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Paramountcy of Economic Environment to the Performance of Manufacturing Sector: A Case of Ethiopia

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Abstract
The objective of this study is to analyze the association of the economic factors, notably government capital expenditures, nominal foreign exchange rate change, foreign currency reserve, FDI stocks, and market openness with the growth on manufacturing sector. To analyze the study, correlation test were conducted by taking time series economic data during 2004 to 2014. The detail analysis confirmed that GDP per capita, flow of foreign direct investment and public capital investment have robust positive relation with the manufacturing sector outcome. On the other hand, foreign currency reserve, and nominal foreign exchange rate have shown weak positive link to the outcome of manufacturing sector. Surprisingly, market openness was linked negatively to the outcome of manufacturing sector.We suggest that the policy makers need to work to enhance the GDP per capita, assign more public finance to capital budget that help to improve the infrastructural facilities and create friendly investment climate to pull both domestic and foreign investment so as to promote the outcome of manufacturing sector and industrialization.
Keywords: capital expenditures, nominal foreign exchange rate, foreign exchange reserve, market openness and manufacturing sector

Introduction

Industrialization has significant role in the economic development. The essential role of industrialization in an economy is as to (1) Boost income: -industrial development can provide a good ground for a rapid rise of income; (2) satisfy the demands for the industrial products. After certain stages, the demand for people are typically of industrial goods;(3) Raise productivity per-worker (physical output per employee): with a higher productivity in industry compared to agriculture, a rise in share of industry in total output raises, the average productivity of the economy as a whole.(4) Develop economies that become nationally structured , flexible and capable of self-generated and self-sustained growth as a source of dynamism, and it brings about flexibility in economic structure, (5) Remove imbalance in trade (reduce trade shocks): as a result of the income elasticity of export is very low due to only agriculture products while that of import is very high;(6)Absorb surplus labor: industrial can generate employment opportunities on accelerated rate; railway, dams etc. (7) Security considerations. The national objective of self-reliance in defense materials can be achieved only through industrial development This approach does not only raises the capital stock, but also makes it strong enough to produce many things that is required by a country and also reduces dependence on foreign sources, and (8) Use of modern technology in agriculture: adoption of modern techniques in agriculture leads to increased production of food (Jain, 1997).

Manufacturing is the heart and engine for the industrialization and economic development. Manufacturing is a wealth-creating sector of an economy, and closely connected with engineering and industrial design in which it provide important material support for national infrastructure and development. It involves the mechanical or chemical transformation of materials or substances into new products. It makes products from raw materials by the use of manual labour and/or machines and is usually carried out systematically with a division of labor. In a more limited sense, manufacturing is the fabrication or assembly of components into finished products on a fairly large scale. Manufacturing Establishments that transform materials or substances into new products by hand or in the worker's home and those engaged in selling to the general public products made on the same premises from which they are sold, such as bakeries, and pastries may also be included in the manufacturing sector. They either process materials themselves or contract with other establishments to process their materials for them (Central Statistical Agency of Ethiopia, 2015).

Similarly, (Adebayo, 2010, Mbelede, 2012) described manufacturing sector as activities which are involved in the manufacturing and processing of items and involve in either the creation of new commodities or in value addition. Manufacturing sector involved in the process of adding value to raw materials by turning them into products. The final products can either serve as finished goods for sale to consumers for final use or as intermediate goods used in the production process. Activities in the manufacturing sector cover a broad spectrum which includes; agro processing, metal/plastic, ICT/electrical, textile, clothing, footwear, cement and building.

Notably, the government of Ethiopia is unreservedly carrying out activities to develop the impoverished economy of the country for several years due to civil war and consequent droughts. In fact, development and economic growth have several phases and aspects. But most of the countries undertake economic reforms to change economic status in their countries, commit their valuable resources to make changes. Similarly, Ethiopia has also took economic reforms, which reinforces free market and open foreign trade. The reform also focused on developing manufacturing sector which is one of the bedrock for an economy. The government of Ethiopia also develops couple of five years plans which mainly emphases transforming the agrarian economy to industrialized economy. Specially, the country has given high attention to manufacturing sector development in its recent two five years plans known as GTP I and II. GOE used to provide distinctive incentives to this sector particularly to light and agribusiness manufacturing industries. These manufacturing business development was justified as the country has competitive advantage with respect to cheap labor, ample input resource availability, and good market location to the rest of the world market, low technology and investment requirement. Hinh & Dinh, (2011) also noted that Ethiopia has many natural resources that can provide valuable inputs for light manufacturing industries serving both domestic and export markets. Among its abundant resources are cattle, which can be processed into leather and its products; forests, which can be managed for the furniture industry; cotton, which can support the garments industry; and agricultural land and lakes, which can provide inputs for agro processing industries. Ethiopia has abundant low-cost labor, which gives it a comparative advantage in less-skilled, labor-intensive sectors such as light manufacturing. Ethiopia also shares several negative factors with other low-wage African countries, such as shortages of industrial land, poor trade logistics (particularly in landlocked countries), and limited access to finance.

Even though manufacturing industry in Ethiopia started in 1920s with a simple processing technology that produces agriculture-based products, the sector is still infant, dominantly semi-processing, and performs at a low capacity. For example, average capacity utilization of the textile, leather, agro-processing and pharmaceutical industries in 2009/10 was at 40pc, 10pc, 60pc and 30pc, respectively. The manufacturing industry has neither transformed itself to high tech processing nor is competitive in the international market. Ethiopia ranked 118 out of 144 countries, according to the 2014/15 global competitiveness index. The sector has persistently faced high production cost, severely constrained supply and poor quality raw materials and technology, both mainly imported, witnessing little improvements in the main areas of challenges over the years. The contribution of the sector for gross domestic product (GDP) is stagnated at less than five per cent for the last 20 years. Exiting technology transfer mechanisms are poorly institutionalized (*Reimagining Ethiopian Manufacturing Timely, 2015).*

According to Oladiran (2015), public expenditure contributes and resolves to the achievement of economic goals in multiple ways. There are both direct and indirect impacts. The direct impacts include the establishment of state-owned financial and banking institutions to provide cheap credit. It can also support the performance of the manufacturing sector by means of grants and subsidies to the sector. The indirect impact come through the provision of infrastructural facilities like construction of roads, rail way, power projects etc., such projects create enabling environment for operators in the manufacturing sector thereby enhancing their productivity (Olagbaju I. Oladiran , 2015). This study takes into account several exogenous factors to closely look at whether or not they do impact on the performance of manufacturing sector in Ethiopia.

Review of related literature

Chih-Hung Liu, et al. (2008) studied the causal relationship between GDP and public expenditures for US federal government covering the time series data 1974-2002, they found that total expenditure does cause the growth of GDP. Similarly, Mwafaq (2011) has also studied the impact of public expenditures on economic growth employing time series data of Jordan for the period 1990-2006 and confirmed that government expenditure at the aggregate level has positive impact on the growth of GDP.

Similarly, Mansouri (2008) has examined the relationship between fiscal policy and economic growth in three North African countries of Egypt, Morocco and Tunisia. He confirmed positive correlation between the two variables, which is 1 percent rise in public expenditure increases the real GDP by 1.26 percent in Morocco, 1.15 percent in Tunisia and 0.56 percent in Egypt. Oladiran Olagbaju (2015) investigated the relationship between government expenditure in general and manufacturing sector output in Nigeria. The study employed time series data from 1970 to 2013. The study revealed that capital expenditure has positive relationship with manufacturing sector output in Nigeria, recurrent expenditure had negative effect on manufacturing sector output. The results showed that one per cent increase in government capital expenditure resulted in an increase of 11.2 per cent in manufacturing sector output while recurrent expenditure decreases it by 26.9 per cent. Ishola S. A. (2012) has also confirmed a significant relationship between the government expenditure and manufacturing sector outcome in Nigeria. Thus, he recommended that government should improve and encourage manufacturing outputs and improve its expenditure in the manufacturing sector geared towards economic growth.

Studies on Ethiopia

According to the annual national bulletin of national bank of Ethiopia (2012) the growth of the industrial sector is robust. It gained 17.1 percent growth mainly due to the increase in electricity and water supply. Manufacturing output grew by 11.8 percent while mining and quarrying expanded by 12.7 percent during the same period. Even though these achievements are significant move to Ethiopia's manufacturing sector still there is far to go to be competitive in the aspect of the world economies. The global competitiveness index 2014/15, stated that Ethiopia has moved up a bit, from 121th position to 118th in the year 2014/15, facing challenges across all pillars despite its recent record growth rates. The functioning of its institutions (96th) receives a weaker assessment across almost all indicators, including property rights, ethics and corruption, and government efficiency. Furthermore, the country's goods market (124th) remains inefficient. Ethiopia also requires significant improvements in the areas of infrastructure (125th), higher education and training (131st), and technological readiness (133rd). On a more positive note, the report points to a slight improvement in the country's labor market, although concerns about the quality of labor-employer relations (97th), hiring and firing practices (78th), and the alignment between pay and productivity (99th) remain. Primary education, with a net enrollment rate of 86 percent, is comparatively good (although the quality of primary education requires improvement), and women account for a high percentage of the country's labor force (Global competitiveness index, 2015).

On the other hand, many international financial institutions have recommended the government to depreciate the currency against major hard currencies to keep the inflation and investment balanced. Muluken (2015) also stated that the appreciated real, effective foreign exchange rate does not help competitiveness, especially in manufacturing. In the past few years, the government has been devaluating the Ethiopian birr, stagnating the depreciation in the past couple of years. On the contrary, the fourth country's economic update of the World Bank stated that Ethiopia had appreciated the real exchange rate by 22.5 percent at the end April 2015, reaching a cumulative appreciation of 71 percent since the nominal devaluation in October 2010. The country is now appreciating its note against all currencies that are depreciating against the US dollar. This is because the birr is closely managed against the US dollar. The report added that the annual pace of nominal depreciation, however, has been stable at 5 percent in recent years. It added that there is concern that the appreciated currency may not help to improve export competitiveness much more, since exports are falling again and the government is trying to encourage a thriving manufacturing sector to develop. "Maintaining a competitive exchange rate is an important component of maintaining external competitiveness, but its macroeconomic effects, for instance, on import prices and inflation need to be managed closely," the World Bank document recommended (World Bank Ethiopian economic up-to-date 2015).

The deteriorating currency is one account that indicates a worsening trade deficit which was driven by weak export performance and large imports of capital goods for public investment programs. The export of goods showed positive growth in 2013/14, but the rate remained far below the historical growth. In the past three years, the country's export market, mainly the agriculture and mining sectors, have been stagnant. As a result, the price of major hard currency sources like coffee and gold was slashed. This price fall is mentioned as a factor for the minimal export. The manufacturing sector has similarly registered a very slow growth. As US department of states 2015 survey on Ethiopia investment climate, forex reserves were heavily depleted during 2012 and still remain at low levels. By the end of FY14, the gross reserves were estimated at USD 2.8 billion, covering approximately 1.9 months of prospective imports. Hence, businesses usually expect delays of foreign exchange supply of 6 weeks to 3 months and slow-downs in manufacturing due to foreign exchange shortages are common.

The manufacturing sector has grown at an average of 10.9 percent in last decade, with a similar rate of expansion as real GDP; nevertheless, it felled short of the targeted 22 percent in the GTP. In 2013/14, the three sector shares to GDP were 40.2 percent (agriculture), 45.5 percent (services), and 14.3 percent (industry). The agriculture sector still employs more than three-quarters of all workers and the pace of structural transformation has been slow.

The share of employment in agriculture is relatively unchanged between 1999 and 2005, but it then declined from 80.2 percent in 2005 to 77.3 percent in 2013. In the meantime, the largest relative gains were recorded by other services (1.3 percentage points) and construction (1.2 percentage points). Commerce registered a decline of 2.3 percentage points. The share of employment in the manufacturing sector has changed only slightly and is virtually unchanged with 4.4 and 4.7 percent of total employment between 1999 and 2013.

Agriculture, commerce, and manufacturing registered the lowest annual growth rates from 1999 to 2013, although agriculture absorbed 73 percent of the total increase in employment.

Recently, the industry sector became the highest growing sector, driven by the construction boom and expansion in the mining sub-sectors. The industrial sector's growth rate was 18.5 percent in 2013/14. But manufacturing, which forms part of industry and is dominated by the food, beverages, leather, textiles, and apparel industries, contributed a meager 4.4 percent to GDP in 2014 and on average it grew only by 11 percent during the same period.

The manufacturing export sector is relatively small in terms of production and employment,

constituting 10 percent of total export merchandise. Given that the manufacturing sector has grown at the same pace as the economy, its contribution to GDP has remained static. The economic update stated that the country's economy continues its strong expansion in the 2014 fiscal year, with real GDP growing by 10.3 percent. The growth was driven mainly by the services sector from the supply side, and public investment from the demand side. (Muluken, 2015).

Hence, the objective this study is to analyze the degree of impact and association of the above mentioned economic factors i.e government capital expenditures, real foreign exchange rate, foreign currency availability, FDI stocks, market openness with the growth on the manufacturing sector.

Hypothesis of the study

In accordance with the above review of previous works the researcher sets the following hypothesis.

H1: Growth in real GDP significantly affect the growth of manufacturing in Ethiopia
H2: Foreign direct investment significantly contributes to the growth of manufacturing in Ethiopia.
H3: Exchange rate devaluation significantly affects the performance of manufacturing in Ethiopia.
H4: capital expenditure significantly affects the outcome of manufacturing in Ethiopia
H5: the availability of foreign currency reserve significantly contributes to the outcome of manufacturing in Ethiopia.
H6: Market openness significantly affects the outcome of manufacturing in Ethiopia

Source of data and analysis tools

The main source of data for this study is secondary - time series data on public expenditure, GDP, gross value added to production by manufacturing industry, investment on manufacturing industry during 2004 to 2014 data are used. Data were extracted from nation bank of Ethiopia and central statistics agency of Ethiopia. Most of the data used for analysis are quantitative. This study is a sort of confirmatory factor analysis. It is sought to analyze the intensity of relation among the selected basic economic factors with respect to manufacturing sector output. To conduct the study descriptive statistics and correlation of variables are employed.

Variables definitions

Dependent variable:

Value added to production by manufacturing sector is the net output of a sector after adding up all outputs and subtracting intermediate inputs in a particular period.

Independent variables:

Capital expenditure: is an investment made by government on capital assets like improving infrastructure, roads, communication, transport, and others.

Gross domestic production per capita income is the output of an economy per person.

Foreign direct investment is refers to an investment made to acquire lasting or long-term interest in enterprises operating outside of the economy of the investor.

Trade openness is the ratio of sum of total imports and Exports to overall GDP.

Nominal exchange rate is the number of units of the domestic currency that can purchase a unit of a given foreign currency.

Foreign currency reserve is the accumulation of foreign currency and gold kept to settle for the overdue a national foreign debts and assist to carry out international trade.

Analysis of results and Discussions

The result of statistical analysis of the study is presented in this section. We have covered the data of economic environment for the years 2004 to 2014. Correlation analysis was conducted to investigate the relation of the variables. Table1 below indicates the partial correlation of the variables on the outcome of manufacturing sector.

Table 1. Correlation of variables.

Variable	*Partial Correlation*
GDPcapi[t]	***0.9361***
FDI[t]	***0.8992***
ExRATE[t]	***0.1866***
CAPEXP[t]	***0.9686***
Forex resrv[t]	***0.1413***
MKTOP[t]	***-0.7386***
Constant	*0.7947*
Critical Values (alpha = 5%)	
1-tail CV at 5%	*2.14*
2-tail CV at 5%	*2.78*

We can draw an insight from the above partial correlation result that there is strong positive correlation among manufacturing sector outcome and GDP per capita, FDI and public capital expenditure, whereas the analysis indicated low positive correlation with exchange rate and capital reserve. Conversely, there is a negative correlation between market openness and manufacturing outcome.

H1: Growth in real GDP per capita is significantly associated with the growth of manufacturing in Ethiopia

From the result of correlation we can draw insight that annual GDP per capita and manufacturing outcome have robust relations. GDP of Ethiopia is increasing in recent years. Hence, GDP per capita income has showed also an advance. The raise in GDP per capita enhance citizen lifestyle. It may assist to afford for cost of quality education and training, and cost of healthcare. Consequently, this improvement attributes to the growth of manufacturing output. The GDP per capita income indicate the raise in purchasing power for manufactured goods. Thus, the demand for manufactured goods influenced the outcome of manufacturing sector. Accordingly, it supports the general construct that an increase in an economy's GDP pushes up the demand and production of industrialized products as the result of change in the life style of consumers and raise in the disposable income.

H2: Foreign direct investment significantly contributes to the growth of manufacturing in Ethiopia.

Ethiopian government has made continues progress to attract more FDI especially in manufacturing sector to transform its agrarian economy to the industry. It sets up different investment and tax incentives so as to drive more foreign investment on the sector. A recent study by the United Nations Conference on Trade & Development (UNCTAD) discovered that Ethiopia is actually the third largest recipient of Foreign Direct Investment (FDI) in Africa, with inflows of 953 million dollars in 2014 and 279 million dollars in 2013, highlighting a rapidly rising trend. Foreign companies which possess international integration, and technology access boost manufacturing outcome more efficiently. Accordingly, the current study result also showed a strong positive link between foreign direct investment and manufacturing sector output. The linkage between foreign investment inflow and performance of manufacturing sector confirms the flow of FDI lifts manufacturing outcome.

H3: Devaluation of Exchange rate is significantly affected the performance of manufacturing Ethiopia.

The fourth country's economic update of the World Bank noted that Ethiopia government has been making a nominal 5% continuous annual depreciation to its local currency with main foreign currency US dollar, euro, Japanese yen with an ambition to promote export, to manufacture import substitute goods and transform the economy into industrialization and to absorb enormous labor from agriculture sector. The World Bank report also stated that Ethiopia had appreciated the real exchange rate by 22.5 percent at the end April 2015, reaching a cumulative appreciation of 71 percent since the nominal devaluation in October 2010. We have accounted the annual nominal exchange rates data for this study. However, the correlation between the manufacturing outcome and nominal exchange was very weak, below 20%, after all the efforts made with this regards.

H4: Capital expenditure is significantly linked to the outcome of manufacturing in Ethiopia The GOE has made investment in infrastructure that facilitate industry development, even though it has to improve more on the infrastructure building because the country was ranked 129th to getting electricity and 166th for trading across border out of 189 economies surveyed for ease of doing business by world bank, 2016. Infrastructure facilities are measured in terms of capital expenditure on electricity, telecommunications and transportation. According to this study, the association between investment on public capital and manufacturing outcome was very strong. So that our study result is supportive of the extant studies' findings by Oladiran Olagbaju (2015) Ishola S. A. (2012) that capital expenditure has positive relationship with manufacturing sector output.

H5: **The availability of foreign currency has significant association to the outcome of manufacturing in**

Ethiopia. The existing severe hard currency shortage is jeopardizing industries that import raw materials for their production. The shortage of foreign currency reserve observed and forced many businesses to slow down their activities in the different sectors where production depends on imported materials (Muluken, 2013). According to U.S. State Department, 2015 investment climate study, businesses in Ethiopia usually expect delays of foreign exchange supply up to 6 weeks to 3 months, and it slows down business activities including manufacturing. The three basic factors posited by bankers and economists for the shortage of hard currency are global economic slowdown, Ethiopia's mega projects and the country's widening trade balance. But, our study result has not indicated a robust nexus between availability of foreign currency reserve and manufacturing outcome.

H6: Market openness and manufacturing outcome in Ethiopia are significantly related. Market openness is the ratio of import and export to the total GDP. Ethiopia's GDP has shown very fast growth of about 10% in the past decade. The country has faced a consistent trade shock for several years. In recent years, the trade balance has become more sever due to unbalanced export income and imports. Remarkably, the country encountered with accelerating aggressive imports and alarming dwindle in the exports of its meagre agrarian commodities. This study has portrayed a negative relationship between market openness and manufacturing sector outcome.

Conclusion and Future implication

The study has taken into account the economic variables which have direct and indirect effect on the manufacturing sector development. From the detail analysis and result of log-regression model we can draw inference that GDP per capita and public capital investment have robust positive relation with the manufacturing sector outcome. Similarly, flow of foreign direct investment, foreign currency reserve, foreign exchange rate have shown moderate positive link to the outcome of manufacturing sector. But, market openness was linked negatively to the outcome of manufacturing sector.

This study has taken into consideration only some economic quantitative variables, but still there are some other business and economic factors that could affect the manufacturing outcome in developing economy, Ethiopia. Thus, the researcher would like to recommend future research to concentrate on other aspects which have not been considered to understand the issues in better manner. Further, the study was conducted only in the economic environment of Ethiopia but to arrive at final conclusion it needs confirmatory study on another similar economy.

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