DETERMINANTS OF MANUFACTURING SECTOR GROWTH IN ETHIOPIA

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ABSTRACT

Over the last two decades the Ethiopian manufacturing sector has experienced rapid expansion in terms of the number of foreign direct investment, sales, and employment creation. This paper examines the determinants of the manufacturing sector growth using aggregate data compiled by the Central Statistical Agency (CSA) of Ethiopia. To achieve the objective of the study we used the secondary data and analyzed it using descriptive (percentage, mean, standard deviation) statistics of SPSS analysis. To date, there has been little attention given to how manufacturing sector growth relates to other equally important variables such as manufacturing value added, inflation, and manufacturing export per capita in the country. This study explored the explanatory power of the independent variables of FDI, manufacturing value added, inflation, permanent employment, and manufacturing export per capita. We have used secondary data for this study collected from National Bank of Ethiopia, "World Bank" & Ministry of Finance & Economic Development from 2007/08 to 2016/17. This study shows that the independent variables of manufacturing value added, manufacturing export per capita and inflation were not statistically significant in explaining manufacturing sector growth (dependent variable). The independent variables FDI net flow and permanent employment were statistically significant in explaining manufacturing sector growth (dependent variable).

Keywords: Manufacturing sector, FDI, Per capita income, Economic growth etc.

INTRODUCTION

Manufacturing is defined as physical or chemical transformation of material components into new products (ISIC Rev, 4, 2008). The definition also includes the assembly of component parts of manufactured products as a manufacturing activity whether the production is done at factory or home, sold at retail or wholesale, and whether power driven machine is used or not. According to Narasimha and Ramesh, manufacturing is the engine of economic growth and structural transformation. Ethiopia is one of the few African countries that have formulated and implemented a full-fledged industrial development strategy since early 2000s when industrial policy had been a taboo in the international policy forums. The growth of the manufacturing sector within industry is essential to build national technological capacity, industrial capability, technology progress, productivity and capital accumulation. Transfer of surplus resources

from agriculture to manufacturing, economies of scale and positive spillovers effects and create broad based job opportunity and improve the total factor productivity and competitiveness of the overall economy are also the other advantages of manufacturing. Success experiences of developed countries show that manufacturing is the pillar behind a sustained growth.

According to the "Central Statistical Authority" there were 1,930 large- and medium-scale, 43,338 small-scale, and 974,676 cottage/handicraft establishments during 2007/08 (CSA, 2003). The majority of the establishments do not use power-driven machinery, irrespective of the number of persons employed. The sectoral structure of the manufacturing sub-sector, 2007/08 based on numbers of establishments, reveals that food and beverage establishments accounted for 52% of the total manufacturing enterprises, while textiles accounted for 22%, Ethiopia has experienced rapid economic growth since 2005 with real Gross Domestic Products (GDP) growth rate of 10.5 percent per annum compared to 5 percent for Sub-

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Saharan Africa between 2005 to 2014 ,This rapid economic growth particularly for an economy without oil, gas or any significant minerals and much ahead of many notable countries with oil.

During the global economic recession of 1980s, a very low industrial growth was noticed and it was due to the declining oil prices. To address this problem of low growth, Govt. introduced many adjustment reforms, but these reforms were not much successful. Though decades old debate on the relationship between economic growth and the manufacturing sectors was not stopped but on the other side there was no any evidence found to "show how manufacturing sector varied relative to the components of economic development such as FDI(Foreign Direct Investment), labour cost, inflation and manufacturing value added services." Number of existing studies on manufacturing sector and FDI is not high but produced mixed results, existence of knowledge gaps are confirmed by it. Despite of the fact that manufacturing sector has an important role the in economy of any country, and not only manufacturing sector but the sensitivity of the variables of inflation, labour costs, and manufacturing value added also have important role to play in economy of any country; there are less number of comparative study found which can show the relationship between growth of manufacturing sector and inflation, labour cost, Foreign Direct investment and Manufacturing value added in Ethiopia.

Although ,there exists many empirical studies suggesting a significant relationship between manufacturing sector and FDI and GDP(Quattara, 2004) and (Fedrick, 2000), few other studies examines the relationship between manufacturing 'sector growth and explanatory variables, eg labor costs, inflation, FDI, and manufacturing value added in Ethiopia. 'The transformation from a traditional economy into modern economy where technology and modern production activities in manufacturing assume a significant role has remained a defining characteristic of economic growth and development (Naude and Szirami,

2012). No over emphasis of the role of manufacturing sector in development of any economy was also discussed (Szirmai, 2009) argued about the empirical correlation between per capita income and degree of industrialization of any developing countries. (Tybot, 2000) discussed manufacturing sector as a growth engine, a key source of creating skilled jobs and avenue of spillovers to other sectors. (Mallik, 2008) focused on limited foreign inflows for developmental purposes which limits the growth of manufacturing sector, which ultimately results as hindrance of the capability of developing countries to invest in growth projects eg projects for infrastructure, education, energy, communications and roads.

Other research scholars (Chudnovsky & Lopez, 2002; Dunning, 2002) discussed about FDI as investment tool for stimulating growth in the manufacturing sector and other vital sectors within an economy. There has been a little evidence to show the varied relationship between growth of manufacturing sector and other important non-economic and financial variables. This study addressed how other variables relate to manufacturing sector growth in Ethiopia. Exploring the explanatory power of these variables will fill the knowledge vacuum that currently exists in the study of manufacturing sector growth in country.

Statement of the Problem

Manufacturing sector play significant role in the creation of employment opportunities and generation of income for quite a large proportion of population. Mead (1998) observes that the health of economy as a whole has strong relationship with the health and nature of manufacturing sectors. Manufacturing sector is a significant role for economic growth in money developing countries worldwide, including Ethiopia. Since the manufacturing sector is very important to the growth of economy, knowledge of its relationship with the macroeconomic determinant present in its economic environment is crucial.

Literature recognizes that determinants factors influence the performance of manufacturing sector growth. Though there are empirical studies that highlight factors affecting the performance of manufacturing sectors, there is little work that combines both internal and external environmental factors. On the other hand, other studies (Opler and Titman, 1994) suggest that firm specific (internal) factors seem to be the major determinants of the manufacturing sectors.

Manufacturing industries have to play an important role in terms of contributing to the reduction of unemployment and to better the standard of living of the people of Ethiopia. This study seeks to find out the determinants of manufacturing sectors growth in Ethiopia. The significant role of manufacturing industries in the "Ethiopian economy suggests that an understanding of their performance is crucial to the stability and health of the economy".

Research Questions

Accordingly, this study aims to address the following research questions.

What are the major determinants that affect the growth of the manufacturing sectors in Ethiopia?

Which determinant has the greatest influence on manufacturing sector growth in Ethiopia?

Objective of the Study

The objective of the research is to identify factors that determine the growth of manufacturing sector in Ethiopia and it will be designed to achieve the following general and specific objective.

General Objective

The general objective of this study is to determine the determinants of manufacturing sector growth in Ethiopia and to recommend alternative solution.

Specific Objective

1. To demonstrate the determinants of the manufacturing sector growth in the economic transformation process in Ethiopia.

2. To identifying the major challenges and opportunities of the manufacturing sector in Ethiopia and to suggest some intervention measures.

Significance of the Study

The significance of this study shows how manufacturing sector interacts with the determinants of its growth. And also, it is important to know how the determinants affect the growth of the manufacturing sector and to give decision for the sector what policies make to improve the performance of growth in the future.

LITERATURE REVIEW

The manufacturing sector plays the most important and dynamic role in the industrialization process. The available evidence indicates that about 25% of the GDP should come from the industrial sector. 17.4 % of the industrial output should originate from the manufacturing sector and 10% of the population should be employed in the industrial sector. The largest industrial sector, and manufacturing within it, grew much faster after 2005. "Manufacturing can be classified into different categories by using different criteria. According to the Central Statistical Authority (CSA)", the Ethiopian manufacturing sector is classified into three, namely large- and medium-scale, small-scale and cottage/handcraft manufacturing. This categorization is mainly based on the number of people employed and use or non-use of power-driven machinery: Large- and medium-scale manufacturing establishments use power-driven machinery and employ 10 persons and above. Small-scale industries are those establishments that employ less than 10 persons and use power-driven machinery.

Manufacturing sector contributed a significant proportion of the total value added, followed by cottage/handicrafts. This suggests that we should have a closer look at the performance of large- and medium-scale manufacturing establishments. The Ethiopian large and medium-scale manufacturing sub-sector is characterized by the dominance of four-

consumer good producing industrial groups, namely the food and beverages, textiles, leather and leather articles groups. These groups of industries account for the bulk of the gross value of output and for the value added of the sub-sector.

Opportunities and Challenges in the Manufacturing Sector

Although manufacturing industries producing clothes, ceramics, machine tools, and leather products began in 1957, it never developed well until the overthrow of the military rule because the sector was obstructed by lack of infrastructure, scarcity of private and public investment as well as lack of appropriate policies, contributed to the insignificance performance of the manufacture sector pre-1991. "Cognizant of the importance of the manufacturing sector for economic, revenue generation and employment, the government has designed various policies and strategies to develop it." Considering internal, regional, continental and international situations into account, Industrial policies were designed and implemented at different times in a bid to create not only as many job opportunities to the youth as possible but also to facilitate the progress of the entire Industrial development. In this regard, different international organizations and media have persistently commending the boosting manufacturing sector in Ethiopia. International organizations like World Bank and the International Monetary Fund reported the booming manufacture in Ethiopia every year. CNN, BBC, The economist, The Financial Times and Quartz are some among many international organizations that have reported about this progress recently. Quartz emphasized the role of the manufacturing sector to the development of the country. "It reported that the sector has been playing an encouraging role particularly in the past two years of the second Growth and Transformation Plan. " In doing so, the government managed to provide a lot of job opportunities to its citizens in the manufacturing sector. In fact, the fast sustainable economic development achieved so far could be appreciated but still there is wide range of opportunities amidst the challenges in developing the manufacturing sector. The government has been attempting to overcome the challenges facing the sector and exploit the opportunities to expand and diversify the manufacturing industries and their products. The idea of developing comprehensive manufacturing industry was started post 1991. The appropriate government policies and strategies is one of the opportunities that helped Ethiopia to develop the manufacturing sector. The policies and strategies carried out by the government encouraged the establishment of various private manufacturing enterprises having reversed the command economic system installed by the previous government. In fact, the Ethiopian government managed to reverse the command economic system in the country through fostering competition, opening free market economy and promoting the private sector. Besides, the government was devoted in liberalizing the foreign exchange market, rationalize public expenditure, introducing new investment codes and removing export tax refund in its attempt to develop the manufacturing sector. The 1994/95 – 1996/97 economic reform program was encouraging and promoting potential private investors to participate in the manufacturing sector. These efforts have contributed to the enhancement of broad-based economic growth in the country in general and the manufacturing sector in particular.

According to Ministry of Finance and Economic Development (MoFED), the manufacturing value added well progressed in 1993. However, that remarkable growth of the manufacturing sector has started to slow down to average value added annual growth of 3 per cent in 1996-2003. Following the slowdown, the government adopted an export promotion strategy focusing on diversifying and maximizing the manufacturing products. Cognizant of such encouraging move towards improving the industrial sector, the government has consolidated its industrial policy and

strategy in 2002/03, mainly focusing on the manufacturing sector development in an integrated manner with the smallholder farming. One of the approaches the government has been utilizing to develop the manufacturing sector was integrating it with the agricultural sector. This was mainly implemented in the first Growth and Transformation Plan. In due process, the government has developed and created a conducive environment for the private sector. As a result, the participation of potential investors in the manufacturing sector has begun to grow from time to time due to the various incentives set by the government. These incentives encourage productivity particularly in the textile industry that has performed well in the past two years of the second Growth and Transformation Plan. According to the Central Statistics Agency, the manufacturing sector grew by 11.9 percent and contributed to the Gross Domestic product 36 percent. It is also crystal clear that the large and medium manufacturing sectors have got a special attention through the industrial park developments in different parts of the country. This is another opportunity for the sector to develop its productivity and competitiveness. The expansion of Industrial parks coupled with the previously established industrial zones could play a remarkable role in promoting the manufacturing sector making easy to both public and private investments.

The incentives and government support to those private investors who have been investing on the manufacturing sector could also be considered as another opportunity in enhancing the sector. According to Export Trade Duty Incentive Scheme Establishing Proclamation No. 249/2001, the government provides various investment incentive packages including exemption from income tax and payment of custom duty. Irrespective of all these aforementioned opportunities, there lies a number of perplexing challenges obstructing both the diversification and productivity of the manufacturing sector. According to World Economic Forum's

Global Competitiveness Index 2014 and 2015, the measure constraints in developing the manufacturing sector includes inefficient government bureaucracy, foreign currency regulations, access to finance, corruption, and inadequate supply of infrastructure. Rent collection and corrupt practices, inflation, lack of peace and stability could also be other mounting challenges that could jeopardize the manufacturing sector in particular and the entire development schemes of the country in general. These challenges could severely affect the execution of the development targets set in the second Growth and Transformation Plan within the remaining three consecutive years. In conclusion, the manufacturing sector in Ethiopia has been enjoying some opportunities amidst a number of perplexing challenges retarding their development. The government of Ethiopia, since the coming of the Ethiopian People's Revolutionary Democratic Front (EPRDF) in to power in 1991, has been exerting a tremendous effort so as to upgrade the expansion, diversification and productivity of the manufacturing sector. Having recognized its benefit to the overall development of the country and its contribution to job creation, the government has been exerting tremendous efforts to develop it (By Tesfaye Lemma).

The manufacturing sector can spur economic growth and development because of its immense potential for employment. However, it needs still to withstand the available obstructions that could retard the forward move. The manufacturing sector of Ethiopia is in its infant stage due to many interrelated problems. These problems are generally related to finance, technology, market, policy, input supply and other socio-economic factors.

Determinants of Manufacturing Sector Growth in Ethiopia

Most of the literature shows that the determinants of manufacturing sector growth are foreign direct investment, saving rate, exports of product, employment creation and value added manufacturing. Many of the other

determinants that could advance the growth of the countries, the contribution of manufacturing sector growth are one of the main concerns in our study. Therefore, the determinants that will affect the growth of manufacturing sector are our main focus area.

Production and Value Addition of the Manufacturing Sector in Ethiopia

In most literature review one determinants of manufacturing sector growth is gross value of manufacturing industries**.** Another indicator of the performance of the manufacturing sector is the value added per person, defined as the ratio of value added created to the number of persons employed. Value added per person is also known as *labor productivity*. Value added per person declined at an annual average rate of 3.4% during the 1980s. This might have been be due to, among other things, redundancy of labor in the sector together with obsolete and outdated technology causing the marginal product of labor to decline over time. After the reform, however, value added per person increased. Labor productivity was highest in metal, followed by those of food and leather and shoes. Labor productivity registered an annual average growth rate of 33.9%, 30.1%, and 25.6% in the metal, food, and leather and shoe industrial groups, respectively, during the 1991/92 - 1998/99 period.

The manufacturing sector has shown improvements in terms of gross value of output, value added, and value added per person during the post-reform period. This might be attributed to the incentive for profit and the creation of a relatively conducive environment induced by the granting of managerial autonomy to public enterprises; the active involvement of a number of private manufacturing establishments; the improved availability of inputs and spare parts; and the recovery of the agricultural sector, which enhanced the supply of raw materials to the manufacturing sector. These factors are expected to continue to contribute to the improvements in the performance of the manufacturing sector.
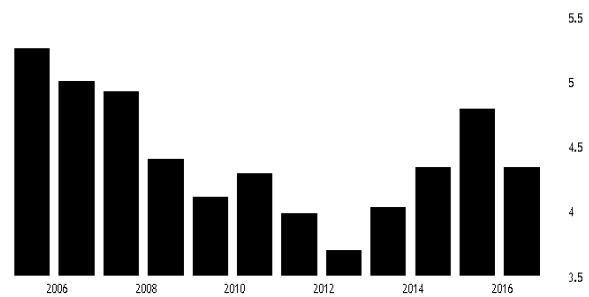

Figure 1: Manufacturing value added

Source: World Bank

Manufacturing, value added (% of GDP) in Ethiopia was reported at 4.3421 % in 2016, according to the World Bank collection of development indicators, compiled from officially recognized sources. Manufacturing refers to industries belonging to ISIC divisions 15-37. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. The origin of value added is determined by the International Standard Industrial Classification (ISIC), revision 3. Note: For VAB countries, gross value added at factor cost is used as the denominator.

Manufacturing and Job Creation in Ethiopia

The actual level of manufacturing activity and its employment creation was very low compared with the case in other developing countries. Manufacturing sub-sector, in particular, serves as important sources of employment, especially for the rapidly growing urban population in Ethiopia Employment creation in manufacturing industries is another determinant in the growth of the sector. In Ethiopia the proportion of labor productivity growth in service sector is relatively high than manufacturing sector.

METHODOLOGY OF THE STUDY

Data Collection

We use secondary data for this study collected from National bank of Ethiopia, World Bank & ministry of finance economy development from 2007/08 to 2016/17. Manufacturing sector, FDI, permanent employment, manufacturing export per capita, inflation and manufacturing value added were retrieved from the World Bank Development Indicators. We operationalize the variables as follows: Manufacturing sector growth is defined as a percentage of GDP from 2007/08 to 2016/17. A FDI net inflow is defined as a percentage of GDP from 2007/08 to 2016/17. Inflation is defined as the annual percent change in consumer prices from 2007/08 to 2016/17.

Methods of Data Analysis

The data collected from the survey will be tallied, systematically organized, tabulated and summarized in items based on tables and charts. The study will also employ SPSS and Microsoft-excel to analyze the collected data. In this study, since independent variables are five we use a multiple regression and descriptive statistics to analyze the data gathered from different data sources. Descriptive statistics such as percentage mean and tables were the tools used to summarize and analyze the data. In addition, analysis of variance (ANOVA) was used to test the hypotheses stated because analysis of variance (ANOVA) was used to determine whether there are any significance differences between the means of two or more independent groups.

Variables of the study

Dependent variable: Manufacturing sector growth

Independent variables: FDI net flow, permanent employment, inflation, manufacturing export per capita and manufacturing value added.

DATA ANALYSIS AND DISCUSSION

This section discusses the results of the study based on the research tools presented in preceding sections of the report. The purpose of this study is to assess the determinants of manufacturing sector growth in Ethiopia. The study has employed SPSS and Microsoft-excel in analyzing the collected data. Percentage, mean and standard deviation have been used to analyses the row data and we analyze the data by using multiple regression to know the significant effect of the manufacturing sector determinate.

Table 1 : Growth Rate

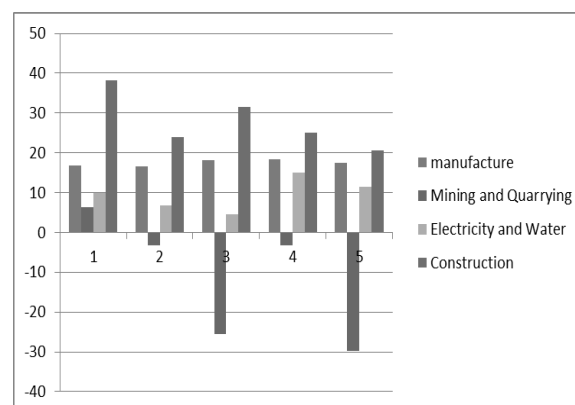| Manufacturing	Mining and Quarrying	Electricity and Water	Construction
16.9	6.3	10	38.2
16.6	-3.2	6.8	23.9
18.2	-25.6	4.5	31.6
18.4	-3.3	15	25
17.4	-29.8	11.4	20.7

Figure 2 : Growth Rate

Source: National Planning Commission

Table 2: Growth Rate

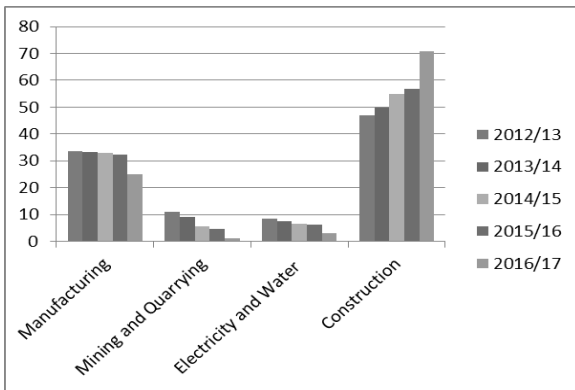| Fiscal year	Manu-facturing	Mining and Quarrying	Electricity and Water	Cons-truction
2012-13	33.6	11	8.3	47.1
2013-14	33.4	9.1	7.6	49.9
2014-15	33	5.7	6.6	54.8
2015-16	32.4	4.5	6.3	56.8
2016-17	25	1.1	3	70.9

Figure 3: Share in Industry

Source: National Planning Commission

From the above figure/table the manufacturing sector increased by 17.4 percent and constituted about 25 percent of industrial sector. Construction industry, on the other hand, contributed more than half (70.9 percent) to industrial sector and expanded by 20.7 percent signifying the leading role the construction sector plays in terms of roads, railways, dams and residential houses expansion. Electricity & water and mining & quarrying had 3 and 1.1 percent contribution to industrial production, respectively.

From the model summary table below of SPSS output, the effect of the relationship was identified based on the R statistic, which in a variable regression is the same as the correlation coefficient. In this case the R is 0.987 indicating strong relationship.

The proportion of variance in the dependent variable which is accounted by the independent variables, is explained by the R Square Statistics.

In this case the model accounts for 97.4% of the variance in the dependent variable, manufacturing sector growth. The adjusted R square is higher, indicating 94.1% of the variance is accounted for by the model. With respect to the fitness of the model, the coefficient of determination (R^2) for the manufacturing sector growth was 97.4%.

The R square value was substituted , suggested by Cohen (1977), and the value of Commonality established by Fornell and Larcker(1981), for validity testing we can

get the minimum adjusted value of Good Fit(GoF), which is 0.941(Wetzels, Odekerken-Schröder, & Van Oppen, 2009).

0.974 is the GoF value in this study (Wetzels, Odekerken-Schröder, & Van Oppen, 2009), showing model as a good fit compared to the specified minimum. The structural relations and hypothesis testing were validated.

The theory is examined underlying the field, the relationships between manufacturing sector growth and FDI, inflation, manufacturing value added, manufacturing export per capita and, permanent employment by using multiple regression models.

The regression equation is comprised of the various variables:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon ---- (1)$$

Where,

α = intercept,

Y = dependent variable, manufacturing growth sector (which was predicted or explained)

β_0, β_1, β_2, β_3, β_4 and β_5 : coefficient of X, (slope of regression line, measures how much of Y varies relative to changes in the independent variables).

X_1, : independent variables of permanent employment

X_2, : manufacturing value added

X_3, : FDI net flow

X_4 : manufacturing export per capita and

X_5 : inflation

These values, predict or explain the value of Y, the manufacturing sector growth. ε - Error term used for predicting the value of Y, with a given value of X. We developed the following hypotheses for this study:

Hypothesis 1 H01: The "permanent employment" is not accountable for

significant variation in manufacturing sector growth.

Ha1: The "permanent employment" is accountable for a significant variation in manufacturing sector growth.

Hypothesis 2 H02: The "manufacturing value added "is not accountable for a significant variation in manufacturing sector growth.

Ha2: The manufacturing value added is accountable for a significant variation in the manufacturing sector.

Hypothesis 3 H_03: The "inflow of foreign direct investment" is not accountable for a significant variation in manufacturing sector growth.

Ha3: The "inflow of foreign direct investments" is accountable for a significant variation in manufacturing sector growth.

Hypothesis 4 H_04: The "manufacturing export per capita" is not accountable for significant variation in manufacturing sector growth.

Ha4: The "manufacturing export per capita" is accountable for a significant variation in the manufacturing sector.

Hypothesis 5 H_05: The "rate of inflation" is not accountable for a significant variation in manufacturing sector growth.

Ha5: The "rate of inflation "is accountable for a significant variation in manufacturing sector growth.

RESULT AND DISCUSSION

Table 8 shows the descriptive statistics for the dependent and independent variables. List for the results of regression analysis are given in Table 5 of Appendix.

With the dependent variable had a mean average of 62 and SD = 34.6, and the independent variables of permanent employment (M=3727.1 SD 2819.1) and FDI (M= 2.1, SD= 1.71) and manufacturing value added (M=4.14, SD=0.62) inflation rate (M= 16.8, SD= 13.02) and

manufacturing export per capita (M=2.9, SD=0.89).

Given the foregoing coefficients the following are the recalls of the research questions for the study, together with the null and alternative hypotheses and the results of the research question. Next is the general form of the regression equation that explains how variations in the independent variables explain manufacturing sector growth in Ethiopia.

Manufacturing sector growth = -132.874+ 0.005*(employment) - 21.383*(value added) + 24.609*(FDI) – 14.218*(export per capita) + 0.012*(inflation). The p-value shows whether the variation in the dependent variable (manufacturing sector growth) explained by the independent variable is significant or not. If the p-value is greater than 0.05, the null hypothesis would not be rejected. The p-value of the data is greater than 0.05, for the coefficients or the independent variables of manufacturing value added manufacturing export per capita and inflation the null hypotheses were not rejected. This implied that the variations in the independent variables (coefficients) were not statistically significant in explaining manufacturing sector growth (dependent variable). The p-value of the data is less than 0.05, for the coefficients or the independent variables FDI net flow and permanent employment the null hypotheses were rejected. This implied that the variations in the independent variables (coefficients) were statistically significant in explaining manufacturing sector growth (dependent variable).

CONCLUSION AND SUGGESTION

Two fundamental questions related to the relationship between the manufacturing growth, FDI, per capita manufacturing export, inflation, permanent employment and manufacturing value added in Ethopia from the year 2007-2008 and from the year 2016-2017 was sought in the study.

The first research question focused the relationship between manufacturing sector

growth and FDI, manufacturing export per capita, inflation, permanent employment and manufacturing value added in Ethiopia from the year 2007-2008 and from the year 2016- 2017. Statistical analysis was done through Multiple regression and no significant relationship between manufacturing sector growth and the independent variables manufacturing export per capita, inflation, and manufacturing value added was found. It was found that there is a significant relationship between "Permanent employment" and FDI and Manufacturing sector growth in Ethopia from year 2007-2008 and from year 2016-201.It implies that the main determinants of manufacturing sector growth are "F.D.I." and "permanent employment". This study added the value to the previous researches which focus on the relationship between FDI, Permanent employment and growth of manufacturing sector.

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Ethiopia's Manufacturing Industry Opportunities, Challenges and Way Forward: A Sectoral Overview by Tekeba Eshetie

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APPENDIX

Table 3 : Share of Manufacturing

	GDP per capita	Share of manufacturing value added in GDP	Share of Industry value added in GDP	Manufactured exports per capita
2000	197	0.04	0.09	0.7
2001	207	0.04	0.09	0.9
2002	204	0.04	0.09	1.0
2003	194	0.04	0.10	0.8
2004	214	0.04	0.10	0.3
2005	233	0.04	0.10	0.5
2006	251	0.04	0.10	0.7
2007	272	0.04	0.10	2.2
2008	294	0.04	0.10	1.7
2009	311	0.04	0.10	1.6
2010	341	0.04	0.09	2.4
2011	370	0.04	0.10	3.3
2012	391	0.04	0.11	2.7
2013	421	0.04	0.12	3.7
2014	453	0.04	0.13	3.9
2015	487	0.05	0.14	3.7
2016	511	0.05	0.16	

Source: World Development Indicators.

Table 4: Determinants of Manufacturing Sector

Year	number of manufacturing sector Gdp	permanent employment	manufacturing value added	FDI, net flows % of GDP	Manufactured exports per capita	Inflation
2007/08	31	584	4.6	1.13	2.2	17.2
2008/09	38.8	309	4.1	0.4	1.7	44.4
2009/10	43.00	1193	3.9	0.68	1.6	8.5
2010/11	49.80	1357	4	0.96	2.4	8.1
2011/12	59.6	2642	3.7	1.96	3.3	33.2
2012/13	73.9	7586	3.4	0.64	2.7	24.1
2013/14	89.5	7007	3.7	2.28	3.7	8.1
2014/15	103.7	6016	4	3.34	3.9	7.4
2015/16	125	4588	4.4	4.07	3.7	10.1
2016/17	403.4	5989	5.6	5.51	3.8	7.3

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.987[a]	.974	.941	8.43483	.974	29.526	5	4	.003
a. Predictors: (Constant), inflation, manufacturing value added, permanent employ, manufacturing export per capita, FDI net flow									

Table 6: Coefficients (Dependent Variable: Manufacturing Sector GDP)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	132.874	56.672		2.345	.079	-24.473	290.222
	permanent employ	.005	.002	.402	2.965	.041	.000	.009
	manufacturig valuadded	-21.383	11.025	-.402	-1.940	.124	-51.994	9.227
	FDI net flow	24.609	6.914	1.281	3.560	.024	5.414	43.804
	manufacturing export per capita	-14.218	10.404	-.386	-1.367	.244	-43.104	14.668
	Inflation	.012	.237	.005	.052	.961	-.646	.670

Table 7: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10503.414	5	2100.683	29.526	.003[b]
	Residual	284.586	4	71.146		
	Total	10788.000	9			
a. Dependent Variable: manufacturing sector						
b. Predictors: (Constant), inflation, manufacturing value added, permanent employ, manufacturing export per capita, FDI net flow						

Table 8: Descriptive Statistics

	Mean	Std. Deviation	N
manufacturing sector	62.0000	34.62177	10
permanent employ	3727.1000	2819.06645	10
manufacturing value added	4.1400	.61860	10
FDI net flow	2.0970	1.71195	10
manufacturing export per capita	2.9000	.89194	10
Inflation	16.8400	13.02956	10