

## **The impact of foreign direct investment (FDI) on export growth: Evidence from Zimbabwe-1980 to 2011**

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### **ABSTRACT**

The paper examines the impact of foreign direct investment on export growth in Zimbabwe for the period 1980 to 2011. Foreign direct inflows in exports-oriented productivity enables the country; to ease the current pressure on balance of payment account, accumulate physical capital, complement inadequate domestic savings, create employment, augment local human capital and help conjoin the economy into the globalised village. Using the the Ordinary Least Squares method, the results showed that current period FDI, one year lagged FDI, trade openness and one year lagged exports were significant and had a positive impact on export growth. However, gross domestic product was insignificant. The study recommends that Zimbabwe creates a clement investment climate that fosters export oriented FDI inflows. Policies that enhance trade openness and export competitiveness are a prerequisite for growth of a sustainable export base.

Keywords: Zimbabwe, exports, economic growth, Foreign Direct Investment

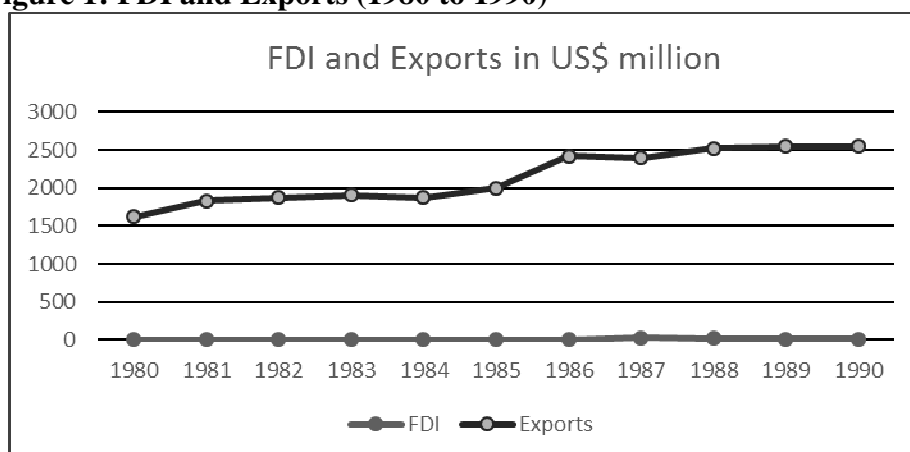
## INTRODUCTION AND BACKGROUND

In developing countries, FDI is a source of external finance that closes the ever increasing export- import lacuna. High export performance is a channel of generating much needed foreign currency required to supplement inadequate domestic capital formation a serious problem facing developing countries. Export-oriented FDI inflows can also be used to; expand productive capacity, lower production costs and obtain economies of scale. The endogenous growth theory avers that FDI upsurges the exporting capability of the recipient economy through productivity gains, transfer of technology, efficiencies, knowledge, managerial, marketing and technical skills. In Zimbabwe FDI plays a critical role in augmenting domestic investment, promoting international trade, expanding domestic savings, and increasing foreign exchange reserves thereby correcting the Balance of Payments position. In addition the availability of significant FDI inflows diminish foreign exchange constraints on private fixed investment by facilitating imports of business equipment and machinery in the country. It is expected that high export growth rate prompted by FDI inflows, will eventually lead to improved living standards, reduction of unemployment and overall economic development.

### Background of the Study

After the country's independence in 1980 and well into the late 1990s, the Zimbabwe government adopted a command economy which was guided by the Marxist-Socialist ideology and homegrown Growth with Equity policies. The country therefore paid little attention to the growing pace of international trade, investment integration and emerging globalization. Just after independence, the government inherited Rhodesian import substitution and inward-looking pre-independence policies and heavily relied on trade restrictions and foreign exchange controls to steer the tightly controlled economy. As a consequence export growth increased by only 3.4 percent between 1980 and 1989 (Mumvuma *et al.*, 2006). The foreign currency allocation system was inefficient and introduced market imperfections and uncertainties which further depressed foreign investment levels.

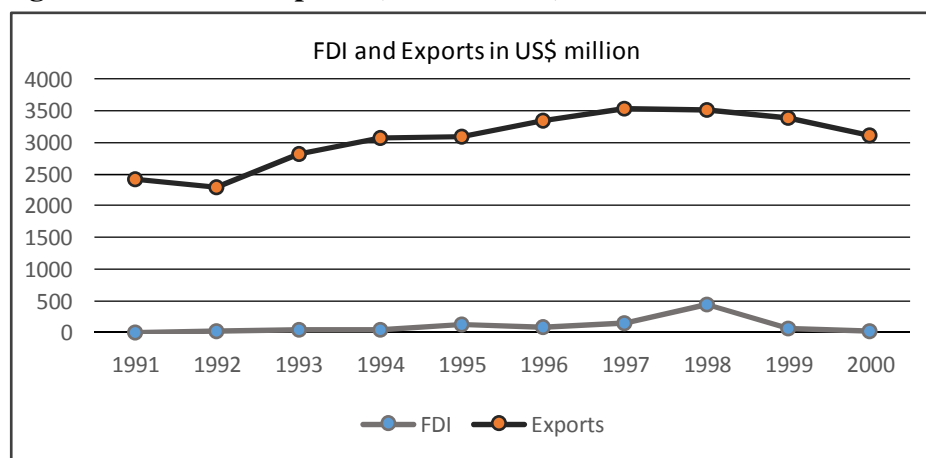
Significantly the high cost of doing business characterized by restrictive regulations price and wage controls, obdurate investment approvals procedures and labor market restrictions contributed to the decline in foreign investment levels. The foreign investment net official flows as a percentage of GDP were negative for the years 1982, 1983, 1984, 1987, 1988, 1989, 1990 with levels of -0.01, -0.03, -0.04, -0.45, -0.23, -0.12, -0.14 respectively. Foreign exchange controls which were effective in controlling imports crippled export growth of the country. During this period the country could not import capital equipment in key economic growth enablers like energy, transportation and information technology systems. The private sector also stalled on technological progress and heavily relied on redundant manufacturing equipment which were imported during the federation era in 1963.

**Figure 1: FDI and Exports (1980 to 1990)**

Source: World Bank (2014) and African Development Bank (2014)

Figure 1 shows the relationship between exports and FDI trends over the period 1980 to 1990. Exports increased insignificantly from 1980 to 1983, before declining in 1984, 1986 and 1987. However from 1987 exports increased continuously up to 1990. In contrast FDI was constant from 1980 up to 1990. During this period, Zimbabwe could not attract much FDI inflows, possibly due to the command economy that regulated trade and use of export receipts. In order to address the incipient economic underperformance, Zimbabwe came under intense pressure from the World Bank and International Monetary Fund to liberalize the economy in line with global trends. The country adopted Economic Structural Adjustment Program (ESAP) in 1991. The purpose of financial and trade liberalization was to correct macroeconomic imbalances such as low levels of foreign investment and poor export growth. Trade, wages, interest and exchange rate controls were deregulated. ESAP targeted 9 percent growth in exports on an annual basis over a five year period (GOZ, 1991; World Bank, 2012; Kanyenze *et al.*, 2011). In 1993, the Zimbabwe Investment Centre was established as a one-stop investment shop to control and monitor FDI inflows and reduce investment application bureaucracy.

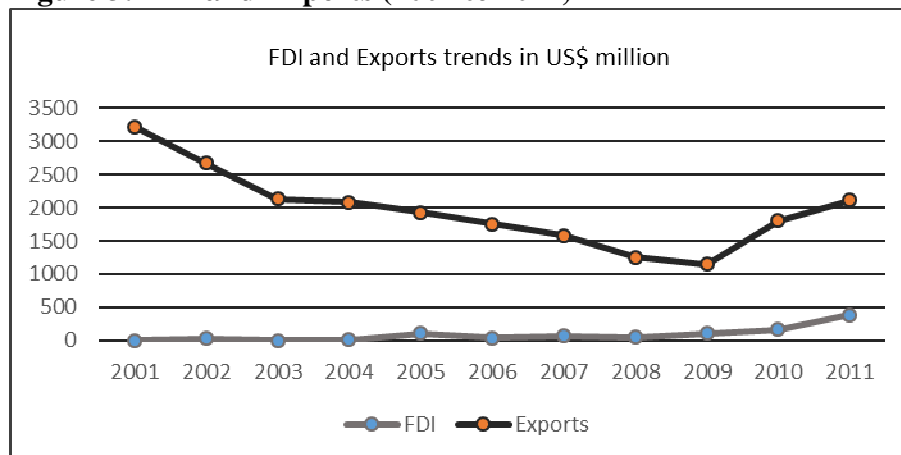
In 1996, the government abandoned ESAP because it exacerbated national inequalities and increased economic hardship. Trade liberalisation exposed manufacturing companies using obsolete technologies to foreign competition. ESAP also failed to induce more rapid FDI growth and fixed capital accumulation in the private sector that was needed to increase productivity and output growth. Zimbabwe then introduced another trade liberalization economic blueprint, the Zimbabwe Program for Economic and Social Transformation (ZIMPREST) which targeted 9 percent export growth. ZIMPREST was also prematurely abandoned in 2000 because Zimbabwe cut public spending in investment enabling infrastructure like energy and transport systems which led to economic decline. Furthermore, the combined result of fiscal stabilisation through reduction in government agricultural input services and the introduction of limited and more expensive lines of credit retarded the efficient allocation of resources and led to severe decline in export growth (World Bank, 2010). Figure 2 illustrates the behavior of exports and FDI in the second decade, 1991-2000.

**Figure 2: FDI and Exports (1991 to 2000)**

Source: World Bank (2014) and AFDB (2014)

According to Figure 2, from 1991 to 1992, exports declined and then increased progressively from 1992 up to 1997. However there was an acute decline during the period 1997 to 2000. FDI increased from 1991 up to 1995, then declined up to 1996 and started to increase again up to the year 1998. FDI inflows fell again from 1998 up to 2000 possibly due to the government involvement in Mozambique and the Democratic Republic of Congo civil wars in 1998. The government re-introduced financial repression and macroeconomic controls on price of basic goods and wages. There were restrictions on dividends repatriation and these policies scared foreign investors causing huge financial disintermediation in the banking system. FDI/GDP ratio in percentage terms dropped from a mean of 15 percent between 1995-2000 periods to four per cent in the period 2000 - 2009. Gross fixed capital formation reduced from about 23 per cent in 2009 to two percent at the end of 2010. According to RBZ (2011), the savings/GDP proportion deteriorated sharply from a high of 28 per cent in 1995 to around 5 per cent in 2008.

Consequently, the performance of the economy was inhibited by an over-valued rate of exchange, price and wage controls, investment controls, and other supply-side bottlenecks like shortage of inventory, energy and working capital. After abandonment of ZIMPREST, Zimbabwe adopted a plethora of economic programs and policies aimed at; developing new markets in non-traditional areas, diversifying the production of high value exports, attracting FDI and unlocking vital trade finance. Some of these programs are Millennium Economic Recovery Programme (MERP) (2000 to 2002), Short Term Economic Recovery Programme (2009), Medium Term Plan in 2010 and the National Trade Policy (2012 – 2016). All these policies were either abandoned during implementation or suffered still-birth. The result was a severe contraction of the economy and hyperinflation. The country dollarized in 2009. The pattern of both FDI and exports during the period 2001-2011 is illustrated in Figure 3.

**Figure 3: FDI and Exports (2001 to 2011)**

Source: WB (2014) and AfDB (2014)

As shown above, FDI was constant from 2001 up to 2004, then increased in 2005 and declined in 2006. However after 2006, FDI increased marginally in 2007 and fell in 2008 and thereafter a small increase have been noticed up to 2011. On the exports side, the trend is showing a continuous decline from 2001 up to 2009. The sharp decrease in the exports might have been caused by the economic crisis in which the production of the economy was no longer sustaining domestic demand, weakening trade terms and lack of export competitiveness. However, in increasingly integrated economy, multinational companies decides to invest depending on the size the economy, locational advantages, availability of natural resource, human capital level of skills, the availability of low-wage labour, political stability (Sikwila,2015) and a country's appropriateness to provide an export platform for manufactured goods (Dunning, 1977, 1980, 1981). Zimbabwe's weak FDI performance since the 1980's is both incomprehensible and perplexing since it possesses most of these endowments.

### A summary of FDI in Zimbabwe

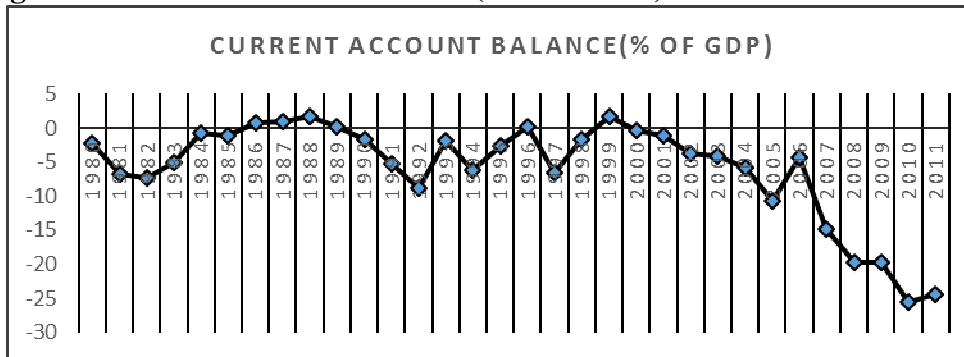
Global FDI flows have grown from US\$50 billion in the early 1980s to US\$2.3 trillion in 2013 and growing by nine percent between 2012 and 2013. In same period between 2012 and 2013 FDI inflows in Africa has only grown by four percent (UNCTAD, 2014). The Southern African Development Co-ordination Conference (SADCC) of which Zimbabwe is a member state, FDI inflows have grown from a mere US\$372 million in 1980 to US\$590 billion in 2013. Muzurura (2016) reports that out of the total inward stock of FDI inflows to sub-Saharan region in 2014, the country attracted only US\$1.7 billion, a figure which is lower than one percent of the total inflows into Sub-Saharan Africa. This amount pales into insignificance compared to its SADCC comparatives. Mozambique received US\$7.7 billion in 2013, South Africa and Zambia attracted US\$15, 8 billion and US\$7, 8 billion respectively. Due to historical and sovereignty reasons, Zimbabwe FDI policies have always been indecisive, hostile and inconsistent. The Zimbabwe Investment Centre instead of easing foreign investments inflows, has been used as a stumbling block for FDI projects believed to conflict with indigenisation, black empowerment, market competition and sovereignty goals. One of the crucial determinants of export growth is

FDI and the ease of doing business proxied by trade openness (Froot and Stein, 1991; Gastanga et al, 1998; Gorg and Greenway, 2004). According to World Bank Ease of Doing Business Report 2015, Zimbabwe was ranked 171 out of 189 countries.

### Statement of the Problem

Zimbabwe has been facing a protracted current account deficit caused by dwindling FDI inflows in export-oriented productivity. Figure 4 illustrates the current account balance as a percentage of GDP over the period of study.

**Figure 4: Current Account Balance (1980 to 2011)**



Source: ZIMSTAT (Various years)

The major contributory factor to low current account balance have been low FDI inflows and over reliance on export of primary products which are subject to the vagaries of low and unstable international prices. The export-import gap is widening as the whole country has become a big supermarket for goods coming from the region. Manufacturing industries have reduced capacity utilization as they cannot outcompete cheap goods from abroad. FDI has dwindled to a standstill thus endangering the capability of Zimbabwe to beneficiate and value add its raw materials using modern technologies. The low FDI trends are not consistent with the country's potential, human capital development and its vast natural resource endowments which are mature for exploitation by both market and resource-seeking investors. The study is significant in that the country is failing to attract high levels of FDI inflows, yet FDI inflows, offer unlimited potential to clear the huge budgetary deficit, extinguish external debt arrears, improve industrial productivity and reduce unemployment which currently stands at 80 percent. The paper pioneers in Zimbabwe the implication of FDI on promoting export growth an issue which has received little attention in the country's empirical literature.

### LITERATURE REVIEW

Much debate has taken place in empirical literature on whether FDI inflows have a stimulus impact on export performance and economic growth especially in developing countries. The findings are mixed. According to Cabral (1995) and Black and Pain (1994), FDI impacts positively on export growth. Numerous empirical studies also confirm that FDI promotes exports growth of domestic countries by augmenting domestic capital required for further exports; helping transfer of technology; facilitating access to new and large foreign markets and providing training for the local workforce and upgrading technical and management skills

(Athukorala and Menon 1995; Zhang and Song 2001; Zhang and Fellingham 2001; Zhang 2005; Banga 2006; Piamphongsant 2007; Kohpaiboon 2008). In contrast, some studies differ and suggest that FDI may lower or replace domestic savings and investment; transfer technologies that are low level or inappropriate for the domestic country's factor proportions; target primarily the host country's domestic market and thus not increase export growth; inhibit the expansion of indigenous firms that might become exporters; and retards the development of the host country's dynamic comparative advantages by focusing solely on local cheap labour and raw materials (Makki and Somwaru, 2004; UNCTAD, 1998); Ernst et al. 1998; Kumar and Siddharta, 1997). Mortimore (2000) reports that FDI inflows in Mexico have resulted in an export platform, possessing little contact with the domestic economy, truncating and limiting the domestic industrialisation process. Dussel (2000) agrees that FDI has increased the polarisation of Mexico's economy as reflected in regional differences in economic performance of the economy. However, Lee (2007), Kutun and Vuksic (2007), Njong and Tchakount'e (2011), Achandi (2011) and Haq (2012) found evidence that FDI positively impact export performance of a recipient economy.

Sharma (2000) and Nguyen *et al.*, (2012) disagreed and argued that FDI has no impact on export growth. Makki and Somwaru (2004) indicate that export growth increases factor productivity due to gains obtained from increasing returns to scale, by catering to the larger foreign market. In addition they say, export growth relaxes the foreign exchange constraints that result in an increase in the import of capital/technology-intensive intermediate inputs. According to De Mello and Sinclair (1995), the transfer of innovative technology fortifies a country's current knowledge stock through training, skills sharing, and by introducing up to date corporate practices. Lee (2007), argues that export growth increases productivity by reducing cost of production. Exports are an important avenue for a country to acquire adequate particularly in early economic development stages (Kutan Vuksic, 2007).

In a study of Brazilian manufacturing firms Wilmore (1992) observes that foreign ownership of domestic firms have a positive effect on export performance. Similarly Goldberg and Klein (1998) also find that FDI promotes export growth, augments import substitution and lead to a greater trade between subsidiary companies. However, in a study of Latin America, Goldberg and Klein (1998, 1999) find no linkage between FDI and aggregate exports. In similar vein, according to Kneller and Pisu (2007), exports oriented multinationals generate positive export externalities if both foreign and domestic firms are operating in the same industry.

However Ruane and Sutherland's (2004) using Ireland as a case study, finds weak evidence of export spill-overs to local firms. Njong and Tchakount'e (2011) using the Engle-Granger causality test for the period 1980 to 2003, examined the impact of FDI on export growth in Cameroon. Results indicate that high FDI inflows contribute to higher export growth through increasing supply-side capacity. Using a similar methodology, Lee (2007) investigated the impact of lagged FDI on export growth in Taiwan for the period 1952 to 2005. They find a one way causality running from FDI to export growth.

The advantage of FDI in developing countries like Zimbabwe is the lower marginal costs of exporting. However, in many developing countries, the disadvantage is that FDI is irreversible and hence entails the risk of creating under-utilized capacity in case the market turns out to be small. A good example of irreversible investment in Zimbabwe is the platinum processing plants near Norton town which turned out to be white elephants after costly fixed investments. Haq (2012) examined the impact of FDI on exports of Pakistan using times series data for the period of 1980 to 2011. The study indicate that FDI is related to exports growth. Ndoricimpa (2009)

employed a heterogeneous panel causality approach to examine the linkage between FDI and export growth for the period 1983 to 2007. They used the Common Market for Eastern and Southern Africa countries in which Zimbabwe is a member and their results indicate that FDI inflows have a strong effect on export growth. An estimation of the possible effects of FDI inflows on exports in 12 Central and Eastern European economies was carried out by Kutun and Vuksic (2007) using the Generalized Least Square method on pooled data over the period 1996 to 2004. They separated the effects of FDI into supply capacity-increasing effects and FDI specific effects. The supply capacity effects are said to occur when the production volume and export supply capacity increase due to rising FDI inflows. This has not occurred in Zimbabwe where manufacturing capacity utilization is at 43 percent. The FDI-specific effects emerge because the multinationals may have superior knowledge and technology, better and reliable information about export markets than do firms operating domestically.

The findings by Kutun and Vuksic (2007) indicate that for all their sampled countries, FDI has increased domestic supply capacity and exports. Thus, FDI can lead to higher exports growth by increasing production and supply capacity and/or FDI-specific effects. This is due to the fact that MNEs like BHP, Coca Cola and Lonrho Plc operating in Zimbabwe are informational efficient about the state of foreign export markets. According to Shan et al (1997), FDI increases productivity in the recipient countries, a major catalyst for encouraging domestic investment and technical progress. Petri and Plummer (1998) argued on the causality of the two; whether FDI causes exports or exports cause FDI. Kijima (1973) also analysed whether FDI was trade oriented or anti trade oriented and concluded that the former was true.

Vernon (1966) explored whether FDI is at the early product life cycle stage (substitute) or at the mature stage (complement). Zenegaw (2010) asserts that where capabilities are weak and static, FDI may well lead only to a short-lived hump in export performance. Further, arguments put forward by Huang (2003) and Rudolph (2006) indicate that giving significance to FDI inflows alone will not lead to any benefits for the domestic manufactures. Instead they claim that FDI would start to give the contradictory results through the contraction of the domestic manufactures. Balasubramanyam and Sapsford (2006) argue that even though FDI is not a solution to economic development in many developing countries, it catalyses the economic growth process through technology and skills transfer. Demekas et al. (2007) noted that FDI inflows for export production are based on relative endowments, attracted by factor cost differentials and repelled by trade costs. Achandi (2011) using an Error Correction Model, studied FDI and exports growth in Uganda, without using trade intensity indicators such as trade openness, found a positive and significant impact of FDI on export growth.

Gu et al., (2008) examined the contribution of FDI on China's export performance using the evidence from disaggregated sectors over the period 1995 to 2005 and find FDI inflows had significant and positive effects on Chinese exports. However, this study was carried out for manufacturing sectors only leaving other sectors such as the mining sector and agriculture sector. Sultan (2013) employed the Granger causality and used the Vector Error Correction Model to examine the association between FDI inflows and Indian exports from 1980 to 2010. The study found FDI and exports to have a stable long run relationship. The empirical results show that there was no causality from FDI to exports but exports Granger caused FDI over the period under consideration. However, in the short run results show that both FDI and exports were not causing each other. Sharma (2000) using simultaneous equation model investigated the factors that affect export performance in India employing annual data from 1970 to 1998. The study used Two Stage Least Squares procedure after detecting the simultaneity bias through the use of



Hausmann specification test. Unlike Sultan (2013), FDI was observed to have no statistically significant effect on Indian exports even though the coefficient was positive. Similarly, Nguyen et al., (2012) investigated the linkage between FDI and trade in Vietnam using panel and time series data over a period of 1992 to 2006. They find that FDI and exports in Vietnam had no relationship. Khan and Najam (1993) analysed the nexus between exports and economic growth in a number of countries and found a significant relationship between exports and economic growth. Fosu (1990) using a pooled cross-sectional time series estimation, examined the impact of export growth on economic growth in 28 countries in Africa. They applied a production function consisting of labour, capital formation and exports and found export growth having a positive and significant impact on economic growth.

In examining a causal relationship between exports and economic growth, Chow (1987) find a strong causality between the growth and exports in newly industrialised countries. However, UNCTAD (1998) is sceptical about these findings citing that export earnings in developing countries do not contribute much since the same countries need to import capital and other consumption goods that are not locally available. In support, Ernst et al. (1998) also observe that FDI plays a weak role in cases where local firms have good capabilities that enable them to undertake subcontracting at lower costs to consumers.

According to Bhaduri and Ray (2004), foreign firms are more successful in exporting than domestic firms. In globalised world, Prasarma (2009) points out that success in growing exports signals the competitiveness of a country's industries and lead to faster economic growth. This is because multinational firms bias their fixed investments towards exports (OECD, 1998). According to the proximity concentration hypothesis, higher trade barriers and transportation cost lead to horizontal cross border production expansion resulting in high transaction costs (Krugman, 1983; Hostmann and Markinson, 1992; Brainard, 1993, 1997). FDI allows for technology and knowledge transfer which may ultimately increase productivity growth in the economy (De Gregorio (2003). The very nature of the activities of multinational firms in Mexico encouraged the expansion of its industrial exports (Rodriquez, 1996) and Ram, 1996)

Alguacil (2002) concluded that the involvement of foreign firms had a higher export propensity than local firms and suggested that a type of FDI -led export growth linkage of India and the world economy is being fostered by the export orientation of foreign firms. Calov et.al (1996) in his empirical study has observed that in many developing countries current account deficit has coincided with the inflow of FDI. Similarly, UNCTAD (2002) unambiguously mentions that an unregulated inflow of FDI could lead to serious balance of payments problem primarily because of excessive imports by multinationals and repatriation of profit. This paper departs from existing literature by arguing that developing countries stifle export growth through dollarization, failing to sequence financial and trade liberalisation properly and over-dependency on FDI inflows instead of developing domestic resource mobilisation strategies. FDI inflows in this respect should come only to augment domestic savings rather than being a panacea for export-oriented productivity.

## **METHODOLOGY**

### **Empirical Model Specification**

The Kutan and Vuksic (2007) model was modified to suit the Zimbabwean situation under study. The model to be estimated is as follows:

$$EXP_t = \beta_0 + \beta_1 FDI_t + \beta_2 FDI_{t-1} + \beta_3 EXP_t + \beta_4 GDP_t + \beta_5 TOPE_t + V_t$$

$EXP_t$  – exports

$FDI_t$  – foreign direct investment inward flows

$FDI_{t-1}$  – one year lagged foreign direct investment inward flows

$EXP_{t-1}$  – one year lagged exports

$GDP_{t-1}$  – one year lagged real gross domestic product

$TOPE_t$  – trade openness

$V_t$  – random disturbance term

### Justification of Variables

Exports of goods and services ( $EXP_t$ ) is the dependent variable explained by one year lagged values ( $EXP_{t-1}$ ), Foreign Direct Investment ( $FDI_t$ ), lagged values of FDI ( $FDI_{t-1}$ ), trade openness ( $TOPE_t$ ) and the lagged values of gross domestic product ( $GDP_{t-1}$ ).

### Exports $EXP_t$

Exports are goods and services that are produced in a country and sold or traded to other countries. This variable is the dependent and the rationale of its inclusion in the model is to represent the export growth of a country as it reflects how exports are changing yearly. Thus, it is measured as exports of goods and services as a percentage of gross domestic product (GDP).

### Lagged Exports $EXP_{t-1}$

Exports from the previous year are a control variable because the export performance in one year can be used to predict the next year's exports (Njong and Tchakounté, 2011). Therefore, the lagged exports is expected to bear a positive sign.

### Foreign Direct Investment $FDI_t$

These are financial investments made to obtain a lasting ownership interest in firms operating outside the economy of the investor and this may involve purchasing existing assets or building new production facilities (McConnel *et al.*, 2009). The current FDI is included to see if its spillover effects and the supply capacity effects changes the export performance of a country instantaneously. Since FDI is seen to increase the export performance of a nation in various ways, we expect the sign to be positive. FDI inward flows in million US dollars are used as a measure for FDI.

### Lagged Foreign Direct Investment $FDI_{t-1}$

The lagged FDI enters the model as a measure for cumulated stock of FDI. This variable was used by Njong and Tchankont'e (2011) and Kutan and Vuksic (2007) following the suggestion by Girma *et al* (2007). There is an assumption that the process of constructing a new factory takes some time even for the export-oriented foreign investments. Therefore, there arise the need to include the stock of FDI as an explanatory variable which is expected to have a positive sign. The impact of FDI on export growth are not likely to be felt immediately.

Modernization of production facilities, dissemination of new production technologies, and other changes normally have a lagged effect. We thus include lagged value of exports/import to reflect this delayed impact (see Coughlin & Cartwright, 1987).

### **Lagged Gross Domestic Product $GDP_{t-1}$**

In order to capture the supply capacity of the economy, GDP is adopted as a proxy variable. An increased supply capacity of the economy will enhance the export performance, *ceteris paribus*. GDP was adopted as an explanatory variable for export growth following the study by Achandi (2011) and this is to deviate from the studies carried by Lee (2007), Kutan and Vuksic (2007) and Njong and Tchankont'e (2011) who used the potential GDP (trend of real GDP) to take supply capacity into consideration. Therefore, the variable is measured in United States dollar values and the priori expectation sign of GDP is positive.

### **Trade Openness $TOPEN_t$**

Exports are promoted through trade openness as the strong anti-export biases brought about by the quantitative restrictions and tariffs will be eliminated. Openness index is measured as the total international trade (Exports plus Imports) ratio on total value of net output (gross domestic product) (Squalli and Wilson, 2006). The rationale of including the variable is that it determines how integrated or open an economy to world trade is. This variable is regarded as an essential factor in Flying Geese Model of FDI - export relationship and is expected to have a positive sign.

## **PRESENTATION AND INTERPRETATION OF RESULTS**

### **Descriptive Statistics**

According to Appendix A, all variables are positively skewed and variables GDP\_1, FDI and FDI\_1 have large variations and EXP01, EXP\_1 and TOPEN have small variations as shown by their standard deviations. Three variables, EXP01, EXP\_1 and GDP\_1 are normally distributed and according to the Jarque-Bera test, FDI, FDI\_1 and TOPEN are not normally distributed. Multicollinearity tests are as per appendix B The correlation matrix shows that the independent variables are not highly intercorrelated since the zero-order correlation coefficients in the table are below 0.8. Thus, the explanatory variables are not moving in a systematic way and their separate effects on the dependent variable can easily be separated. Appendix C shows the unit root tests. Only one year lagged Foreign Direct Investment ( $FDI_{t-1}$ ) was stationary at level and at 1% significance level. Other variables namely Exports ( $EXP_t$ ), one year lagged Exports ( $EXP_{t-1}$ ), current FDI ( $FDI_t$ ) and lagged Gross Domestic Product ( $GDP_t$ ) and Trade Openness ( $TOPEN_t$ ) were not stationary at their levels. As per Appendix D, after first differences, current period Exports ( $DEXP$ ), lagged Exports ( $DEXP_1$ ), current period FDI ( $DFDI$ ) and lagged GDP ( $DGDP_1$ ) became stationary at 1% level of significance and integrated of order one [I(1)]. Trade Openness ( $DTOPEN$ ) became stationary after two differences at 1% level of significance. Thus the model was specified as follows as:

$$DEXP_t = \beta_0 + \beta_1 DFDI_t + \beta_2 FDI_{t-1} + \beta_3 DEXP_{t-1} + \beta_4 DGDP_{t-1} + \beta_5 DDTOPEN_t + V_t$$

Appendix E shows the regression model output. The coefficient of determination R-squared and adjusted R-squared are 0.817236 and 0.779160 respectively indicating that 81.7% of the variations in Export growth are explained by the independent variables. R-squared is close to one and this indicates that the model has a greater predictive ability and it fits the data well. The model is significant at 1% level since F-statistic probability value is 0.000000 which is less than 0.01. Durbin-Watson statistic is 1.984009 which shows that there is no autocorrelation. FDI and one year lagged FDI coefficients are positive and statistically significant at 1% and 10% level, respectively. This indicate that a unit increase in FDI and one year lagged FDI inflows would result in 0.01 unit increase in export growth. The results are consistent with prior expectation and empirical literature (see for example Lee (2007), Kutan and Vuksic (2007), Njong and Tchankont'e (2011) and Achandi (2012). Lagged exports was found to have the expected positive sign and significant at 5% level indicating that increased previous year exports would lead to increased current export performance in Zimbabwe. The coefficient of lagged exports is 0.349442 implying that a unit increase in previous year exports lead to an increase in current exports by at least 35 Percent. The relationship between trade openness and export growth was empirically found to be positive with a coefficient of 29.63225. The variable is significant at 1% level of significance since its calculated probability variable is less than 0.01. These results show that increased openness of the economy will lead to increased export growth in Zimbabwe. The results on domestic product was found to be insignificant and therefore does not confirm that GDP affects export growth.

## CONCLUSION AND POLICY RECOMMENDATIONS

It is recommend that government should initially stimulate domestic savings and also create a conducive investment climate that does not scare foreign capital in order to improve export growth. The country should further diversify its export base from over reliance on primary commodities by beneficiating high valued exports in order to gain huge returns in international markets. Zimbabwe's exports are uncompetitive due to high production costs and an over-valued dollarized currency. Zimbabwe may need to bring back its own currency so as to enable the government to control monetary and fiscal policies especially those instruments which affect export growth.

## Appendix A

**Table 1: Summary of Descriptive Statistics**

	EXP01	EXP_1	GDP_1	FDI	FDI_1	TOPEN
Mean	31.1713	30.1708	6442.24	63.025	50.9359	0.68625
Median	32.116	31.2772	6205.51	24.55	21.1	0.69175
Maximum	53.8147	47.6373	8785.9	444.3	444.3	1.49586
Minimum	16.4429	16.4429	4032.31	0.8	0.15	0.35917
Std. Dev.	9.02572	8.16846	1396.78	102.665	84.4451	0.25745
Skewness	0.36184	0.11576	0.23147	2.67275	3.37805	1.21299
Kurtosis	2.66703	2.03144	1.90222	9.73217	15.8961	4.70069

Jarque-Bera	0.84612	1.32229	1.89256	98.5286	282.607	11.7036
Probability	0.65504	0.51626	0.38818	0	0	0.00288
Observations	32	32	32	32	32	32

## Appendix B

**Table 2: Correlation Matrix**

	EXP_1	FDI	FDI_1	GDP_1	TOPEN
EXP_1	1				
FDI	0.56556	1			
FDI_1	0.60808	0.41804	1		
GDP_1	0.39947	0.10367	0.3214	1	
TOPEN	0.78088	0.7023	0.43493	0.01908	1

## Appendix C

**Table 3: Results of Unit Root Test in Levels**

Variables	t-ADF	Critical - 1%	Critical - 5%	Conclusion
EXP	0.93253	-2.641672	-1.952066	--
EXP_1	1.028868	-2.644302	-1.952473	--
FDI	-1.609422	-2.641672	-1.952066	--
FDI_1	-2.779662**	-2.641672	-1.952066	I(0)
GDP_1	-0.196729	-2.644302	-1.952473	--
TOPEN	1.860789	-2.641672	-1.952066	--

\*\* implies stationary at 1%, \* implies stationary at 5% significance level and I(·) shows order of integration. The Software E-Views 7 was used.

## Appendix D

**Table 4: Results of Unit Root Test in First Differences**

Variables	t-ADF	Critical - 1%	Critical - 5%	Conclusion
DEXP	-6.292453**	-2.644302	-1.952473	I(1)
DEXP_1	-7.267715**	-2.644302	-1.952473	I(1)
DFDI	-6.763188**	-2.644302	-1.952473	I(1)
DGDP_1	-3.652383**	-2.644302	-1.952473	I(1)
DTOPEN	-0.335591	-2.650145	-1.953381	--

*D* means First Differences

## Appendix E

**Table 5: Summary of Regression Results**

Dependent variable: DEXP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.17787	0.539458	-0.32972	0.7445
DEXP_1	0.349442	0.131612	2.655088	0.0139
DFDI	0.01514	0.004895	3.09295	0.005
FDI_1	0.010833	0.006115	1.771585	0.0892
DGDP_1	-0.00099	0.000962	-1.03244	0.3122
DDTOPEN	29.63225	3.63637	8.148854	0.0000

*R-squared* 0.817236      *F-statistic* 21.46334  
*Adjusted R-squared* 0.779160      *Prob (F-statistic)* 0.000000  
*Durbin-Watson stat* 1.984009

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