

# Bank Lending and Manufacturing Sector Growth in Zimbabwe

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**ABSTRACT:** Bank lending stimulates manufacturing sector, which is a major component for economic growth. The study strives to examine the impact of bank lending on manufacturing sector performance in Zimbabwe. E-views 7 was used to analyse times series data from 2009-2015, computing an ordinary least squares (OLS) regression model. The Augmented Dickey Fuller (ADF) unit root test confirmed the stationarity of all variables at first difference and the diagnostic test were performed. The study established a positive relationship between commercial bank loans and volume of manufacturing index which conquered with Adebisi, (2004). Based on that, the monetary policy should emphasize on mandatory sectorial allocation of bank credit with appropriate disbursements to boost the flow of credit to the manufacturing sector.

**KEYWORDS:** Bank Lending, Manufacturing Sector, Manufacturing Index, Zimbabwe.

## I. INTRODUCTION

Bank lending plays a fundamental role in propelling the manufacturing sector performance through purchasing machinery required to boost production. Investigations and explorations by scholars in Japan, Germany, United States of America and Nigeria shows that banks loans boost manufacturing productivity which results in quantum leap of output of goods and services, high economic growth and better living standards (Anyanwu, 2000; Alao, 2010). However there has been a growing concern on the decline of manufacturing sector output in Zimbabwe, despite the fact that the government embarked on several strategies and policies aimed at improving industrial production and capacity utilization of the manufacturing sector. Manufacturing sector plays a catalytic role in a modern economy and has many dynamic benefits crucial for economic transformation and hence regarded as the engine of growth of the economy, Libanio (2006).

In Zimbabwe, the role of banks in the development of the manufacturing sector has not been completely addressed and the impact has not been completely felt. Manufacturing sector has been experiencing a stunted growth and its contribution to gross domestic product has remained low whilst bank credits and advances were increasing and being allocated yearly to the manufacturing sector (CZI 2012). Despite these credits and advances in place, some manufacturing industries have been affected by lack of funding from banks. The Zimbabwe Stock Exchange (2013) noted that there was signs of stress on the balance sheets of at least 10 listed companies in the manufacturing sector and some of the manufacturing companies were almost to liquidate. Star Africa Corporation owed US\$19.7million, Amalgamated Regional Trading Holdings (ART) was battling to raise US\$7 million to settle short-term liabilities and PG Industries was technically insolvent, and its current liabilities were far exceeding current assets due to an expensive debt burden.

The C.Z.I (2012) also points to a stagnant performance, with the average manufacturing output growing below 2%. There was some real growth taking place in sub-sectors such as the foodstuffs, drinks, tobacco and beverages, wood

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and furniture, as well as the metals products sub-sectors but the improvement is small because of lack of funding from the banks.

The unimpressive performance of the manufacturing sector in Zimbabwe has also been characterised to massive importation of finished goods, especially from Far East countries and inadequate financial support for the manufacturing sector, which ultimately has contributed to the reduction in capacity utilization of the manufacturing sector.

## II. LITARATURE REVIEW

### Theoretical Review

Undeniably, production of manufacturing industries can be augmented by channelling financial resources through lending to boast high output. To reinforce this paradigm, many theories are in place to support the idea which include supply-leading hypothesis and demand-leading hypothesis, financial repression hypothesis and Solow (1956) and Swan (1956)'s neoclassical growth theory which are all in line with Patrick (1966) which postulates a feedback relationship between economic growth and financial development. These theories generally show a positive relationship between bank lending and manufacturing sector performance.

### Empirical evidence

- **Bank lending and economic growth**

Bank lending stimulates manufacturing sector, which is a major component for economic growth. Many authors have theoretically and empirically shown that there is causal direction from financial development to economic growth, (McKinnon 1973, King and Levine 1993a, Levine 1997, 2000, and Christopoulos and Tsionas, 2004). On the other hand, other authors argue that the direction is from economic growth to financial development. Since the economy is growing, there is an increasing demand for financial services that induces an expansion in the financial sector, (Gurley and Shaw 1967, Goldsmith, 1969 and Jung, 1986).

- **Bank lending and manufacturing sector performance**

It is certain that manufacturing sector needs fund for either working capital or for business expansion in order to boost its productivity. Dualism in the financial market inhibits proper channel of funds for investment that augment manufacturing output. Gerschenkron (1962) suggested that in developing countries, there is need for some special institutions to supply long-term funds for industrial capital, making the banks to be the prime sources of capital and entrepreneurship for the type of industrialization, indicating a kind of supply-leading hypothesis. Mike (2010) reiterated that the manufacturing sector is reputed to be an important engine of growth, an antidote for unemployment, a creator of wealth, and the threshold for sustainable development, thus it is expected to dominate, shape, and define the core path of industrialization. Bank lending and manufacturing sector has a positive but insignificant relationship with index of manufacturing sector, (Adebisi, 2004). The relationship between bank lending and manufacturing sector growth was also reinforced by Alao (2010). Cotarelli (2005) in central European countries also identified long-term relations between bank credit to the private sector to manufacturing sector production and a set of economic and institutional variables, for a panel of non-transition developing and industrialized countries. Cappiello, Kadareja, Saensen, and Patropapa (2010) established that bank loans and credit standard have an effect on output focusing on the Euro area such as Austria, Belgium, Greece, Ireland, Italy, Netherland, Portugal, and Spain. In contrast to the US findings, changes in the supply of credit, both in terms of volumes and credit standards applied on loans to enterprises, have significant effects on real economic activities. In Western Africa, Adebisi (2009), found that manufacturing capacity utilization and bank lending rates significantly affect manufacturing output in Nigeria. Based on these studies, the role of banks is generally to catalyse the development process in the manufacturing sector and hence contributes to economic growth of the nation. That is, bank lending can assist in the break away from lumbering reiteration of subdued economic performance and accelerate economic growth.

### Manufacturing sector in Zimbabwe

The trade and manufacturing sector is key to the economic development of Zimbabwe, (Ministry of Industry and Commerce, 2015). The country continued to experience a huge trade deficit due to the poor performance of exports

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exacerbated by a huge import bill, which is mostly consumptive. Despite the introduction of the stable US currency in 2009, manufacturing sector continues to go against the wave. Exports in 2015 were US\$2.7 billion, representing a 13% decline from the year 2014, which was US\$3 billion. This was a worrisome trend at a time when exports should be the main driver for economic growth. Value added (manufactured) exports, which normally fetch higher earnings, did not perform well during the same period. The manufacturing sector’s export performance between 2014 and 2015 indicated that the sector’s capacity to export was declining. Estimates from the Reserve Bank of Zimbabwe (2015), show that in 2015, manufactured exports were about US\$475.2 million, having declined by about 7% compared to 2014. In 2015, manufacturing subsectors (clothing, furniture, food, beverages, engineering, leather, footwear and agricultural inputs) constituted about 10% of total exports, down from 13% in 2014. (Zim Trade, 2015).

### III. METHODOLOGY

The study used descriptive and explanatory research design. Ordinary least squares regression analysis was also used to evaluate the impact of bank lending on manufacturing sector performance because of its properties that have ability to meet best linear unbiased estimator (BLUE) condition and produce unbiased results. Diagnostic test were also carried out to validate the data.

#### Empirical Model Specification

The model was based on Alao (2010) which was first introduced by Schumpeter (1934) on the study of Circular flow of creditary production. To explore the nexus of bank lending and manufacturing sector growth in Zimbabwe, the model can now be expressed as:

$$VMI = F(CBLA, CINTR, EXR, INF) \dots\dots\dots (1)$$

$$VM I_t = \alpha_0 + \alpha_1 CBLM_t + \alpha_2 INTR_t + \alpha_3 EXR_t + \alpha_4 INF + \varepsilon_t \dots\dots\dots (2)$$

- VMI - Volume of manufacturing index
- CBLM - Commercial bank loan advances to manufacturing sector
- INTR - Commercial bank interest rates
- EXR - Exchange Rates
- INF - Inflation rate

### IV. DATA, RESULTS AND ANALYSIS

#### Descriptive statistics

Before the estimation of results were accredited out, descriptive statistics through measures on central tendency was considered.

**Table 1 : Descriptive statistics**

	VMI	CBLA	CINTR	EXR	INF
Mean	45.00363	255574.0	10.24300	8.067718	2.839500
Median	46.44681	280520.3	9.625000	7.795250	3.220000
Maximum	57.30118	541025.9	15.50000	10.43000	10.50000
Minimum	29.60530	0.000000	7.200000	6.610000	-7.700000
Std. Dev.	6.467371	149345.8	1.813759	1.052560	2.628370
Skewness	-0.674765	-0.207817	0.692258	0.826005	-1.007428
Kurtosis	2.550963	1.902372	2.885858	2.664248	7.531176

Source: E-views 7

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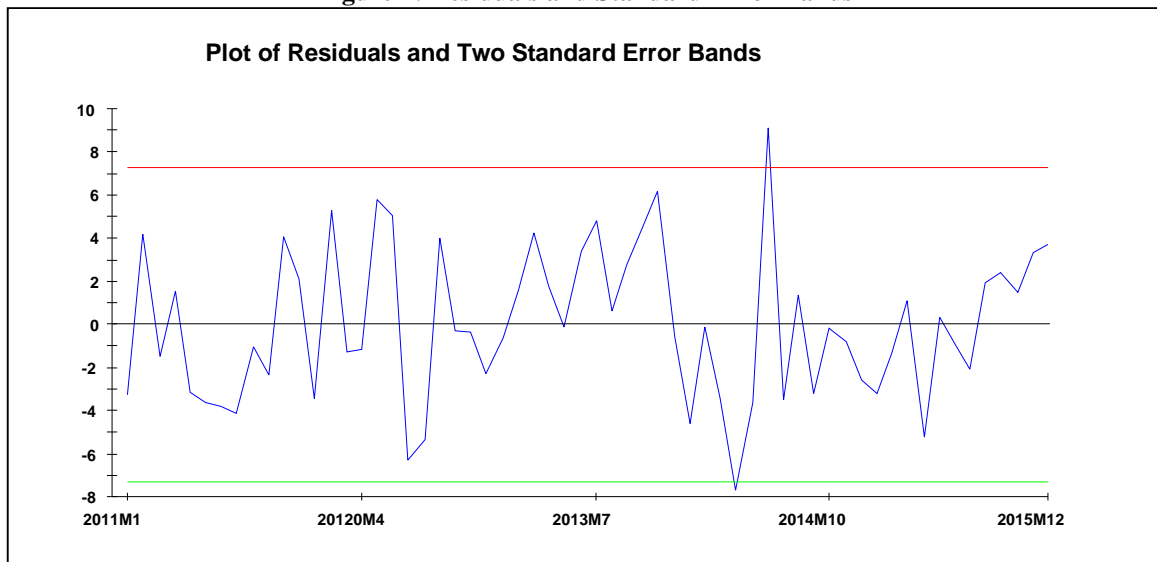
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From table 1 above, the minimum and maximum represents some disparities for the variables which shows outliers. Interest rates and exchange rates are negatively skewed whilst the manufacturing index, commercial bank loans, and inflation rate are positively skewed. The mean and median of volume of manufacturing index (VMI), inflation (INF), exchange rate (EXR) and interest rate (INRT) are close to each other, showing that the data is normal. The normality of data can also be reflected by looking at the residuals and two standard error bands as in figure (1).

**Figure 1: Residuals and Standard Error Bands**



Source: *E-views 7*

The graph in figure (1) shows that the data is within the bands, reflecting that the data is normally distributed and the normality hypothesis that residuals are normal is safely accepted.

### Stationarity Test Results

In order to preserve from spurious regression (Granger and Newbold, 1974), the unit root test of stationarity using the Augmented Dickey-Fuller (ADF) test was conducted. This is because loading of the endogenous variable is minuscule when in fact a long run relationship exists between the dependent variable and the fundamentals that driving it. In absolute terms were I(1) stationary.

### Multicollinearity Test Results

To examine the relationship between variables themselves, a multicollinearity test was also conducted. The results are as follows:

**Table 2: Correlation Matrix**

	VMI	CBLA	CINTR	EXR	INF
VMI	1.000000	0.795273	0.364797	0.248690	0.020531
CBLA	0.845273	1.000000	0.321218	0.572504	-0.062234
CINTR	0.364797	0.321218	1.000000	0.052476	0.512372
EXR	0.248690	0.572504	0.052476	1.000000	-0.071612
INF	0.020531	-0.062234	0.512372	-0.071612	1.000000

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Source: *E-views 7*

From the table 2, it shows that, there is a very strong positive correlation between volume of manufacturing index (VMI) and commercial bank loans advances to the manufacturing sector (CBLA) at a value of 0.845273. Similarly, there is also negative strong association between inflation rate and Commercial bank loan advances to manufacturing sector at a value of -0.062234. There is negative correlation between inflation rate (INF) and exchange rate (EXR) at a value of -0.071612.

From the table it shows that the financial sector, industrialist and policy makers are trying to improve the performance of manufacturing sector since all the variables are below 0.8 and it becomes easy to get coefficient estimates with small standard error. Commercial bank loans are giving signs of auto correlation but not exactly at 0.8 and therefore we can conclude that in this model there is no multicollinearity because all the variables are below 0.8.

## Model estimation

Table 8: OLS results Dependent variable: VMI

Variables	Coefficient	Std. Error	t-Statistics	Prob.
C	46.59617	5.332370	8.738359	0.0000
CBLA	0.004409	4.31E-06	9.484007	0.0000
CINTR	0.227037	0.340759	0.666269	0.5080
EXR	-1.803516	0.560949	-3.215115	0.0022
INF	0.063154	0.220112	0.286916	0.7753

Source: *E-views 7*

R-squared : 0.701863 F-statistic : 32.36969  
Adjusted R- squared: 0.680180 Prob(F-statistics) : 0.000000  
Durban-Watson stat: 1.861249

$$VMI = 46.59617 + 0.0000409CBLA + 0.227037CINTR - 1.803516EXR + 0.063154INF + \epsilon_t \dots(3)$$

T-statistics (8.738359) (9.484007) (0.666269) (-3.215115) (0.286916)

The results in table shows that commercial bank loans (CBLA), exchange rates (EXR) and the constant (C) are significant at 1% in explaining the changes in manufacturing sector performance in Zimbabwe between the period 2009-2015 on monthly basis. However interest rates and inflation are statistically insignificant

### 4.12 Interpretation and discussion of the results

The results shows that exchange rates (EXR) have negative relationship and statistically significant at 1% on explaining the performance of manufacturing sector in Zimbabwe. This was in line with a prior expectation and expected sign. Holding other things constant this shows that a 1unit depreciation in value of US\$ in Zimbabwe lead to a decrease in volume of manufacturing sector index by (-1.803516) units. The manufacturing sector performance is decreasing because more finished goods are being imported. This sector is only exporting unfinished goods without value addition and also it is cheaper to produce in other countries because of high cost of borrowing from banks. Simeon (2013) in Nigeria also found that exchange rates are significant in explaining variations in manufacturing production index and indicate a negative relationship in explaining the performance of manufacturing industry.

Commercial bank loans advances positively influence volume of manufacturing index and statistically significant at 1%. Therefore a unit increase in the value of US\$ for commercial bank advances to the manufacturing sector will lead to an increase in volume of manufacturing sector index by 0.004409. If the manufacturing sector obtains more loans, production increase however the major challenge is that manufacturing sector was being constrained by lack of working capital because of the prevailing problem of liquidity crunch in the economy during the period of 2009-2015. This indicates that the financial sector plays an important role in economic growth because as firms obtain finance manufacturing sector production increases and this will lead to economic growth. This is supported by King and Levine



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(1993a, 1993b) and Schumpeter (1912) in the literature; they argued that financial development lead to economic growth.

The Ministry of Finance (2012) budget statement pointed out that about US\$ 1.0 billion is needed to boost the manufacturing sector performance. Therefore the manufacturing sector should get loans from financial sector mainly from banks despite that the loans available are expensive but what is important is to utilize the available funds. The pecking order theory also emphasizes that since the internal finance are insufficient there is need of external finance, therefore the manufacturing industry should borrow funds mainly from banks in order to boost output. The supply and demand lead hypothesis supports the role of banks in improving the performance of manufacturing sector.

## V. CONCLUSIONS AND RECOMMENDATIONS

The results show that there is positive relationship between bank lending and manufacturing sector performance in Zimbabwe. A unit increase in US dollar in commercial bank loans advances lead to an increase in manufacturing production index by 0.0004409. Other control variables such as interest rate , inflation and Exchange rates have negative and positive relationship a in explaining the performance of manufacturing sector in Zimbabwe. The exchange rate found to be significant and have negative relationship with bank loans. This shows that as US dollar depreciates in Zimbabwe lead to a decrease of manufacturing production index by -1.803516. Interest rates found to be insignificant to the model but positively influence manufacturing production index by 0.227037. This shows that manufacturing firms were not borrowing due to high interest rates charged by commercial banks and investors were not investing in the manufacturing sector during 2009-2015. This indicates that most of manufacturing industries were not borrowing funds from commercial banks. Inflation rate has been found insignificant in explaining but positively influence the manufacturing production because as price of manufacturing goods increases this will lead to a decrease in demand of produced goods and creates higher importation because imports becomes cheaper.

To rectify the problem, policy makers should encourage commercial banks to be further empowered, so as to be able to grant long-term loans that would boost manufacturing sector's performance The policy makers should also put import restrictions to control the high importation of finished goods which causes some fluctuations in the exchange rate and a decrease in demand of locally manufactured goods. Furthermore, politics should take a back seat as it is thinning the already dented Zimbabwean economy.

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