

THE EFFECTS OF TRADE ON EMPLOYMENT IN MANUFACTURING INDUSTRIES IN TANZANIA

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ABSTRACT

The main objective of this study was to examine the effects of trade on manufacturing employment in Tanzania. Secondary data used were obtained from different government agencies for a period of 2000 – 2012. Both qualitative and quantitative approaches were used to analyse the data. The OLS multiple regression model was used to monitor variable behaviors. The results suggested that estimated coefficient of variables Trade (TRADt), Manufacturing (MANt), Imports (MPIt) and Capital (KTLt) was positive and significant at the 1% and 5% respectively. While the coefficients of Employment and Exports (XMIt) were negative and not significant. The study concluded that a negative association existed between trade and exports intensity and employment level in the manufacturing industries. That is higher imports intensity leads to a decrease in employment level in manufacturing. It would be perhaps good to reduce import by increasing exports to accelerate the level of employment in the manufacturing sector. Exports show a significant negative effect on Tanzania's manufacturing employment during the study period.

Keywords: Trade effects, employment opportunities, manufacturing companies, imports and exports, Tanzania.

1.0 INTRODUCTION

Tanzania is one of many African countries that implemented significant trade reforms in the mid-1980s after experiencing a steady decline in economic growth in the late 1970s that led to the financial crisis in the early 1980s. These reforms, generally known as the Structural Adjustment Programmes (SAPs), were introduced to developing countries by the International Monetary Fund and the World Bank. Among the reforms implemented is to free up trade, a concept that is quite controversial among economists Mkenda (2005). On the one hand, free trade increases poverty, unemployment, job insecurity as well as widen social inequalities.

On the other hand, proponents of free trade argue that it boosts the performance of the manufacturing sector with evidence from countries such as India, Mexico, Russia, and Tunisia providing this proof Furusawa and Lai (1999). The Tanzanian Government made significant efforts to open up the economy to global markets beginning in the 1980s. Whereas the government pursued a "policy of confinement" in the early 1980s, this policy abandoned for a more market-oriented policy following persistent supply shortages and a poor performing balance of payments. The government, thus, undertook to gradually reduce

restrictions on imports, free up foreign exchange transactions, and simplify the tariffs structure. These policy reforms continued well into the early 1990s when the government abolished import bans for luxury goods as well as licensing requirements for exports — the private sector has given the green light to compete in the manufacturing and marketing of cash crops.

Further reforms were undertaken from the late 1990s when quantitative restrictions and taxes on the majority of the exports abolished, and further liberalization of the financial, telecommunications, and transportation sectors undertook. Import tariffs were also adjusted during this time and have gradually reduced over the years on various occasions, the most recent one being in January 2005 when Tanzania joined the East African Community Customs Union (Walkenhorst, 2005). Several indicators provide proof of Tanzania's efforts at trade liberalization. For instance, its tariff rate average has declined by more than seven percentage points between 1997 and 2004 from 23 percent in 1997 to 14 percent in (2004). Compared to other countries in the Eastern and Southern Africa, Tanzania's import tariffs have been below the average in the Southern African Development Community (SADC), indicating a positive step by Tanzania towards trade liberalization. In the spirit of deepening international and regional integration, the Tanzanian Government in 2003 published The National Trade Policy, which gives the trade a central role in the country's strive to enhance its efficiency, productivity, and international competitiveness. Among the activities outlined in the National Trade Policy include improvement in physical infrastructure and dissemination of information, diversification of the economy, value addition of primary export commodities, boosting investment flows, and achieving a balanced current account (URT National Trade Policy, 2003).

The impact of international trade on employment has been a widely discussed topic in the economic literature, political debates, and the popular press. Surprisingly enough, rather little empirical research has been conducted to shed light on how trade openness impacts employment in different occupations (Mirko and Thieß, 2016). This is despite the fact that the employment structure in industrialized nations have undergone a substantial change during the past decades. During the same time period, the inflation-adjusted trade volume increased approximately by a factor of five. To draw relevant lessons for policy purposes and for manufacturing stakeholders to press forward, this study investigates the diverging effects of trade on employment in manufacturing industries in Tanzania, in order to underscore how trade has impacted on job losses in the country's manufacturing sector.

1.1 The Problem

The growing significance of foreign trade plays an important role in any country, and Tanzania is not an exception. Foreign trade figures show the extent to which this can happen by measuring the ratio of foreign trade in goods and services to the country's GDP. Figures from 1991 to 2014 suggest that it has almost doubled from 45.2 to 84.8% for a country such as the US. By way of comparison, in 2013 the rate of U.S. foreign trade amounted to only 30% (Mirko and Thieß, 2016). With the increasing importance of foreign trade, Tanzania is more and more susceptible to global change and also given the role of the Tanzanian economy as one of the largest economies within East Africa. The high increase in Tanzania foreign trade would be a useful approach when examining its impact on the manufacturing sector and employment. In the past 20 years, there has been a significant decline in

employment in the manufacturing sector in almost all countries (Mirko and Thieß, 2016). This is illustrated by a decrease in absolute employment as well as a continuous decrease of persons in employment protected by social security.

In 1991 almost a quarter of the total workforce was active within the manufacturing sector, and by 2012 it had fallen to 16.8 per cent, which constitutes a drop of more than 2.7 million workers (Mirko and Thieß, 2016). At the same time, imports from developing countries have increased dramatically (measured by the ratio of imports to GDP). Since 1990 it has increased almost fivefold, by 9% points, to 10.9% in 2012, creating substantial competitive pressure. With imports up the number of workers within the manufacturing sector is down, and this is the clear message from the market. With industrial nations on the one hand, and emerging and developing nations on the other the question is who benefits from trade and who suffers from trade setbacks? Causes and interactions are seemingly as limitless as the world market. In order to take a look at the bigger picture both qualitative and quantitative analyses allow shedding light on crucial aspects of the problem.

1.2 Objectives

The main purpose of this study was to examine the effects of trade on jobs losses in manufacturing industry in Tanzania. Specifically: i) to analyse the evolution of the manufacturing sector in Tanzania; ii) to provide an overview of the performance of the manufacturing sector; iii) to identify the rising manufacturing subsectors and firms in terms of domestic production, sales and exports; and iv) to recommend policy for further success in the manufacturing sector.

2.0 LITERATURE REVIEW

This study is related to strands of literature on the effects of trade and employment. There is a large body of literature that explores the effects of trade and employment. Various studies conducted on the relationship between these two variables have had mixed results, with some showing a positive relationship (Salem et al, 2011; Erlat, 1999; Kaya, 2010; Villarreal and Yu, 2007; Aguayo-Tellez et al, 2009). Few studies on the negative relationship between trade and manufacturing sector were also conducted (Dorn and Hanson, 2012; Roberts and Thoburn, 2004; Jenkins, 2006; Ribeiro et al, 2004 and Revenga, 1997). Moreover, the majority of these studies have been conducted in the developed countries with studies on developing countries concentrated mainly in Latin American (Villarreal and Yu, 2007; Aguayo-Tellez et al, 2009; Ribeiro et al, 2004; and Revenga, 1997). In the case of Tanzanian, only some few studies were conducted on the manufacturing sector (Mkenda, 2005). Olayiwola and Rutaihwa, 2010) study focused on the Textile and Clothing industry. According to Grossman and Rossi- Hansberg (2008), industries are able to unbundle the production process into a continuum number of tasks, whereby decreasing costs of off-shoring are associated with an increasing number of tasks that can be outsourced to low-wage countries. Off-shorable tasks are generally considered to be routine tasks, whereas non-routine tasks remain in the domestic firm (Baldwin and Robert-Nicoud, 2007). Dominik and Philipp (2015), have identified three potential channels through which establishments are affected by trade and thus adapt their employment. They include (i) the import of inputs and intermediate goods used in the production process or "import intensity", (ii) the import of goods that compete with final goods of domestic establishments or "import competition", and

(iii) the export of goods that are produced by domestic establishments or "export intensity". There is a comparatively literature on the role of exporting as a determinant of the occupational mix. Existing literature in this field focuses mainly on total employment effects or, at most, distinguishes between a limited number of groups of employees such as production and non-production or high-skilled and low-skilled (Dominik and Philipp, 2015).

Rose (2018), argues that US manufacturing real output increased nearly fivefold from 1960 to 2015, even though the number of manufacturing workers in 2015 was nearly 3 million fewer than in 1960. This increase in productivity is the main reason for the declining share of manufacturing employment. If trade deficits hurt American workers, a rising trade deficit should lead to increasing unemployment, while a falling trade deficit should be associated with declining unemployment. However, there is not much of a relationship between unemployment and trade deficits. Dean (2016 and Scott (2017), blames the dramatic absolute job loss on a huge trade deficit with China. A careful analysis by Acemoglu et al, (2016) finds that the surge of Chinese imports from 1991 to 2011 led to 2.6 million job losses in the US. But these numbers represent the negative gross effect of Chinese imports without accounting for countervailing factors. Using an industry-by-industry approach, Hicks and Devaraj (2015) find that 87 percent of declining manufacturing employment between 1998 and 2012 was caused by technological improvements, meaning that only 13% of the decline could be because of trade.

Mirko and Thieß (2016) argued that in the past 20 years, there has been a significant decline in employment in the manufacturing sector. This is illustrated by a decrease in absolute employment as well as a continuous decrease of persons in employment protected by social security. In 1991 almost a quarter of the total workforce was active within the manufacturing sector. By 2012 it had fallen to 16.8% which constitutes a drop of more than 2.7 million workers. At the same time, imports from developing countries (measured by the ratio of imports to GDP), have increased dramatically. Since 1990 it has increased almost by 9% to 10.9% in 2012, creating substantial competitive pressure. With increased imports, the number of workers within the manufacturing sector is down, which is a clear message from the market.

3.0 METHODOLOGY

The study was approached both qualitatively and quantitatively with both primary and secondary data used in the analyses. The two main sources of information used in analysis were done comprehensively: (i) desk review of the available documented information and (ii) primary and secondary data analyses. A comprehensive desk review of the Tanzanian manufacturing sector policies, performance, status, problems, constraints and challenges has been conducted to expound the scale and limitations of the research problem. A review of the literature covered relevant published documents on the sector including reports of the government agencies as well as other sources of information on the topic. An OLS model was formulated for a quantitative analysis (Herath, 2014).

3.1 Sources of Data

The study uses annual secondary panel data covering the period of 2000 to 2012. The period selected is based mainly on the availability of data. The main sources of data are the National

Bureau of Statistics (estimated number of employees variable), Bank of Tanzania annual reports and United Republic of Tanzania Economic Surveys, Ministry Of Planning, Economy And Empowerment (estimated labour costs) and Ministry Of Finance And Economic Affairs (performance indicators in the manufacturing activities). Activities identified are those that contributed more than one percent (value-added) in 1999 and 2000 survey. The survey uses the International Standard Industrial Classification Revision 3 (ISIC Rev 3). In total, therefore, the data used to cover 13 consecutive years, from 2000 to 2012. The data included all sub-sectors in Tanzania's manufacturing sector. The study used an econometric model to analyse the data.

3.2 Specifications of Empirical Model

The study used ordinary least square (OLS) method to derive multiple regression model utilized to analyse the effects of trade on employment in the manufacturing sector in Tanzania (equation 1).

$$EMP_t = \beta_0 + \beta_1 TRA_t + \beta_2 MAN_t + \beta_3 MPI_t + \beta_4 XPI_t + \beta_5 GDP_t + \beta_6 KTL_t + et \quad (1)$$

Where,

GDP _t	=	Gross Domestic Product
β ₀	=	Constant
TRA	=	Trade
MAN	=	Manufacturing
MPL _t	=	Employment
MPI _t	=	Imports Intensity
XPI _t	=	Export Intensity
KTL _t	=	Capital formation
et	=	Error term

Given that the study is based on time series data, the price effects of variables were removed and consumer price index (CPI) used. In this way, the price effects of GDP, total imports, total exports, capital formation were adjusted and inflationary effects removed. In order to make accurate and reliable conclusions, variables were tested using relevant analytical methods. Imports penetration can be calculated by dividing the total import from the domestic demand and presented as a percentage (imports/output+ imports-exports). While export intensity can be computed as a ratio of total exports to the value of total output, that is exports/output (Sen, 2008). The effect of exports on employment depends on the nature of exports, labor intensive or capital intensive, and its correlation would be negative or positive depending on their results (Sankaran et al, 2010).

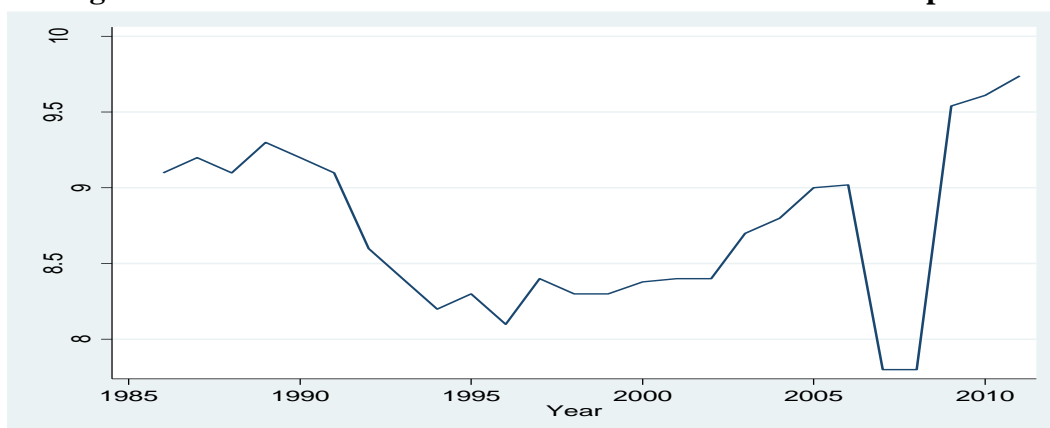
4.0 RESULTS AND DISCUSSIONS

4.1 Brief considerations on manufacturing sector in Tanzania-A qualitative analysis

The focus on the manufacturing sector informed by the fact that the manufacturing sector is export-focused and highly labour-intensive; hence, the impact of trade reforms on employment is likely to be higher than in other sectors. Compared to other countries in Sub-Saharan Africa, the manufacturing sector in Tanzania is one of the least developed.

According to the country's Annual Survey of Industrial Production and Performance (URT, 2010), it is way behind similar sectors from Asia and is said to be half of Kenya's manufacturing sector in size (more than 10%) The manufacturing sector in Tanzania is small compared to other sectors, such as the services and agriculture sectors.

Figure 1: Annual real Growth Rates at constant 1992 and 2001 prices



Source: National Bureau of Statistics and Bank of Tanzania (2012)

About contribution on the country's economic growth, the sector contributed an average of 8.8% to the country's gross domestic product (GDP) between 2000 and 2008, with the year 2010 registering a contribution of 9.8% Bank of Tanzania (2012) as can be seen in figure 1. Despite the gloomy picture, this sector has witnessed some steady growth beginning in the early 2000s. The real annual growth of the manufacturing sector has been maintaining approximately a more or less 7% pattern in the recent past, as can be depicted in figure 2.

Figure 2: Growth of the manufacturing sector from 1986 to 2011



Source: National Bureau of Statistics and Bank of Tanzania

The lower growth rates attributed to a decrease in the production of exported goods following the impact of the Global Financial Crisis. However, the production of some items, such as food and dairy products, chemicals, and printing, increased (Bank of Tanzania, 2012). Tanzania's industrial sector contributes around 25% of the country's GDP and experienced

an average annual growth rate of about 8% over the past five years. The general industrial structure of Tanzania is composed of manufacturing (53%), processing (43%), and assembling industries (4%). The Tanzania manufacturing sector contributed 5.6% to the country's GDP in 2014, with USD 2.69bn, compared to USD 1.47bn in 2009, representing an increase of 82% (Tanzania Invest.com, 2020). Since agriculture is the mainstay of Tanzania's economy, the manufacturing industry is centred around the processing of local agricultural products. The manufacturing sector in Tanzania consists mainly of food processing (24%), textiles and clothing (10%), chemicals (8.5%) and remaining 57.5% include beverages, leather and leather products, paper and paper products, publishing and printing and plastics. Export of Tanzania manufactured goods include cotton yarn, and processed products. Tanzania's agriculture value-added net output rose by 6.1% during 2009 – 2014, from USD 8.6bn to USD 13.8bn (Tanzania Invest.com, 2020).

Figure 3 shows the growth of the manufacturing sector from 1986-2011.



Source: National Bureau of Statistics and Bank of Tanzania

The majority of the activities in the country's manufacturing sector are small and are at their infancy stage. The most significant proportion of these activities includes the manufacturing of primary consumer products such as food, beverages, tobacco, textile and furniture, and wood-allied products according to the Annual Survey of Industrial Production and Performance (URT, 2008-2010). Other factors affecting manufacturing productivity in Tanzania include the size of the firm and technological factors such as new vintage capital and internet access (Walkenhorst, 2005). On the issue of whether foreign trade is the cause of manufacturing job losses, (Rose 2018) argues that, given that trade deficits hurt workers locally, a rising trade deficit should lead to increasing unemployment in the manufacturing sector. That is, a falling trade deficit should be associated with declining unemployment. That is there is no much of a relationship between trade deficit and unemployment.

4.2 OLS Results

The results of the model are given in table 1. The OLS results suggest a good fit of the model. The coefficient of determination (R^2) of 0.7812 confirms that at least 78% of the variation in

the model was explained by variables of the model. The coefficients of independent variables Trade (TRAt)

Manufacturing (MANt), Imports (MPIt), and Physical Capital (KTLt) all were positive and significant the 1% and 5% levels respectively. However, the coefficients of Employment (EMPLt) and Exports (XPIt) independent variables were not significant. The coefficient of manufacturing was significant at the 1% level, suggesting that manufacturing plays an important role in the country’s GDP. This finding conquers with the finding by Mwang’onda et al, (2018), who did find that manufacturing exerts a significant positive effect on the country’s GDP.

Table 1: Multiple Regression Results
Dependent Variable: Gross Domestic Product (GDP)

Regressors	Coefficient	Std. Error	t-Test	Prob
Constant	0.0741553	0.1487890	4.98	0.038
TRAt	1.3287040	0.3149132	-4.22	0.052
MANt	0.6142271	0.1077962	5.70	0.029
EMPLt	-0.0253739	0.0087772	-2.89	0.102
MPIt	0.4371235	0.8942750	4.89	0.214
XPIt	-0.5234064	-0.0810305	-6.46	0.023
KTLt	0.0269624	-0.329	-1.43	0,017
N = 22	F = 12.51	Prob = 0.0460	R ² = 0.7812 R ⁻² = 0.4324	DW = 1.723

According to Van Ha and Quang Tran (2017), increase in international trade coinciding with rising import competition will result in substitution of domestic production, and this will lead to a fall in employment in the import sector. The finding in table 1 also shows that both employment and exports variables have negative signs and were not significant. This means that trade has significant negative effects on employment in Manufacturing and exports. The country tends to import more than to export, that is with 1% increase in both variables will lead to a reduction of -0.025% and -0.523% in both employment and exports respectively. The findings support the finding by Tuhin (2015) who argued that Manufacturing employment in Australia has been declining both in absolute and relative terms over the past four decades. Employment has been decreasing in all industries except food, beverage, tobacco manufacturing, machinery and equipment manufacturing.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study investigated the effects of international trade on declining employment in manufacturing industries in Tanzania. The findings suggested that the main cause of declining employment in manufacturing industries is more imports rather than exports. From the OLS results, both employment (EMPLt) and exports variable (XMIIt) variables were negative and not significant, suggesting further destruction in the manufacturing sector. The

trade deficit is a result of more imports which in many cases, hurt Tanzanian workers and the economy. If it does, a rising trade deficit often leads to higher unemployment, while a falling trade deficit can be associated with declining unemployment (Rose 2018). Hence, the relationship between unemployment and trade deficits is not much. That is, the higher the trade deficit, the lower the unemployment tends. For those that think changing our trade agreements will lead to a manufacturing renaissance. It is important to get these things right. Improving Tanzanian economic performance is an important and arduous task. The evidence that international trade has had a little net impact on the size of the manufacturing sector, in particular, is not clear. Employment in the manufacturing industries has not been growing and has been declining since then, although the dominant role manufacturing continues to play in the country's economy. The argument that trade has not caused manufacturing employment to decline would have little sense to the many workers who lost their manufacturing jobs. Even if the trade has not caused manufacturing employment to decline, many Tanzanians would support an increase in manufacturing employment, since those manufacturing jobs are critically important for workers who have no university degrees, especially men (Rose, 2018).

5.2 Recommendations

Trade is the only way to create more opportunities for the people and the country as well. There is no immediate answers to declining manufacturing job loss, which can be overturned with a good approach to trade. Therefore, the use of more public subsidies for new manufacturing industries should be weighed against those more effective alternatives.

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