depositors will be used to finance big projects that can't be achieved by individual own equity financing. (Stglitz, 1996)

2.9.2 Specialized development banks

Most East Asian Governments including Indonesia, Japan, Korea, and China have established specialized banks that provide long term investment loans and commercial banks to serve specific group of borrowers like Islamic Banks and Industrial bank by considering banks' institutional capacity to monitor loans granted. Most Government owned banks finance for selected firms within priority sectors that are identified by government. (Stiglitz and Marilou, 1996)

Governments establish long term financing institutions rather than directly invest and grant long term loan by considering banks capacity, efficiency, independency in selection of viable investments and monitoring of project implementation than government institutions. (Stiglitz, 1996)

The involvement of government in establishment of development banks was providing funds during establishment (e.g. the Japanese Government has bought large portion of private long term bonds when the private development banks are established) and encouraging government units and commercial banks to purchase long term bonds which helped development banks to raise funds at low rate. (Stiglitz, 1996)

In Japan the government owned development banks focuses on lending for highly subsidized activities like mining, electric power generation, and large machinery manufacturing factories; whereas, privately owned industrial banks does not necessarily finance industries that are prioritized sectors by the government. It is also common practice development and commercial banks making joint financing for the projects that are appraised by development banks. (Stiglitz, 1996)

The Asian countries development banks were successful due to selection of viable businesses within the priority sector, strict control on lending, implementation professionalism and institutional transformation, minimizing government intervention, setting priority sector, minimizing political intervention in the credit decision, intervention of private banks on those co-financed projects. (Stiglitz, 1996)

2.9.3 Financial Markets

In developing countries, commercial banks have played an important role in financing of long-term projects for infrastructure investment where corporate bond markets are relatively undeveloped and unable to raise the required levels of long-term finance. (United Nations, 2014)

Jeff Madura has defined financial market as follows.

"A financial market is a market in which financial assets (securities) such as stocks and bonds can be purchased or sold. Funds are transferred in financial markets when one party purchases financial assets previously held by another party. Financial markets facilitate the flow of funds and thereby allow financing and investing by households, firms, and government agencies. This enables for financial deficit units like households, investors and government institutions access funds from financial institutions". Madura, 2010

The role of financial markets is transferring of funds from those who have excess funds to those who are in need it for different purposes. Issuing securities enables corporations and government agencies to obtain money from surplus units and thus to spend more money than own equity. (Madura, 2010)

There are different types of financial markets distinguished by the maturity structure and trading structure of securities. The financial market that facilitate the flow of short term funds with maturity of one year or less are money markets, where as those that facilitate the flow of long term funds are capital markets. The money markets and capital markets are traded in primary

markets (issuance of new securities) and secondary markets which allows for change in the ownership of the securities. (Madura, 2010)

Only a small portion of long-term investments in East Asia have been financed by corporate bonds except for Thailand and Korea since 1980, bonds accounted for much less than 10% of the net financing of nonfinancial corporations among five high performing East Asian economies. The basic reason for low performance of bond markets was absence of bond markets of government securities. However, these countries have strengthened their legal infrastructure for securities market (bonds and equity) by intervention of government by issuing guarantees to encourage it. (World Bank 1993a).

The study made by Laura Alfaro (Harvard Business School), Areendam Chanda (Brown University), Sebnem Kalemli-Ozcan (University of Houston), and Selin Sayek (Bentley College) in 2000, shows that in countries that have better financial markets FDI plays an important role in contributing to economic growth. The development level of local financial markets is crucial for these positive effects to be realized.

2.10 International practice of bank for financing manufacturing sector

In developing countries like South Korea, Malaysia, Taiwan, India, Thailand and China contribution of banks in the industrialization was vital. In these countries, the financial intermediation through availing credit facilities with financial advice was intensive. (Central Bank of Nigeria Economic and Financial Review, 2010)

In most countries development financing is made through development banks. They undertake entrepreneurial functions, such as determining the scale of investment, the choice of technology and the markets to be targeted by industry, and extension functions, such as offering technical support. Summary of some developing countries bank financing manufacture sector is summarized as follows. (C.P. Chandrasekhar, 2010)

2.10.1 South Korea Banks

In South Korea banks are organized in sectorial bases like Industrial Bank of Korea and the Korean Development Bank.

- These specialized banks are formed to support some specialized sectors.
- The government created National Investment Fund (NIF) to finance Heavy and Chemical Industries (HCIs).
- Most funds were allocated to export firms participating in strategic industries in credit rationing and selection mechanism.
- The credit sanctioning in South Korea banks was executed through availing of money and the priority interest rates of loans like for exporting industries
- The Korean government implemented credit rationing based on the importance of exports, imports substitutions, and some others that were supposed to contribute to economic development.

2.10.2 Indian Banks

India is also one of the developing countries that relied heavily on banks in their industrialization effort.

- India has established an Industrial Finance Department (IFD) within the Reserve Bank of India (RBI) and that administer a credit guarantee scheme for small-scale industries.
- State Financial Corporation's (SFCs) were created to encourage state level medium-size industries with industrial credit.
- The Industrial Credit and Investment Corporation of India (ICICI) is also development finance institution in the private sector that is established with encouragement and support of the World Bank in the form of a long term foreign

exchange loan and backed by a similar loan from the government of India. (C.P. Chandrasekhar, 2010)

- India has also set Industrial Development Bank of India (IDBI) as term lending institution and the United Trust of India (UTI) as an investment institution, both served to support various term financing

2.10.3 Brazilian Bank

The other country the bank's role is high in supporting manufacturing sector is Brazil.

- Brazil established Banco Nacional de Desenvolvimento Economicoe Social (BNDES) initially to finance transport and power overwhelmingly dominated its lending, subsequently it diversified in financing sectors such as nonferrous metals, chemicals, petrochemicals, paper, machinery, and other industries.
- In early years BNDES investments were focused on the public sector, however, there was a significant shift in favour of the private sector in later years[2].

2.11 Challenges of financing manufacturing sector

Commercial banks play a critical role to emerging economies where access to capital markets is not available or not matured. Banks that perform well contribute national economic growth. One of the businesses of the bank is lending. In most commercial banks majority of bank's assets are loans[3].

Lending activities may not go always smoothly. Loans granted for borrower sometimes may not be collected due to different internal and external factors. If loans granted are not collected with regular repayment or within due date bad or non-performing loans will be created. Due to their

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[2] Deloitte: Competitive Brazil Challenges and strategies for the manufacturing industry 2012

[3] World Economic Situation and Prospects 2014 United Nations New York, 2014

involvement in credit financing banks are exposed to the risks of default loans. (Waweru and Kalami, 2009)

The borrowers fail to pay their loans regularly during the economic meltdown that lead to the businesses activities slow down, internal business management failures and other external factors. As a result of these factors borrowers fail to satisfy their commitment and banks suffer with none performing loans and loss of credit market. These crises create financial systems instability and require closer control and supervision on lending activities and institutions. (Boudriga, Taktak, and Jellouli, 2009)

Non-performing loans are caused by both bank specific and macroeconomic factors (internal and external factors). Internal factors include poor credit policy, weak credit analysis, poor credit monitoring, and inadequate risk management, inadequate collateral security, Low debt to equity ratio and insider loans or integrity of lender. The external factors include natural disaster, government policy and the integrity of the borrower as the major factors that caused non-performing loans. (Joseph, 2012)

In the Far East Asia when banks and firms fail to meet its commitment due to delinquent loans; the government has bailout by acquiring partly until they recover from this crises and this is practiced by Japan, Indonesia and South Korea. (Stiglitz, 1996)

2.12 Empirical Analysis of Bank Credit Financing for Manufacturing Sector

The role of bank credit is vital in the growth of manufacturing sector to achieve a high economic growth as indicated in the GTP. This objective is not achievable without significant levels of resources from the financial sector being mobilized and deployed to finance manufacturing sector expansion and growth. Banks have to be effective in intermediation of finance by mobilizing and channelling deposits to the productive sectors of the economy like the manufacturing sector. (GTP I, 2010)

Manufacturing sector plays catalytic role in a modern economy and has many dynamic benefits crucial for economic transformation. It is a road to increase productivity related to import substitution and export expansion, creating foreign exchange earnings and raising employment. (GTP I, 2010)

In the past two decades, Ethiopia has been following the Agricultural Development Led Industrialization (ADLI) economic policy. Then after, the government has adopted successive five year Growth and Transformation Plan (GTP) for the periods (2010/11-2014/15). (GTP 2013)

The Ethiopian economy is dominated by the agricultural sector for long period; however, contribution of manufacturing sectors has started to show gradual changes in the recent times. Previously value added shares of manufacturing sector had been stagnant and relatively small in the total GDP while it started to improve after the implementation of GTP in 2011. (MoFED GTP Review, 2014)

The share of the industrial sector in GDP increased to 12.4% in 2012/13 from 10.3% in 2009/10, while the agriculture sector accounted for 42.9% in 2012/13; diminishing from the 46.5% recorded in 2009/10. However, contribution of the industry sector, which averaged around 11% over the last ten years, still is minimal, even as compared with Sub Saharan Africa (SSA) average of 29.9%. ((MoFED GTP Review, 2014)

The industry sector is one of the anticipated sectors to play a great role in GDP growth, job creation, foreign exchange earnings, SMEs development, etc., in the GTP period. Particular emphasis is given to the promotion of micro and small enterprises as well as supporting the development of medium and large scale industries. Industry zones development and Public Enterprises Management and Privatization are also the focus of GTP in industry development of the country. (MoFED GTP Report, 2013)

The GTP envisions that industry will become more diversified and sophisticated, and will comprise a greater share of exports over time. It also aims at promoting vertical and horizontal linkages between the agricultural and industrial sectors. (GTP Report 2013)

Table 4.1 Structural Decomposition of GDP by Major Sectors (% Share)

Particular	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13
1. Agriculture	52.1	52.6	52.3	51.2	49.5	47.8	46.5	45.6	43.9	42.9
2. Service	38.0	38.0	38.6	39.8	41.6	43.1	44.1	44.4	45.1	45.2
3. Industry	11.0	10.7	10.6	10.4	10.3	10.2	10.3	10.7	11.5	12.4
Manufacturing	4.1	4.1	4.0	3.9	3.8	3.8	3.8	3.9	4.2	4.2
Large & Medium Scale	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	2.9
Small Scale	1.6	1.6	1.5	1.4	1.3	1.3	1.3	1.3	1.4	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: MoFED, 2013

Looking at the recent performance of manufacturing in Ethiopia, the sub-sector have registered improving share in the total GDP over the last three years; although its share had been slightly declining during the 2005/6 to 2009/10.

In the manufacturing sector, lack of access to external financing (investment capital) to expand operations and for working capital is a barrier to scale up of the industry. The government has tried to resolve this problem by availing capital and providing tax holiday for investors through; (Korea International Cooperation Agency, 2013)

- Allocating fund for Development Bank of Ethiopia to finance priority sectors such as manufacturing and Agriculture.

- Providing as incentive for FDI to enable repatriation of profits and provision of tax holidays.

Despite these efforts, the amount of finance flowing to the manufacturing sector is insufficient for its investment needs. (Korea International Cooperation Agency, 2013)

In order to resolve these challenges banks are encouraging culture of saving to strengthen source of finance and the country's savings rate increased to 11% of GDP, Total domestic credit provided by the banking sector in Ethiopia is (37% of GDP) while in Kenya (40%), however, credit to the private sector is very low 18% in Ethiopia compared to 30% in Kenya**. (**Korea International Cooperation Agency, 2013)

One of the challenges identified by Korea International Cooperation agency (KOIKA) study is local banks don't have international banking best practices. As a result, local banks have no innovative financing that move beyond strictly collateral based lending (with rigid collateral definitions) into more sophisticated approaches. (Korea International Cooperation Agency GTP Review August 2013)

2.12.1 Involvement of Banks in Financing the Manufacturing Sector

Nationwide there are 16 private and 3 government owned banks engaged in commercial and developmental financing activities which accelerate the advancement of the country's economy. CBE and DBE are taking the lions share in financing manufacturing sector. The private owned commercial banks also play their own role by availing the necessary finances to enhance the manufacturing sector based on the bank's internal working procedure, viability of the project, financial capacity and other bank specific eligibility criteria

From these banks Development Bank of Ethiopia (DBE) is specialized in financing for prioritized development viable projects. DBE has priority area for credit financing for commercial agricultural products, agro-processing industries and manufacturing and extracting industries.

As mentioned above, the manufacturing sector has been financed by both public and private banks. The credit financing of CBE, DBE and other banks for manufacturing sector comparative table is indicated here below.

Table 2.12.1: Summary of All Banks Loans and Advances, Credit Financed for Manufacturing Sector (in millions of birr)

Year	Total loan & advances granted (a)	Loan granted for Mfg* (b)	% of loan growth for Mfg	share of loan for Mfg (b/a)	CBE loan to Mfg (c)	DBE loan to Mfg (d)	Other Banks to Mfg (f)	Other banks' Share % (f/b)	CBE's share of % (c/b)	DBE's share % (d/b)
2004	31,597.60	4,207.60		13.32%	1,103.79				26.2	
2005	29,106.50	5,135.60	22.06%	17.64%	1,233.26	3,017	885.84	17.2	24	58.7
2006	39,631.20	6,320.10	23.06%	15.95%	1,329.59	3,138	1,852.36	29.3	21	49.7
2007	44,317.50	6,996.50	10.70%	15.79%	1,497.43	3,111	2,388.06	34.1	21.4	44.5
2008	48,241.80	7,897.00	12.87%	16.37%	2,053.08	3,084	2,760.03	35	26	39.1
2009	51,633.50	9,081.60	15.00%	17.59%	2,338.55	3,880	2,862.75	31.5	25.8	42.7
2010	62,280.70	12,718.40	40.05%	20.42%	3,599.30	5,767	3,352.18	26.4	28.3	45.3
2011	77,690.50	20,650.50	62.37%	26.58%	8,587.77	7,891	4,171.55	20.2	41.6	38.2
2012	116,346.10	33,557.30	62.50%	28.84%	18,673.49	13,376	1,507.91	4.5	55.6	39.9
2013	151,344.30	48,739.00	45.24%	32.20%	30,514.89	12,286	5,937.95	12.2	62.6	25.2
Average Growth			32.65%	20.47%						

Source: MIS of CBE, NBE reports (2013) and an own computation

Mfg*: Manufacturing

As indicated in the above table both private and public owned banks have contributed for financing of manufacturing sector. However, the depth of each bank's financial allocation varies due to the purpose the banks are established, stakeholder's interest, the mission in which the banks are formed, the source of fund and the purpose of the fund is allocated.

The total loan granted by all banks at national level for manufacture sector is increasing from time to time. The trend of growth from period to period varies from minimum increment by 10.7% in 2007 to maximum of 62.5% in 2012. In the past ten years the average growth of credit financing of manufacturing sector is 32.65%.

When we compare financing made by CBE, DBE and other banks, the lion share of financing for manufacturing sector has been made by DBE's for the periods 2004 to 2010 as it is specialized bank for financing of this sector. However, starting from 2011 CBE has become dominant financer for the manufacturing sector.

The private banks enrolment in the period 2006 to 2009 was greater than CBE; however, then after their share has declined. The credit financing share of other banks excluding DBE was within the range of minimum 4.5% in 2012 to maximum of 34.1% in 2007 which shows private banks involvement in financing the manufacturing sector fluctuates in different times.

The CBE's role in supporting manufacturing sector is increasing from time to time. In 2004 the credit financing was birr 1.1 billion and later reached birr 30.5 billion in the year 2013 which showed significant increment within 10 years' time. This proves that CBE's involvement in financing the manufacturing is growing immensely in recent periods. After the bank targeted its credit financing towards priority sector; its allocation of fund for manufacturing sector has increased aggressively and its share from banking industry for manufacturing sector has reached
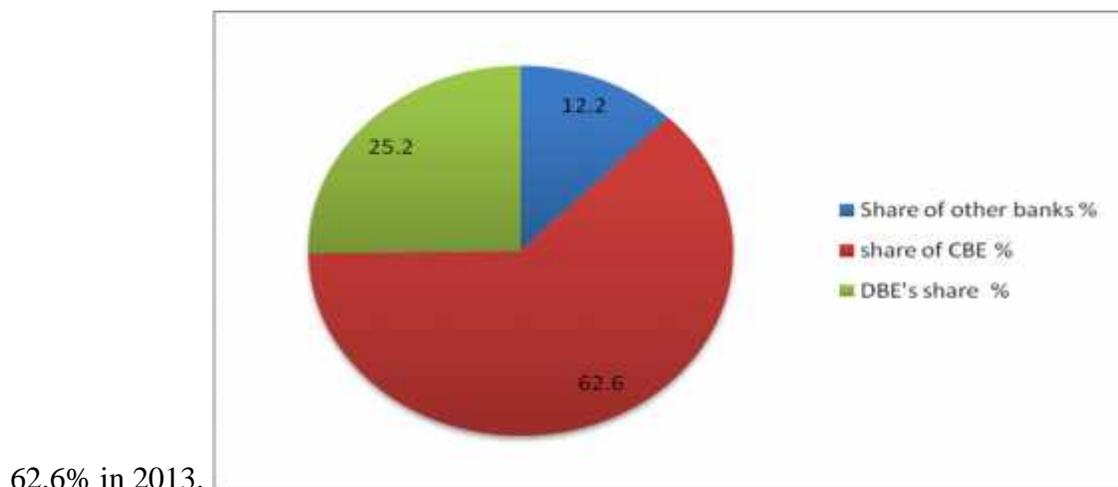
62.6% in 2013.

Fig. 2.12.1 Share of banks in financing manufacturing sector

As indicated in the pie chart the credit financed for manufacturing sector by CBE is greater by far than the total financed by DBE and other banks. The involvement of CBE financing of manufacturing sector is aggressively increasing.

From total loans and advances granted for different purpose, the proportion of loan granted for manufacturing sector is increasing progressively from minimum of 13.32%(2004) to maximum of 32.20% (2013), and in overall there is on average growth of 20.47% within ten years. As indicated above, this is influence of CBE's progressive financing for the sector. However, yet the proportion of credit financed for the manufacturing sector is minimal due to low involvement of private banks financing for the sector.

2.12.2 Case Study on Commercial Bank of Ethiopia

Commercial Bank of Ethiopia has been providing different banking services that include maintaining saving account, current (demand) account, loan, transfers, facilitating local and foreign transactions and other services related to banking business.

2.12.3 Changes Undertaken in CBE to Improve Banking Service

The banking business is one of fast changing business. This necessitates timely adjustment to changing conditions through proper management and control for its survival, to reach the customer's need, and to satisfy stakeholder's objective.

CBE has instituted a new way of undertaking activities at different times to fulfill customers' expectations and provide with quality services so as to retain them and attract new ones in line with the fast changing demands. It has implemented Business Process Re-engineering (BPR) in 2008/09 that has helped to bring significant and rapid improvements in banking service, manpower development, and attitude change of staff.

CBE following the implementation of BPR, it implemented another performance measurement management tool to track accomplishment of bank's strategic plans. Accordingly, the bank implement balanced score card (BSC) in 2010 which serves as a measurement and management framework tool. (CBE five-year corporate scorecard, 2010)

Credit is one of the core processes of the bank from which management tools of BPR and BSC are practiced. Considering this into account, the credit process has revised every time Credit procedure and policy in line with the bank's current practice.

The bank revises overall credit policy and procedure every three years for proper pre-review of credit cases before granting the loan and for proper post-follow up of loan after disbursement. In addition to this every time depending on customer demand, Government policy change, and other unexpected circumstances procedural amendments will be made.

The features of the redesigned credit process following implementation of BPR is customer focussed, team based credit processing, created self-empowered and responsible performers and incorporated four eye principles (checker and maker). (Credit procedure volume I, 2013)

Following Growth strategy of Government, the bank has identified and set priority economic sectors for financing (Manufacturing, Export, and Agriculture).

However, in the early periods since the manufacturing sector financing needs huge amount of capital and intensive feasibility study, credit financing was limited to some selected sub sector. In most cases the focus of credit financing in the form of working capital for domestic trade service that includes merchandise business, import, transport (dry cargo, fuel cargo and public transport) and least amount for export, agriculture and manufacturing projects. (Commercial Bank of Ethiopia priority sector review report, 2014)

However, currently by changing its credit financing direction and considering manufacturing as one of priority financing, the bank is granting loan for both fixed and working capital for large projects.

One of the criteria that were in practice in financing of projects includes committing or investing as equity contribution at least 30% of the initial investment capital before any disbursement of the approved loan. (CBE, Credit procedure 2009 and 2013)

However, since this requirement becomes an impediment for smooth implementations of a project, the bank modified loan disbursement modalities. The borrowers are allowed to commit their equity contribution gradually throughout project phase depending on the nature of the project and financial requirement to ensure the smooth implementation of the project. As a result, it is allowed to invest the equity contribution along with the bank loan on a phase-by-phase basis. (CBE Credit procedure volume I, 2013)

As stated above the bank has made in credit process to focus on customer satisfaction and priority sector financing. To implement this direction, the bank has developed new credit products, limited credit processing time, created flat organizational structure, segregated duties and responsibilities of performers in the form of maker and checker, and shifted from collateral oriented financing to cash flow based financing. (CBE Credit procedure volume I, 2013)

2.12.4 Granted Loans and Advances for Manufacturing Sector by CBE

Commercial bank of Ethiopia has been participating in most cases short term credit financing for domestic trade service which includes merchandise business, import, transport (dry cargo, fuel cargo and public transport) and least amount for export, agriculture and manufacturing projects. However, starting 2010 onwards it has begun financing majority of credit for identified priority economic sectors and exceptionally for socially vital business.

For these sectors the bank finances for both capital investments for acquisition of fixed investment and working capital requirement in the form of short(maximum three years), medium (more than three to seven years) and long term loans (for more than seven to fifteen years) for financing of different business sectors depending on the nature of business requirement.

In addition to this bank gives loan against Corporate Bond which is granted as long term loan to public enterprises (Electric Power Office (EEPO) and the Ethiopian Electric Services Office (EESO) and Housing Development Agencies (HAD) against their issued bond to finance their financial needs.

The CBE buys corporate bonds named as coupon or term bond based on mode of principal and interest repayment nature. Loan repayment modality of coupon bonds is interest and principal repayment would be made on instalment bases synonymously and term bonds interest is repaid periodically while a lump sum of principal is repaid at maturity. Their maximum maturity period is 10 years. (Credit procedure, 2013)

The overall credit portfolio of CBE and financed for manufacturing sector for the past ten years is summarized as follows.

Table 2.12.5: Total Loans and Advances and Loans Financed for Manufacturing Sector (Birr, in Millions)

Year	manufacturing sector loan (a)	% of Growth	Total Loans & Advances (b)	Bonds(c)	Total loans & bonds d = (b+c)	Financing made in the form of bond	% age share of total mfg(a/d)
2004	1,103.80		8,135.00	12,952.30	21,087.20	61.42%	5.2
2005	1,233.30	11.73%	9,556.40	10,092.90	19,649.40	51.36%	6.3
2006	1,329.60	7.81%	9,295.50	17,121.60	26,417.10	64.81%	5
2007	1,497.40	12.62%	9,758.70	20,982.30	30,741.00	68.26%	4.9
2008	2,053.10	37.11%	17,338.50	19,868.40	37,207.00	53.40%	5.5
2009	2,338.60	13.91%	19,375.60	25,234.20	44,609.80	56.57%	5.2
2010	3,599.30	53.91%	22,859.00	34,304.50	57,163.50	60.01%	6.3
2011	8,587.80	138.60%	34,217.70	43,065.90	77,283.60	55.72%	11.1
2012	18,673.50	117.44%	58,327.00	64,489.40	122,816.40	52.51%	15.2
2013	30,514.90	63.41%	70,432.30	82,805.00	153,237.30	54.04%	19.9
Average Growth		50.73%	**29.78%**	**25.72%**	**25.77%**		

Source: - MIS of CBE and Own Computation, 2013

Mfg: manufacturing

As indicated in the above table, in the past ten years (2004-2013) the bank has shown magnificent growth in overall credit financing. Its total loans and advances have increased from birr 8.13 billion to Birr 70.43 billion with average growth of 25.77% per annum and financing in the form of bonds has also increased from Birr 12.9 billion to Birr 153.2 billion which is substantial growth.

When we look at the credit financing for the manufacturing sector, the trend of its growth from 2004 to 2009 was slow and within the range of 8.81% to 37.11%. However, after 2010 in which the bank begun to finance the priority sector, its growth has shifted significantly between minimum 53.91% to maximum of 138.6%. Within these ten years there is an increase from birr 1.1 billion to birr 30.5 billion with average growth of 50.73% per annum.

The CBE's share of financing for manufacturing sector has been minimal ranging from 4.9% to 6.3% in the year 2004 up to 2010, then after the share of manufacturing sector loans to the total loans and advances including bonds has increased from 11.11% to 19.91% (2011 to 2013). Financing manufacturing sector has increased with a good progress; however, when we compare with over all financing of other sector the ratio is still very minor.

2.12.6 Credit Financing for Manufacturing Sector by Ownership

Commercial Bank of Ethiopia finance both public and private owned manufacturing sectors. The bank gives priority for selected sectors that are given attention by the Government as national development priority.

The motive of investment by the public and the private manufacturing sector is different. The motive of most private investments profit are driven; whereas public investments focus on lying foundation of a development strategy and focus on socially vital sectors. In addition to this, public enterprises involve on those projects that demand high initial capital investment with long term return on investment but vital for society. (Stiglitz Joseph, 1996)

During the review of the policy and strategy document of the Commercial Bank of Ethiopia, there are no any points which differentiate in financing of public and private for manufacturing sector. The details of financing made by CBE for public and private manufacturing sector for ten years are tabulated here below.

Table 2.12.6: Total Loans and Advances financed for private and public Manufacturing Sector (In Millions)

Year	Total loans for Mfg		Loans for public Mfg		Loans for private Mfg		
	Granted loan	**Growth trend**	**public sector**	**Growth trend**	**private sector**	**Growth trend**	**Share of Private**
2004	1,103.80		335.5		768.3		
2005	1,233.30	11.73%	377	12.37%	856.3	11.45%	69.43%
2006	1,329.60	7.81%	432.7	14.77%	896.9	4.74%	67.46%
2007	1,497.40	12.62%	570.4	31.82%	927	3.36%	61.91%
2008	2,053.10	37.11%	882.9	54.79%	1,170.20	26.24%	57.00%
2009	2,338.60	13.91%	1,132.80	28.30%	1,205.80	3.04%	51.56%
2010	3,599.30	53.91%	1,578.70	39.36%	2,020.60	67.57%	56.14%
2011	8,587.80	138.60%	6,140.00	288.93%	2,447.80	21.14%	28.50%
2012	18,673.50	117.44%	14,792.50	140.92%	3,881.00	58.55%	20.78%
2013	30,514.90	63.41%	27,036.10	82.77%	3,478.80	-10.36%	11.40%
Average		50.73%		77.12%		20.64%	

Source: CBE, MIS and my own computation, 2013

When we look at the trend of credit financing growth, the public manufacturing sector has been growing from minimum growth rate at 12.37% in 2005 to highest growth rate of 288.93% in 2011. Whereas the private manufacturing sector financing growth has shown even below previous year (negative 10.36%) in 2013 and maximum growth was made in 2010 at 67.57%

When we look at the share of loans granted for private manufacturing sector from total loan granted for manufacturing sector, the maximum share was 69.43% in 2005; then after it has been

declining continuously and reached 11.40% in the year 2013. The majority of financing is made for public manufacturing sectors.

As explained above, from the credit financing made to the public enterprises; the government has considered as foundation of a development strategy among manufacturing sub sectors are sugar and metal manufacturing developments. As per explanation of bank officials and performers, the reason for low private sector enrollment in manufacturing sector in relative to public manufacturing sector financing, they responded that most of big manufacturing projects require big initial capital investment and sometimes it become unaffordable specially for local investor and its return on investment also require long time. Therefore, local private investors prefer, to investment in businesses that have high return with short period. When private and public businesses approach the bank for financing of viable manufacturing sectors, it treats both equally without any differentiation.

2.12.7 CBE's Credit Portfolio in Terms of Loan Tenure

When we look at credit financings of commercial bank of Ethiopia, its credit portfolio in terms loan financing tenure is classified in to short term loans, medium and long term. Long term financing is related to financing for long term projects investments including for public infrastructure development such as roads, telecommunication and transport services, and for acquisition of heavy industry machineries, health service institution developments, power generation, residential buildings, to fulfill permanent working capital requirements and other investments.

The others are short and medium term financing provided to support alleviate temporary working capital requirements, renovation cost, technology change, and to exporters to encourage export of locally produced items with discounted interest rate. The CBE's loan tenure for the last five consecutive years is indicated as follows.

Table 4.5: Loan Tenure of CBE from March 2009 to March 2014

Period	Long Term		Medium		Short Term		Total
	Outstanding	% Share	Outstanding	% Share	Outstanding	% Share	Outstanding
2009	2,768,438,630	15.39%	3,788,284,253	21.06%	11,433,931,393	63.55%	17,990,654,276
2010	3,481,968,979	20.99%	3,594,771,681	21.68%	9,508,030,081	57.33%	16,584,770,741
2011	4,895,443,892	15.70%	4,719,204,651	15.13%	21,567,945,053	69.17%	31,182,593,596
2012	12,361,409,815	23.86%	2,439,440,147	4.71%	37,001,284,843	71.43%	51,802,134,805
2013	28,677,597,301	40.45%	9,054,864,178	12.77%	33,171,723,422	46.78%	70,904,184,901
2014	39,669,839,923	45.70%	10,168,501,606	11.71%	36,975,196,461	42.59%	86,813,537,990

Source: - MIS of CBE and Credit Portfolio Management Sub Process of the Bank   (2014)

As indicated in the above table, the bank's long term financing proportion in relative to total outstanding loans and advances shows continuous growth that has reached from 15.39% in 2009 to 45.70% in March 2014 excluding bond financing. Whereas, medium term loan and short term loans ratio in relative to total outstanding loans shows continuous decline. However; an increase in longer-term finance, given the short-term deposit may create liquidity mismatch. Besides the repayment period of some government loans are under grace period and may take long time to commence repayment.

We have discussed about the future impact of long term credit financing with short term deposit, and the management responded that the bank is working by encouraging continuous resource mobilization to minimize liquidity mismatch and to address demand of financing priority sector credit financing.

2.12.8 Challenges of Financing Manufacturing Sector

As explained in the literature review, the major challenge of manufacturing sector in most developing countries is lack of educated and trained workforce, innovation, research and development, and global competitiveness. In addition to these financing manufacturing sectors have also challenge of fulfilling requirement of cumbersome documentation process, inadequate

long-term finances, lack of data base, rent seeking in both banking industry and borrowers side. Some of common challenges of financing this sector are indicated here below.

2.12.8.1 Non-performing Loans

As stated in the literature review part, the role of commercial banks in financing manufacturing sector in developing countries where capital market is not matured is high by intermediating in saving mobilization and loan granting. However, recollection of loans financed is one of the challenges for the banks and it is one of tasks of the banks that require high attention.

The borrowers fail to pay their commitment due to internal and external factors; some of them are natural calamity, government policy changes, mismatch of demand and supply, fail to meet computation in price and quality, the integrity of lender and borrower, poor credit policy, weak credit analysis, poor credit monitoring, inadequate risk management, inadequate collateral security and other factors.

Based on the above factor and other factors the Commercial Bank of Ethiopia has also faced none performing loans while financing manufacturing sector and this is indicated in the table below.

Table 2.12.8.1 : Total Loans and Advances for Manufacturing Sector and Non-performing Loan, (In Millions)

Year	Mfg loan Outstanding (a)	NPL (b)	The NPL growth Trend	Ratio of NPL to total loan(a/b)
2004	1,103.80	338		30.62%
2005	1,233.30	306	-9.47%	24.81%
2006	1,329.60	266	-13.07%	20.01%
2007	1,497.40	151	-43.23%	10.08%
2008	2,053.10	150	-0.66%	7.31%
2009	2,338.60	212	41.33%	9.07%
2010	3,599.30	146	-31.13%	4.06%
2011	8,587.80	86	-41.10%	1.00%
2012	18,673.50	161	87.21%	0.86%
2013	30,514.90	591	267.08%	1.94%
Average Growth	**50.73%**			

Source: CBE, MIS and own computation, 2014

As indicated in the above table, the growth trend of none performing loan of manufacturing sector varies from time to time; however, there is a declining trend in most case. However, when we look at the ratio of loans financed for manufacturing sector with status of NPL to total loan financed for the sector, it shows a declining trend from maximum of 30.62% in 2004 to minimum level of 0.86% in 2012. From the total loan financed for manufacturing sector in 2013 the maximum amount of Birr 591 million is reported as NPL; which is 1.94% of the loan financed for the sector.

While discussing with officials of the bank and performers the causes for none performing loans are diversion of the fund from primarily intended purpose for other purposes. In most case fund financed for working capital is diverted to other fixed investment and expansion without knowledge of the bank. The diversion of the fund to unintended purpose will create working capital shortage that will lead to overall collapse of the existing and new business; as a result the loan will become delinquent loan.

The bank officials and performers have also responded that the basic causes for initiation of the customers to divert the fund are their fear that they might not get additional fund and failure to fulfill the bank's requirement. The bank officials also responded that, if the customers come up with their request by fulfilling the bank's financing requirement, the borrower will get immediate response as it is priority sector.

The other cause for NPL for the manufacturing sector is financing made for projects that come up with old machineries that has served long time in other countries. This is common especially in some of FDI. FDI come by dismantling old factory machineries which require additional fund for renovation and maintenance cost, inefficient in production, and high energy consumption which cause high cost of production. Due to the above factors some of the investments will not be successful with international and local market and they fail to satisfy their loan commitment.

As per our discussion there are also some internal causes for delinquent loans like lack of skilled man power with knowledge of the sector and problem of proper follow, foreign currency

shortage and on the borrowers' side lack of management skill and experience to compute with international market, and sometimes intentional default.

2.12.8.2 Source of Fund for Credit Financing of Manufacturing Sector

The availability of fund in the bank is one of the basic factors for financing of the manufacturing sector. Therefore, banks have to mobilize resources for lending to manufacturing sector. For implementation of GTP, one of the key roles of banks is mobilizing resource and financing manufacturing. This requires significant levels of resources mobilization and deployment for expansion and growth of this sector. Therefore, banks have to intermediate in mobilizing and channelling deposits in the form of credit to the manufacturing sector.

CBE has been mobilizing saving deposit as one of its core business since from its establishment. While discussing with the bank officials the credit demand for different businesses is growing from time to time. As it becomes difficult to address all credit demand, the bank has identified the sectors to be prioritized for financing and moving aggressively to mobilize domestic resource. The resource mobilization performance of CBE is indicated here below.

Table 2.12.8.2: Deposit Mobilization of CBE (in millions)

Period	Demand	Savings	Time	Total	Growth trend
2002/03	13,585.20	12,505.20	1,887.00	27,977.40	
2003/04	16,376.30	14,372.20	1,929.40	32,677.90	16.80%
2004/05	18,919.40	17,311.40	2,284.60	38,515.40	17.86%
2005/06	21,264.10	20,488.20	2,706.80	44,459.10	15.43%
2006/07	26,267.60	23,718.80	3,878.90	53,865.30	21.16%
2007/08	29,742.00	29,482.20	3,732.00	62,956.30	16.88%
2008/09	37,267.30	37,153.30	3,731.40	78,152.00	24.14%
2009/10	46,149.00	48,049.90	4,434.40	98,633.30	26.21%
2010/11	70,842.40	64,528.70	5,160.60	140,531.80	42.48%
2011/12	92,254.80	82,494.60	12,541.30	187,290.70	33.27%
2012/13	116,150.50	106,035.60	14,960.50	237,146.60	26.62%
2013/14	128,788.10	145,824.30	18,235.40	292,847.90	23.49%
Average Growth					**24.03%**

Source: CBE annual financial statement and own computation, 2003 to 2014

As indicated in the above table resource mobilization of the bank is increasing progressively. The deposit mobilization has shown growth from 15.43% minimum to maximum of 42.48% and on average from the period 2002/03 to 2013/14 there is a growth of 24.03%. While discussing the management of the bank, they have explained that due to the presence of mismatch between the demand for credit and the fund available, CBE is moving aggressively in mobilizing resource at least to address credit demand for priority sector.

2.12.8.3 Skilled Man Power

The credit financing operation of the bank involves pre-sanctioning appraisal and post sanctioning monitoring and follow up. The appraisal of credit includes the operation of appraising worthiness of the business by gathering, processing and analyzing information about the business and borrower.

In case of CBE all necessary documents and information required for appraisal of the credit request will be gathered by customer relation managers of the bank; whereas the appraisal of the credit will be done by credit appraisers. Both the credit relation mangers and appraisers recommend their decision based on appraisal report.

After appraisal of the credit request and recommendation, the credit decision making to approve or not to approve is made based on the appraisal report. This decision is made by the independent credit approving team that constitute neutral chairperson and representative of credit management and credit appraisal team in different level of credit core process.

Based on the decision of the credit approving team communication of the decision, follow up the loan allocation for intended purpose, loan repayment follow up, identifying early warning signals

and preliminary amicable workout resolutions for default loans will be made by customer relation managers.

Therefore, for proper functioning of indicated credit operation of the bank requires qualified and experienced human resource. Credit financing of manufacturing sector needs its own special technical assessment. This requires knowledge of banking business, manufacturing sector technical knowledge, designing special credit product that fit the need of specific sub sector and other requirements.

During discussion with the bank officials and performers they have expressed that due to expansion of the banks business, to mobilize the resource, and to address the demand of the customer; the bank is recruiting qualified staffs with education level of first degree, master's degree and doctorate depending on human resource requirement of specific sector.

When we look at the commercial bank of Ethiopia, human resource for credit appraisal of manufacturing sector financing need, the officials responded that most of the experts involved in financing of this sector are generalists that have business academic background with on job training and get technical advice from mechanical engineers. However, the bank doesn't have specialized experts that handle manufacturing sector financing and yet there exists skill gap by performers.

2.12.8.4 Availability of Information

Appropriate information about the business and the borrower is vital for quality credit decision. The source of these information are information provided by the customer, information gathered by customer relation manager and appraiser, credit information gathered from bank's management of information system (MIS) about customer credit history, statistical and other related studies from Credit Portfolio Management team.

Therefore, the availability of information in the manner required and organization of information by responsible organ, and quality of information are vital for proper appraisal and decision of the credit request.

During discussion with credit performers one of the challenges of credit financing processes are insufficient or incomplete information provision by the customer, absence of organized research support unit for credit that provide research results of specific sector, difficulty to get contemporary or updated knowledge about the sector, and absence of organized information center.

The credit decision made with incomplete information due to the challenges indicated above by performers will lead to inappropriate decision that will not address the credit request properly. As a result the credit decision could be under financing, over financing, declining or approval wrongly, setting in appropriate loan tenure, allocating inappropriate credit product and other fallacies. As a result of credit decision with incomplete information delinquent loan could result.

During discussion the bank officials have also expressed that the bank is facing a challenge in registration of collateral due to inconsistency of policy in different regions and delay in project implementation due to supply problem of electricity and other facilities timely.

2.13 Variables that affect manufacturing sector

The economic growth is related to financial development. Financial development foster economic growth by raising saving, allocating loanable funds, and promoting capital accumulation. Bank credit helps in the provision of funds for productive investment. This is particularly important in developing countries where capital markets are not fully developed. Oluwafemi, 2014

Inflation is an increase in the price of goods and services or reduction in the purchasing power of money. Inflation affects an economy in both positive and negative. Negative effects of inflation include uncertainty over future inflation which discourages investment and savings.

Inflation also has an also positive effect that initiates to spend and invest minimize further devaluation of money and this increase spending and investment that benefit the economy.

An increase inflation has had the effect of worsening profit, the adverse severely in the manufacturing industry and this is reflected Japanese-affiliated manufacturers operating in Singapore, India and Thailand, the surge in the prices of a wide range of raw materials, including iron and steel, plastics and rubber, due to increase in procurement costs.
https://www.jetro.go.jp/ext_images/en/.../pdf/2009_06_03_biz.pdf

Exchange rate is the price of one country's currency expressed in terms of some other currency. It determines the relative prices of domestic and foreign goods, as well as the strength of external sector participation in the international trade. Exchange rate results in increased imports and reduced export while depreciation would expand export and discourage import. Also, depreciation of exchange rate tends to cause a shift from foreign goods to domestic goods. Adeniran, 2014

The main sources of money supply are central bank, banks, and public. The interactions between these three groups determine the economy's money supply. The money supply is sum of currency held by the public and by the bank and deposit by the public in banks. Longer-term movements in broad money growth and inflation have positive relationship; whereby, money growth leads inflationary developments. Accordingly, it is necessary to look at factors that leads for growth of money supply beyond the normal needs of the economic cycle. In this respect, the supply of money and credit may be affected by persistent advances in banks' intermediation capacity, thus contributing to longer-term price developments in asset and goods markets, and in the short-term by market perception of the financial soundness of banks. Europian Central Bank Bulletin, 2011

Money supply exerts a positive impact on GDP growth and Balance of Payment but negative impact on rate of inflation that facilitate a favourable investment climate through appropriate interest rates, exchange rate and liquidity management mechanism. Lawrence, 2014

The classical theory states that interest is determined by the supply and demand for capital by the expected productivity of capital. Interest rate is determined by the following factors: Chris and Roland, 2012

i. The investment demand: The higher the level of investment demand the higher the level of interest rates. On the other hand, the lower the investments demand, the lower the level of interest rates.

ii. The level of savings (or conversely the level of consumption): The higher the level of savings the lower the interest rate while, the borrower the level of savings, the higher the level of interest rates,

iii. Demand for money or the liquidity preference: The higher the money demand, the lower the interest rate while the lower the money demand the higher the interest rates,

iv. The quantity of money or money supply: In the Keynesian parlance as we increase money supply the interest rate will reduce.

Capital formation refers to the process of buildup of assets of value, the increase in wealth or the creation of further wealth. Capital formation is the total change in the value of fixed assets in the economy in addition to fixed assets either for replacing or adding to the stocks, it refers to the increase in the fixed capital stocks of the capital formed. Capital formation has a positive effect on economic growth of country. Ugochukwu, 2013

CHAPTER THREE: RESEARCH DATA AND METHODOLOGY

3.1 Methodology

This paper employs co- integration technique and Granger causality tests to estimate the model, and the causality between growth rate of manufacturing GDP (GDPM) and the explanatory variables. In order to avoid spurious regression results, stationarity of variables and co-integration among them is also tested prior to estimation of error correction model and Granger causality regressions.

3.1 Data Measurement, Description and Sources

The study utilized annual observations on growth rate of manufacturing GDP (GDPM), total credit to the manufacturing sector (TCM), interest rate (INT) measured as lending rate, gross fixed capital formation (GFF), inflation rate (INF), money supply (M2) and exchange rate (EXR) measured as unit of domestic currency per dollar. The source of data for this research paper is secondary data from National Bank of Ethiopia, IMF and World Bank source materials. To generate the real GDP series, it is deflated by consumer price index. The data spanned the period 1974/75-2013/14.

3.2 Model Specification

In the background of a neoclassical growth model, the study used following empirical specification to examine the effect of bank credit financing on the performance of the manufacturing sector in Ethiopian economy. Hence the model is specified as follows:

GDMP= f (TC, LINT, GFCF, INF, EXCR, M$_2$, DV...3.1

Where; GDPM is the growth rate of manufacturing sector, TC is total credit given by banks to the manufacturing sector. LINT is lending interest rate, GFCF is gross fixed capital formation, and INF is inflation rate money supply (M$_2$) and EXCR is exchange rate. DV is the dummy variable.

The equivalent equation which will be used for estimation can be written as follows:

$$\mathbf{GDPM} = \beta_0 + \beta_1\mathbf{TC} + \beta_2\mathbf{LINT} + \beta_3\mathbf{GFF} + \beta_4\mathbf{INF} + \beta_5\mathbf{EXCR} + \beta_6\mathbf{M2} + \varepsilon t \ldots .. 3_2$$

Where, εt is the error term and $\beta 0$ is the constant term, $\beta 1$, $\beta 2$,… $\beta 5$ are slope coefficients. Regression Coefficients (to be estimated) measures how much unit gross domestic product of manufacturing sector (GDPM) would be changed with a unit change in the independent variables and εt is error term.

Where,

GDPM = The growth rate of real Gross domestic product of each Manufacturing sector;

TC = The total credits to each the sector.

INT = The lending rate;

EXR = The exchange rate; GFF is the gross fixed capital formation;

INF = The rate of inflation;

M2 = Money value

et = The disturbance term and

t = The subscript of time.

3.3 Unit Root Tests/Stationary Test/

The variables are expected to be stationary with a mean of zero and constant variance to estimate time series data. In order to look at their stationary, the Augmented Dickey-Fuller test is applied to test the null hypothesis of non stationary or unit root. A rejection of the null hypothesis indicates that the series is not stationary at level and requires differencing either in the first order or second order to achieve stationary. The logarithm values of the time series data was taken before Ordinary Least Square (OLS) techniques for estimating a model for all variables used in

the study. The logarithm is used in the model in order to transform the non linear data into linear form. All variables in the system should be stationary in the VAR model before estimation. Therefore, it is necessary to test the stationary of each data series. The ADF test of stationarity is the following specification:

$$\Delta Z = b_0 + b_1 Zt_{t-1} + \sum_{j=1}^{k} \theta j \Delta Z_{t-i} + \varepsilon t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 4.4$$

The original level data and the first-differenced level data are both tested for unit roots. If the test statistics (t-ratio) is greater than the critical values given in Fuller (1976), the null hypothesis is rejected and the data is said to be stationary.

3.4 Co-integration Tests

The study adopted the Engle and Granger (1987) approach to apply the econometric techniques. The concept of co-integration was introduced by Granger (1986) and further developed by Engle and Granger (1987). In this approach first, the existence of a co-integrating relationship among the variables under consideration is determined based on standard co-integration techniques. In a situation where the variables are stationary, a stable long-run relationship can be estimated using standard ordinary least square (OLS) techniques. Second, if there exist long run relationship in variables, there is error term of the long-run relationship that is used to create a dynamic error correction model. As noted by Engle and Granger (1987), the error correction model produces consistent results even when the right-hand side variables are not completely exogenous. Gujarati, 2004

Co-integration implies that the series do not float too much apart and are tied together by some long run equilibrium relationship. When the series are co integrated, there is no need to difference the variables. However, other techniques require differencing the variables in order to achieve stationary, which involves a loss of potential information about long-run relationships among the levels of variables. Hence, co integration analysis is able to capture these relationships, which are otherwise lost when other techniques are used. Gujarati, 2004

A multivariate test for co integration developed by Johansen (1988) and Johansen and Juselius (1990) is used in this study. The Johansen-Juselius (JJ) procedure of co-integration test is based on the maximum likelihood estimation of the VAR model. The test is carried out through a VAR system such as follows:

$$At = \alpha_1 A_{t-1} + \alpha_2 A_{t-2} + \alpha_1 A_{t-3} + \cdots + \alpha_k A_{t-k} + \delta + V_t \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots 4.7$$

$$t = 1, \text{----}, T$$

where At is a (n × 1) vector of I(1) variables; i are (n × n) matrices of parameters;   is a (n × 1) vector of constant; t is a vector of normal log distributed error with zero mean and constant variance; and k is the maximum number of lag length processing the white noise.

The trace and maximum eigen value statistics are calculated to test for the presence of r co-integrating vectors. The trace statistics (trace) tests the null hypothesis that there are at most r co-integrating vectors against the alternative of r or more co-integrating vectors. The   trace for the null hypothesis of at most r co-integrating vectors is

$$\lambda_{trace}(r) = -T \sum_{j=r+1}^{n} \ln(1 - \lambda_j) \dots \dots \dots \dots \dots \dots \dots 4.8$$

The maximum eigen value statistic (max) for the null hypothesis of r co-integrating vectors against the alternative of r + 1 co-integrating vectors is

$$\lambda_{max}(r, r+1) = -T\ln(1 - \lambda_{r+1}) \dots \dots \dots \dots \dots \dots 4.9$$

Where, λ_j is the estimated values of the characteristics roots obtained from the   matrix and T is the number of usable observations.

3.5 The Co integrated Vector Auto Regressive (CVAR) Model

Engle and Granger (1987) showed that co-integration implies, and is implied by, the existence of an error correction term. This means that changes in the dependent variable are a function of the level of disequilibrium in the co-integrating relationship (captured by the error correction term) as well as changes in other explanatory variables. Once the variables are found to be co-

integrated, a vector correction model (VECM) will be used to investigate the dynamic interactions among them in the system. The Granger representation states that for two co-integrated variables, an ECM can be found in the following form:

$$\Delta Yt = B_{0+} B_1 \Delta X_t + B_2 \varepsilon_{t-1} + \cdots + V_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\, 4.10$$

Where, t-1 represents the error correction term which captures the adjustment toward the long run equilibrium and 2 is the short run adjustment coefficient.

A principal feature of co-integrated variables is that their time paths are influenced by the extent of any deviation from long-run equilibrium. Hendry and Richard (1983) argued that ECM captures the dynamics of the system whilst incorporating the equilibrium suggested by economic theory. The appeal of the ECM formulation is that it combines flexibility in dynamic specification with desirable long run properties (Dolado et al., 1990).

3.6 Diagnostic Tests

Under the ordinary least squares estimation (OLS) of regression models, the assumptions of no serial correlation of the error terms as well as a constant variance of the error terms are held. The Breusch-Godfrey test for serial correlation and the Breusch-Pagan / Cook-Weisberg were used to test for hetero-skedasticity. If both tests fail, a robust estimator of the covariance will be applied to correct for the presence of serial correlation and heteroskedasticity. Gujarati, 2004

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION

4.1 Stationary Test

4.1.1 Augmented Dickey-Fuller (ADF) Test

This test is done using the Augmented Dickey-Fuller (ADF) and Phillips-Perron (P-P) unit root tests. The ADF test is an extension of the Dickey-Fuller test because the regression has been augmented with the lagged changes. When the ADF and PP test statistics is greater than the critical value in absolute terms, we reject the null hypothesis; there is no unit root, and if the two test statistics is less than the critical value in absolute terms, we do not reject the null hypothesis.

These tests of unit roots are performed with different trend assumptions i.e. only intercept both linear trend and intercept, and no intercept and no trend. The ADF and PP results show that levels of all the variables (gross fixed capital formation, inflation, manufacturing GDP, exchange rate credit, money supply and lending rate) were not stationary. However, when we subject the first difference of these variables to the ADF and PP tests, all the variables became stationary i.e. I (1).

Table 4.1: ADF Stationary Test/ Unit Root Test at level

First level	Test Statistic Under Different Assumptions		Order of Integration
	ADF test statistic	**Critical Value at 5% Level of Significance**	
NLMGDPM	-2.120244	-2.941145	Not I(0)
LNTC	-1.022821	-2.941145	Not I(0)
LNLINT	-1.728062	-2.945842	Not I(0)
LNGFF	-1.922965	-2.943427	Not I(0)
LNINF	-0.863008	-2.941145	Not I(0)
LNEXCR	-0.751124	-2.943427	Not I(0)
LNM2	-1.595296	-2.943427	Not I(0)

Table 5.1.1: ADF Stationary Test/ Unit Root Test at First Difference

Variable First difference	Test Statistic Under Different Assumptions		Order of Integration
	ADF test statistic	Critical Value at 5% Level of Significance	
DLNGDPM	-6.406777	-3.536601	I(1)
DLNTC	-4.680705	-3.536601	I(1)
DLNLINT	-8.619924	-3.540328	I(1)
DLNGFF	-10.36888	-3.536601	I(1)
DLNINF	-4.351191	-3.536601	I(1)
DLNEXCR	-4.232864	-3.536601	I(1)
DLNM2	-4.510667	-3.536601	I(1)

Thus, results from the above table show that all of the variables are integrated of order 1. Our next aim is to investigate whether or not growth of manufacturing sector, total credit for manufacturing, gross fixed capital formation, lending interest rate, money supply and inflation share common long run relationship(s).

4.2 Optimal Lag Selection

Prior to analyzing the VECM model, we have to test the existence of long run relationship among the variables. If there is co-integration between variables, there will be long-run relationship between them. Hence, to know whether there is co-integration or not, the Johansen-Julius co-integration method is applied. Before applying this test, it is necessary to determine the appropriate lag length by using commonly used methods like Final Prediction Error (FPE), Akaike Information Criterion (AIC), Hannan-Quinn Information Criterion (HQIC) and Schwarz Information Criterion (SIC).

Table 4.2: Optimal Lag Selection

VAR Lag Order Selection Criteria
Endogenous variables: LNGDPM LNTC LNM2 LNINT
LNINF LNGFCF LNEXCH
Exogenous variables: C
Date: 10/27/15   Time: 16:17
Sample: 1974 2013
Included observations: 34

Lag	LogL	LR	FPE	AIC	SIC	HQ
0	9.895823	NA	1.99e-09	-0.170343	0.143908	-0.063174
1	219.9172	321.2092	1.63e-13	-9.642190	-7.128184*	-8.784842
2	289.7852	78.08778*	7.07e-14*	-10.86972*	-6.155960	-9.262193*

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

The tests of LR, FPE, AIC, HQ suggests the optimum lag length to be indicates two at 5% level of significance. Thus, this study uses the optimal lag length of two for estimation techniques.

4.3 Co-Integration Test Result

Therefore, the existence of the same order of integration and choosing the appropriate lag length, allows us to test for co-integration among the variables. The Table below presents the result of testing the number of co-integrating vectors.

Date: 10/27/15   Time: 16:10
Sample (adjusted): 1976 2012
Included observations: 34 after adjustments
Trend assumption: Linear deterministic trend
Series: LNGDPM LNGFCF LNINF LNINT LNM2 LNTC LNEXCH
Lags interval (in first differences): 1 to 2

Table 4.3 Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.804996	202.0642	125.6154	0.0000
At most 1 *	0.770339	146.4831	95.75366	0.0000
At most 2 *	0.713684	96.46406	69.81889	0.0001
At most 3 *	0.512628	53.94160	47.85613	0.0120
At most 4	0.455793	29.50488	29.79707	0.0540
At most 5	0.220076	8.818432	15.49471	0.3824
At most 6	0.010749	0.367430	3.841466	0.5444

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Table 4.3.1 Unrestricted Co-integration Rank Test (Maximum Eigen value)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.804996	55.58108	46.23142	0.0039
At most 1 *	0.770339	50.01908	40.07757	0.0028
At most 2 *	0.713684	42.52247	33.87687	0.0037
At most 3	0.512628	24.43672	27.58434	0.1202
At most 4	0.455793	20.68645	21.13162	0.0576
At most 5	0.220076	8.451002	14.26460	0.3347
At most 6	0.010749	0.367430	3.841466	0.5444

Max-eigen value test indicates 3 co-integrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

As it can be seen from Table 5.3 that the unrestricted co-integration rank test (Trace) shows four co- integrating vectors at the 5% critical value in the system and Table 5.3.1, also shows the unrestricted co-integration rank test (Maximum Eigen value) shows three co-integrating vectors in the system.

4.4 Error Correction Model (ECM)

After the co-integrated model is estimated, an optimal lag of one is chosen based on the information criteria results, and the ECM is estimated by making use of these and the results of the Johansen co-integration test. The ECM consists of two parts: the long-run co-integrating coefficients (used to derive the long-run co-integrating relationship), and the short run coefficients (for the short-run analysis).

4.4.1 Long-run Relationships

After the co-integrated model is estimated, an optimal lag of one is chosen based on the information criteria results, and the ECM is estimated by making use of these and the results of the Johansen co-integration test. The ECM consists of two parts; the long-run co integrating coefficients (used to derive the long-run co-integrating relationship), and the short run coefficients (for the short-run analysis). The ECM Model provides important information on the long-run relationship between any co-integrated variables. We have the following long run ECM estimation outputs.

Dependent Variable: LGDPM
Method: Least Squares
Date: 10/27/15   Time: 14:33
Sample (adjusted): 1974 2012
Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNTC	0.255437	0.112184	2.276955	0.0296
LNGFCF	0.433026	0.144272	3.001459	0.0052
LNINF	0.079494	0.083469	0.952373	0.3480
LNLINT	0.133772	0.060460	2.212558	0.0342
LNM2	0.316233	0.139640	-2.264635	0.0304
LNEXCH	-0.038593	0.069231	-0.557457	0.5811

R-squared	0.326723	Mean dependent var		1.591735
Adjusted R-squared	0.221523	S.D. dependent var		0.163154
S.E. of regression	0.143953	Akaike info criterion		-0.894724
Sum squared resid	0.663116	Schwarz criterion		-0.636158
Log likelihood	22.99976	Hannan-Quinn criter.		-0.802728
Durbin-Watson stat	0.985151			

The main point of the VECM analysis is the error correction term (the one period lagged error terms) from the above estimated co-integrating equations. These lagged terms provide an explanation of the long run deviations from the long-run equilibrium. Hence, the main interest of the paper was to see the long run co-integrating relationship and long run dynamics between manufacturing performance and control variables.

The co-integrated estimated result of long run model of LGDPM is the following equation:

LNGDPM = 0.26LNTC+0.079LNINF-0.04LNEXCH+0.13LNLINT+0.43LNGFCF+0.32 LNM$_2$

The result indicated that except exchange rate all independent variables at 5 percent level of significance have long run effects on the manufacturing sector performance. As can be seen from the above estimated result, the long run equation suggested that TC, inflation, money supply, lending interest rate, and gross fixed capital formation positively affecting the manufacturing sector performance in the long run. In summary:

- The impact of total credit financed to the manufacturing sector is positive and significant. The result indicates that total credit has positive impact at 5 percent level of significance. The long run impact of total credit to manufacturing sector on the rate of manufacturing sector growth is found to be positive, that means 10 percent increase in total credit will increase the real manufacturing GDP growth rate by 2.6 percent in the long run. This finding is consistent with studies made by Oluwafemi (2014) the bank credit has significant impact on manufacturing growth in the long run.

- Gross fixed capital formation has positive long run effects on the rate of real GDP growth of manufacturing sector at 5 percent significance level. The long-run impact of gross capital formation and lending interest rate on rate of manufacturing sector GDP growth in Ethiopia is found to be positive. A 10 percent increase in gross fixed capital formation and lending interest rate leads to 4.3 and 1.3 percent increase in manufacturing sector GDP growth rate respectively.

- With respect to money supply, it has positive effect on the performance of manufacturing sector at 5 percent significant level. The long-run impact of money supply on manufacturing sector performance positive, which means that a 10 percent increases in money supply will increase the real manufacturing GDP growth rate ratio by 3 percent in the long run. This model assures that money supply affects manufacturing sector performance positively in Ethiopia.

- There is no significant relationship between exchange rate and manufacturing sector performance

4.4.2 Short Run Relationships

The other objective of this estimation was to investigate short run relationship between dependent and independent variables. If we get co-integrating relationship in the long run, we can estimate the Vector Error Correction model (VECM). This VECM is important to show also the short run relationship between any two co-integrated variables. Table 5.4.2 showed the first short run error correction model that assumes GDPM as independent variable.

Co-Integrated Variables Autoregressive (CVAR) Model: Short run Relationships

The CVAR Model provides important information on the short-run relationship between any co-integrated variables. Hence, the second interest of the study is to see the short run dynamics between real of manufacturing sector GDP growth rate, total credit given to the sector, inflation rate and gross fixed capital formation. From the above computation, we have the following short run CVAR estimation outputs.

Table 4.4.2: Short run error correction model that assumes GDPM as independent variable

System: UNTITLED
Estimation Method: Least Squares
Date: 10/21/15   Time: 15:42
Sample: 1976 2012
Included observations: 37
Total system (balanced) observations 37

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.889508	0.259017	3.434168	0.0022
C(2)	-0.338024	0.267847	-1.262001	0.2191
C(3)	-0.002162	0.060304	-0.035848	0.9717
C(4)	0.043453	0.056951	0.762979	0.4529
C(5)	-0.001316	0.049403	-0.026642	0.9790
C(6)	-0.054429	0.046951	-1.159285	0.2577
C(7)	-0.003142	0.016807	-0.186915	0.8533
C(8)	0.034544	0.016602	2.080665	0.0483
C(9)	-0.005438	0.065842	-0.082590	0.9349
C(10)	-0.012261	0.064166	-0.191077	0.8501
C(11)	0.022700	0.019213	1.181500	0.2490
C(12)	-0.017900	0.020235	-0.884613	0.3851
C(13)	1.692610	1.073355	1.576934	0.1279

Determinant residual covariance	0.217952	

Equation: LNGDPM = C(1)*LNGDPM(-1) + C(2)*LNGDPM(-2) + C(3)*LNTC(-1) +
    C(4)*LNTC(-2) + C(5)*LNGFCF(-1) + C(6)*LNGFCF(-2) + C(7)*LNLINT(-1) +
    C(8)*LNLINT(-2) + C(9)*LNM2(-1) + C(10)*LNM2(-2) + C(11)*LNINF(-1) +
    C(12)*LNINF(-2) + C(13)
Observations: 37

R-squared	0.620043	Mean dependent var	4.948978

Adjusted R-squared	0.430065	S.D. dependent var	0.767826
S.E. of regression	0.579663	Sum squared resid	8.064213
Durbin-Watson stat	2.120221		

The above Equation can be written as follows

LNGDPM=0.89*LNGDPM(-1)-0.34*LNGDPM(-2)-0.02*LNTC(-1)+0.04*LNTC(-2)-0.001LNGFCF(-1) -0.05*LNGFCF(-2)+0.003*LNLINT(-1)-0.035*LNLINT(-2)-0.005*LNM2(-1)-0.01*LNM2(-2) +0.022*LNINF(-1) -0.02*LNINF(-2) + C(13)

As the estimated result of the CVAR indicates that most lagged variables has insignificant impact on manufacturing sector performance in short run. The results for manufacturing sub sector estimated output show lagged manufacturing sector has significant effect manufacturing growth. A 10 per cent increase in lagged manufacturing sector will increase manufacturing GDP by 8.9 per cent. The results show that gross fixed capital formation is negatively related to manufacturing growth but the coefficient is not significant. Lending interest rate (INT) has a significant positive effect on manufacturing contrary to a priori expectation. The results show that a 1 per cent increase in credit lending rate will increase manufacturing growth by 0.34 per cent.

4.5 Granger Causality Test Result

The Granger Causality section asses that the Pair-wise granger causality between manufacturing performance and its determinant factors. The estimated Granger Causality Test Result is shown in Table 5.5. As can be seen from the Table below, we fail to accept the null hypothesis that GDPM did not cause variables and vice versa. But we fail to reject the null hypothesis that GDPM did not granger inflation and total credit.

Table 4.5: Pair-wise Granger Causality Test result

Pairwise Granger Causality Tests
Date: 10/27/15   Time: 15:52
Sample: 1974 2013
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LNGFCF does not Granger Cause LNGDPM	37	0.91680	0.4100
LNGDPM does not Granger Cause LNGFCF		1.36352	0.2702
LNINF does not Granger Cause LNGDPM	37	2.27919	0.1187
LNGDPM does not Granger Cause LNINF		3.17325	0.0553
LNINT does not Granger Cause LNGDPM	34	1.19701	0.3166
LNGDPM does not Granger Cause LNINT		1.25185	0.3010
LNM2 does not Granger Cause LNGDPM	37	0.17511	0.8402
LNGDPM does not Granger Cause LNM2		0.44139	0.6470
LNTC does not Granger Cause LNGDPM	37	0.60332	0.5531
LNGDPM does not Granger Cause LNTC		4.83332	0.0146
LNEXCH does not Granger Cause LNGDPM	37	2.15325	0.1326
LNGDPM does not Granger Cause LNEXCH		27.7761	1.E-07

The granger causality runs one way from GDPM to inflation and not the other way; causality is unidirectional from GDPM to inflation at 10 % level of significant. Moreover, GDPM could cause total credit but not vice versa at 5% level of significance. As it could be seen from the results, there was no causality between GDPM and other determinants.

4.6 Diagnostic Tests

This test are usually used to detect model misspecification and as a guide for model improvement. As a result, different post estimation diagnostic tests were performed for the above three of error correction models to assure the estimation results and inferences are trustable.

These tests include serial correlation, heteroscedasticity and normality tests. In the models, there is no evidence that shows the presence of autocorrelation from the first to four lags.

VAR Residual Serial Correlation LM Tests

H0: no serial correlation at lag order h

Date: 10/21/15   Time: 16:38

Sample: 1974 2013

Included observations: 37

Lags	LM-Stat	Prob
1	52.06628	0.0606
2	47.55481	0.0942
3	34.34124	0.5476
4	31.55915	0.6798
5	53.33361	0.0314
6	31.78337	0.6694
7	41.06008	0.2584
8	40.77345	0.2685
9	80.12410	0.0000
10	40.14601	0.2915
11	28.44616	0.8109
12	56.47532	0.0161

Probs from chi-square with 36 df.

In the estimated result, the LM test shows that there is no serial correlation i.e. we do not reject the null hypothesis of residuals are not serially correlated at 5% level of significance.

The heteroscedasticity test helps to identify whether the variance of the errors in the model are constant or not. The null hypothesis of the test is that the errors are homoscedastic and independent of the repressors and that there is no problem of misspecification. The ARCHI (auto-regressive conditional heteroscedasticity) hetroscedastic test shows that the chi-square p-value is more than 5 percent in all models meaning we cannot reject null hypothesis of no

ARCHI effect that is desirable. Meaning that, we do not reject the null-hypothesis that the residuals are homoscedastic at 5% significance level. Therefore, the residuals of the model are found to be homoscedastic.

By using the Jarque-Bera normality test, the study checked whether the residuals are normally distributed or not. In the first model, the result of the J-B test shows that the residual vector of the model is found to be jointly normal at the 5% level of significance because, we do not reject the null hypothesis that the residuals are normal. However, in the third model J-B test of p- value is less than 5 % indicates we do reject the null hypothesis residual are normally distributed meaning that residuals are not normal.

VAR Residual Normality Tests

Orthogonalization: Residual Covariance (Urzua)

H0: residuals are multivariate normal

Date: 10/21/15   Time: 16:40

Sample: 1974 2013

Included observations: 37

Component	Skewness	Chi-sq	df	Prob.
1	0.032965	0.007866	1	0.9293
2	0.238224	0.410767	1	0.5216
3	-0.024857	0.004472	1	0.9467
4	-0.387622	1.087528	1	0.2970
5	-0.410012	1.216798	1	0.2700
6	1.133331	9.296898	1	0.0023
Joint		12.02433	6	0.0614

Component	Kurtosis	Chi-sq	df	Prob.
1	1.073014	7.184836	1	0.0074
2	1.959143	1.789784	1	0.1810

3	1.289021	5.537409	1	0.0186
4	1.326714	5.271886	1	0.0217
5	1.534767	3.923668	1	0.0476
6	4.739477	8.264594	1	0.0040
Joint		31.97218	6	0.0000

Component	Jarque-Bera	Df	Prob.
1	7.192702	2	0.0274
2	2.200551	2	0.3328
3	5.541881	2	0.0626
4	6.359415	2	0.0416
5	5.140466	2	0.0765
6	17.56149	2	0.0002
Joint	129.8089	182	0.9987

To conclude, the LM tests showed that residuals of the models is not serially correlated and ARCH test of heteroskedasticity also showed no problem of heteroscedasticity. In addition, residuals of the first model are normally distributed as tested by Jarque-Bera (J-B) normality statistical test. Therefore, these diagnostic tests suggest that the validity and robustness of the estimated results of the above model.

Hence, the selected models adopted in the study are good and robust in estimating long run and the short relationships between rate of credit financing and the manufacturing sector performance considered.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Establishment of manufacturing sector in Ethiopia began with formation of administrative centers, development of infrastructure and creation of foreign relations back 1920s. The ownership and developmental direction of manufacturing sector has been varying according to the policy of government in power. The establishment of Banks in of Ethiopia dates back to 1905. It has been providing different services for individuals, businesses, and government and non-government institutions.

The factors for growth of manufacturing sector varies for different countries; however, common factors that influence the growth of the sector include government policy, human resource, development of research, infrastructure development, availability of required fund to fill the gap for investors and other factors.

Banks by financing manufacturing sector generate income and support economic growth of the country by encouraging investment and creation of jobs down the chain. Financing of manufacture sector requires bank's allocation of appropriate fund depending on the nature of the credit request with appropriate loan repayment period and qualified credit performer who have knowhow of the sector and credit knowledge for proper evaluation of credit request. The establishment of manufacturing projects in particular demand huge initial capital and this is bridged by investors own equity and bank loan. Therefore, banks are anticipated to mobilize resource to address the demand of borrowers with required amount of fund for the business. Most developing and developed countries have utilized for their development by mobilizing domestic resources.

Banks resource mobilization is increasing continuously but still banks could not address the demand for credit. In different countries financial market has supported for fund raising to finance manufacturing sector and other sectors. Most of resource mobilization of local and foreign currency is made by public and private owned commercial banks; therefore, it is

necessary these banks allocate part of this resource for financing of viable manufacturing sectors to achieve the targeted growth of manufacturing sector by GTP. The share of industry to GDP is still remains at minimum; when compare with agriculture and service; even though it is showing progress in the period 2012 and 2013. Therefore, it is necessary banks to encourage saving culture of the society to support growth of manufacturing sector. Commercial banks and specialized banks like DBE are supporting financing of manufacturing sector. Especially the CBE has aligned its resource allocation decision to support manufacturing sector by prioritizing it. The banks credit financing for the manufacturing sector is increasing from time to time. The credit financing made within ten years has increased from Birr 4.2 billion in 2004 to Birr 48.7 billion in 2013. The major share of financing in 2013 is made by CBE that is 62.6%. Some of reasons for continuous increase by CBE are prioritizing of the sector for credit financing and aggressive mobilization of resource to support the sector better. For sustainable growth of the sector other banks also has to finance more viable manufacturing projects by mobilizing the resource. The overall loans and advances granted by CBE including coupon bonds within ten years from 2004 to 2013 have increased from birr 21.08 billion to 153.2 billion. In 2013 the bank has financed Birr 30. 5 billion(19.9%) to manufacturing sector, Birr 82.8 billion(54.04%) in the form of coupon bond for different infrastructure financing and the remaining for different prioritized sectors such as agriculture, export and others. CBE's credit financing for the manufacturing sector growth trend from 2004 to 2009 was slow and within the range of 8.81% to 37.11%; however, then after it has augmented significantly between minimum 53.91% (in 2010) to maximum of 138.6% (in 2013). Within these ten years there is an increase from birr 1.1 billion to birr 30.5 billion with average growth of 50.73% per annum. The share of credit financing for private manufacturing sector has declined from 69.43% in 2004 to 11.40% in 2013; however, financing for the public manufacturing sector is increasing progressively. Therefore, the credit financing for private manufacturing sector has to be also supported by providing different incentives for sustainable growth of the sector.

Macroeconomic performance of the industry sector is affected by how macro variables like total credit given by commercial banks, inflation changes and other variables over time. Nations design different monetary and fiscal policies that can help to bring sustained growth of manufacturing sector. Accordingly, this paper has examined the relation between manufacturing sector performance and commercial banks credit to the sector in Ethiopia over the 1974/75-2013/14 period. To establish the link between these variables CVAR model is applied in the study. This model identifies the co-integrated long run and short run relationship among the manufacturing sector, banks credit and other variables. Generally, the main findings of the study on the basis of the above time series econometric analysis shows; in the long run, credit financing, lending interest rate, and gross fixed capital formation have positive relationship with manufacturing sector performance. However, from the estimated CVAR model, the long run result indicates that an increase in exchange rate reduces manufacturing sector performance in the long run.

5.2 Recommendation

Based on the analysis made and the major findings of the study, the following recommendations are forwarded.

- ✓ Bank should increase the share of credit financing for the manufacturing sector. Though commercial banks have relatively huge financial, human and physical resources; they couldn't satisfy the demand of credit request due to insufficient deposit. Therefore, banks need to focus on sustainable resource mobilization and channelling funds to manufacturing sector to bring changes in the sector and for achievement of the desired development plan.

- ✓ The credit financing made for the private manufacturing sector is minimal; this requires identification of stringent bank policies and procedures for financing of the sector and strengthening banks resource mobilization to support the private sector.

- ✓ Currently the bank's non-performing loan of manufacturing sector is minimum; however, when we look at the data of NPL it shows an increasing trend. Therefore, banks should

carefully design follow up mechanism by strengthening manpower for proper repayment of the loan to protect potential dangers that affect the quality of its assets.

✓ The fund allocation of CBE for long term projects is from short-term deposit and repayment period for these projects is long time. Therefore, the bank has to design sustainable deposit mobilization strategy to minimize possible liquidity risk.

✓ The involvement of private banks in supporting manufacturing sector is minimal. Therefore, the government has to encourage private banks to support the manufacturing sector by making guarantee arrangements for repayment of their loans in case of default as learned from other countries experience.

✓ Credit financing involvement of CBE is increasing progressively; this requires the bank to strengthen the credit process unit by recruiting qualified and manufacturing specialists to support the customers properly and address the credit request with knowledgeable performers.

✓ The banks to appraise the credit request of manufacturing sector properly, it is necessary to organize the information center that is supported by the research to simplify the task of credit process and to avoid cumbersome documentation requirement.

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APPENDICES

Interview guide lines for Credit core process

1. Does CBE select prioritized projects that are most vital within the priority sector or finance all priority sectors credit request?

2. Do you have special incentives for borrowers that involve economically influential manufacturing sector?

3. CBE's mobilized funds are short term deposits nature and it is financing long term projects. How do you manage this mismatch of short term deposit and long term investment?

4. Does CBE has specialized man power who have better knowhow for credit financing and supporting of customers involved in manufacturing sector?

5. Does CBE has organized information center to access to appraise credit financing of manufacturing sector appropriately ?

6. Does CBE get support of government financially and technically while financing manufacturing sector?

7. What are basic challenges that the bank has faced while financing manufacturing sector?

8. What are the benefits the bank gets by financing manufacturing sector as priority sector?

9. When we look at the CBE's financing for manufacturing sector the majority of financing is made for public enterprises, what are the basic reasons for minimal involvement of private sectors?

10. Do you think that financing of manufacturing sector as priority sector has achieved its intended target?

11. When we look at the share of credit financed for manufacturing sector in relative to the total loans and advances of the bank including term and coupon bond financing is minimal; what do you think the basic reason?

12. Does CBE satisfy the demand for manufacturing sector credit request?

13. Does the bank has integration with other stakeholders to support manufacturing sector?