Vol. 15(1), pp. 1-9, September 2023
DOI: 10.5897/BOJE2022.0007
Article Number: 1B489F371284
ISSN: 1810-0163

http://www.academicjournals.org/BOJE

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Botswana Journal of Economics
A Journal of the Botswana Economics Association

Review

Export diversification and economic growth: Evidence from Zimbabwe

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Received 1 November, 2022; Accepted 25 August, 2023

This paper employed the Auto-Regressive Distributed Lag (ARDL) model to examine the effects of export diversification on economic growth using Zimbabwe's annual time series data for the period 1995 to 2020. The Herfindahl index (HI) was used as a measure of export diversification. The control variables included are; capital, labour, direct investment, GDP per capita, the number of export products and secondary school enrolment. The empirical findings showed that export diversification impacts positively on GDP growth in Zimbabwe. The study recommended that Zimbabwe should continue to diversify its exports in order to sustain long-term economic growth. Export diversification will allow Zimbabwe to stabilize its export earnings and hedge against volatile international commodity prices. This is important for achieving Zimbabwe's objectives of stable long-term growth, job creation, stable export earnings and also attaining its long-term goal of being an upper middle income country by 2030.

Key words: Exports, export diversification, economic growth, Auto-Regressive Distributed Lag (ARDL), Southern Africa Development Community, Zimbabwe.

INTRODUCTION

Literature has a well-established argument that countries with strong export performances are more likely to realize faster gross domestic product (GDP) growth and improved living standards (Lewer and Van den Berg, 2003). This is because such countries get involved in the international division of labour and have access to the latest technologies which increases their productivity and success in the export markets (Anderson et al., 2008). Many developing nations such as Zimbabwe have therefore resorted to the export diversification strategy with the aim of developing their productive sectors to produce value-added products. This allows them to achieve many of their objectives including: high GDP growth, stable export earnings, a favorable balance of payments position, and job creation, redistribution of income and development of new skills and infrastructure, (Al-Marhubi, 2000; Meilak, 2008; Loayza et al., 2007; World Bank, 1999; Ghosh and Ostry, 1994; Bleaney and Greenaway, 2001). Zimbabwe is one of the major exporting countries in the Southern African Development Community (SADC) region. Its GDP is about US$20 billion according to the Zimbabwe Statistics Agency (Zimstat). According to the Ministry of Finance and Economic Development (MFED), (2020), exports increased from about 20.3 percent of GDP in 2017, to 36 percent in 2019 and then declined to 27.2% in 2020.

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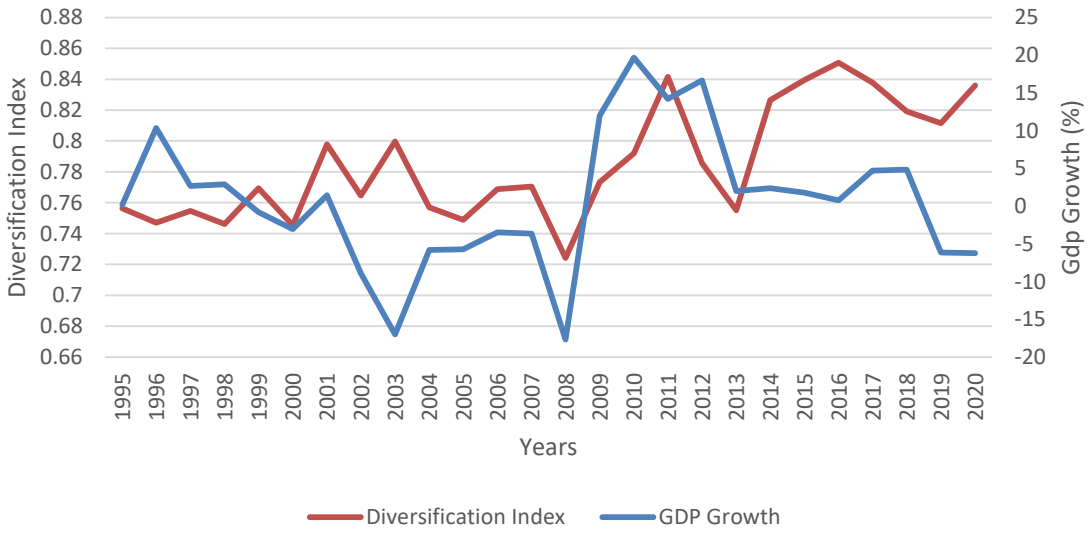

Figure 1. Zimbabwe's GDP growth and diversification index 1995 to 2020.
Source: Author.

The country mainly relies on extractive export products. In 2020, its top ten export products were mainly minerals and mineral related commodities such as; gold, nickel, chrome, diamonds and platinum. The remainder comprised of unmanufactured tobacco and cane sugar. The primary exports products accounted for US$3.210 billion out of the US$4.39 billion total exports receipts, representing about 73% of total exports.

Zimbabwe's primary product exports are subject to price fluctuations, low demand and hence are vulnerable to adverse international prices (Zimbabwe Economic Policy Analysis Research Unit, 2018). Zimbabwe's main export customers are South Africa, Mozambique, Uganda, United Arab Emirates and the European Union (EU). By diversifying into value-added export products, Zimbabwe can expand its market into other regional and developed markets thus further boosting the country's export revenues.

Figure 1 shows Zimbabwe's export diversification index (DVI) and GDP growth rate trends. It shows that Zimbabwe's exports are less diversified as they are concentrated in a narrow basket of mineral and agricultural goods. Zimbabwe's DVI is far from zero due to its heavy dependence on the exportation of raw mineral and agricultural products. Its average DVI was on a downward trend (improving) between 2003 and 2008. Between 2008 and 2010 the DVI was on an upward trend (declining). It was again on a downward trend (improving) during the government of national unity (GNU) period, between 2009 and 2013. The average DVI again increased between 2014 and 2020 indicating a reversal of export diversification.

Zimbabwe's GDP growth has been low and volatile due to a number of factors that include among others; shortages of foreign currency, high interest rates, exchange rate volatility, natural disasters like droughts and more recently the negative effects of the Covid-19 pandemic (MFED, 2020). These factors contributed to the underperformance of Zimbabwean firms. Zimbabwe experienced recession in 2019 and 2020. In 2020, it recorded a negative GDP growth rate of 8.0%, which was a 0.1% increase from the 2019 GDP growth rate.

Zimbabwe's low GDP growth rate is a concern to policymakers, thus through the National Development Strategy 1, 2021-2025 (NDS1), the government seeks to promote value-addition and beneficiation. During the NDS1 period, Zimbabwe intends to increase the contribution of its value added exports to total exports from 9 percent in 2020 to 20 percent by 2025. This is to be achieved through the strengthening of value addition of mining and agricultural products as well as capacitating the manufacturing sector. According to the MFED (2020), export diversification will help Zimbabwe achieve many of its macroeconomic objectives such as; achieving high GDP growth, satisfactory balance of payments, creating at least 760 000 formal jobs, increasing per capita income to about US$3 200 by 2025, hedging against negative trade shocks by stabilizing export incomes, stabilizing the foreign exchange rate and reducing extreme poverty.

There is a huge amount of empirical studies that have found support for the export diversification-led growth hypothesis. The argument is that export diversification provides a viable option for developing nations to enhance GDP growth. The main implication is that policymakers can use export diversification as a source of growth. This has appealed to many developing nations including Zimbabwe. The problem for Zimbabwe however, is that our search of the literature indicates that no empirical study has been undertaken on the link

between GDP growth and export diversification. This has therefore motivated us to undertake this study. This study therefore seeks to examine the link between export diversification and economic growth in Zimbabwe. It adds to the growing list of empirical studies in this area. It also generates useful policy recommendations that are critical to Zimbabwe's policymakers and other stakeholders. Verification of the export diversification-led growth hypothesis will for example assist policymakers with information to design better export strategy policies for the country.

This paper is structured as follows: Section 2 provides a brief review of the relevant theoretical and empirical literature. Section 3 discusses the empirical model and data sources. Section 4 focuses on the estimation procedure. Section 5 presents and discusses the empirical findings. Finally, Section 6 provides the paper's conclusions and policy recommendations.

LITERATURE REVIEW

Theoretical literature review

Many developing nations are characterized by low demand which limits their growth prospects. Exports are a viable channel by which developing nations can boost their long term growth. The problem is that many developing nations depend on a narrow export basket of mainly primary products which exposes them to export revenue instability and volatile international prices. Export diversification provides a viable option for developing nations to enhance their GDP growth as well as increase the range of exports to international markets. It appeals to developing nations due to its prospects of achieving long-term growth. Economic models emphasize that countries relying on primary exports should diversify into industrial exports in order to achieve growth (Chenery, 1979; Syrquin, 1989). The IMF (2014) argues that export diversification makes developing nations resilient to shocks and allows them to achieve growth. According to the Prebisch-Singer theory, export diversification prevents the weakening of trade relations among developing nations.

Herzer and Nowak-Lehman (2006) argue that diversification enhances growth by reducing reliance on a limited range of primary products.

According to Al-Marhubi (2000) export diversification simply refers to a diversified export structure. Osakwe and Kilolo (2018) argue that export diversification is the spread of exports over various commodities and trading customers. This involves a change in export structures by widening a country's export basket; increasing its export incomes through improved technology and innovation. Economic literature distinguishes between two types of export diversification, namely vertical and horizontal. Vertical diversification refers to diversification in the same filed while horizontal diversification is diversification among different industries. Vertical diversification involves the structural transformation from primary products to industrial products due to improved technological innovations (Agosin, 2009; Chenery, 1979; Syrquin, 1989). On the other hand, horizontal export diversification involves venturing into new areas of primary exports (Herzer and Nowak-Lehnmann, 2006) to reduce the economic demerits and political risks. Both vertical and horizontal export diversification contribute to growth.

Theoretically, there are various ways by which export diversification enhances growth. Firstly, export diversification leads to higher export incomes in case of volatile international prices. Expanding a country's export basket reduces a country's dependence on a narrow range of export products. This also allows a country to hedge against adverse terms of trade shocks by stabilizing export incomes and output. Since developing nations mainly export a limited range of primary products they usually suffer from volatile market prices leading to fluctuations of their export incomes. This increases uncertainty of other macroeconomic variables which is detrimental to growth. Export diversification stabilizes export incomes and increases purchasing power leading to higher levels of investment and GDP growth (Ghosh and Ostry, 1994; Bleaney and Greenaway, 2001).

Secondly, diversifying exports is often associated with technology transfer that leads to higher productivity. Developing nations usually lack the technology to venture into the production of value-added products which they can add to their export basket. Developed nations have superior technology which can be accessed by developing nations through export diversification. Diversifying exports provides a learning opportunity via the introduction of new export products. It results in knowledge spillovers from new production techniques, new management, or marketing practices from the developed world which benefit developing nations industries (Amin Gutierrez de Pineres and Ferrantino, 2000). Finally, diversifying exports in new industries boosts growth in other industries. This widens the production structure towards value-added export products, which prevents the declining terms of trade and support stable export incomes. Expansion into new industries boosts the country's investment levels leading to higher growth.

Empirical literature review

There are numerous empirical studies that focus on the link between export diversification and economic growth. These studies generally use growth equations and regress either GDP per capita income or GDP growth against various measures of export diversification. They include control variables such as; capital, labour, number of exports, trade openness, real exchange rate, rule of

law, etc. Estimations techniques include among others; the ordinary least squares (OLS) technique, the generalized method of moments (GMM) and the ARDL technique. Many of the empirical studies have found evidence in support of a positive relationship between export diversification and growth. They generally conclude that export diversification has implications for macroeconomic variables like; GDP growth, job creation, favorable balance of payments, poverty reduction and rising investment (Agosin, 2007; Herzer and Nowak-Lehnmann, 2006).

A study by Guitierrez de Pineres and Ferrantino (2000) established that in Latin America export diversification promotes growth. Feenstra and Kee (2004)'s study using data from 34 countries found that export diversification promotes productivity growth. Lederman and Maloney (2007) also found evidence in support of the export diversification-led growth hypothesis. In East Asia, Yokoyama and Alemu (2009) found that export diversification enhances growth. Al-Marhubi (2000) examined the effects of export diversification on growth on a cross-section sample of 91 developing nations using the OLS technique. He found that export diversification enhances growth. Agosin (2007) studied the impact of export diversification on growth using Asian and Latin American nations' cross-sectional data for 1980 to 2003. He found a positive link between export diversification and growth. In Spain, Balaguer and Cantavella-Jorda (2004) found that export diversification has impact on per capita income. In Chile, Herzer and Nowak-Lehnmann (2006) found that export diversification enhances growth. Arip et al. (2010) found that export diversification enhances growth in Malaysia. Hodey et al. (2015) employed the system GMM estimation technique to analyze the relationship between export diversification and growth in 42 African countries. They found a positive link between export diversification and growth. Studies by Matadeen (2011) and Sannasse et al. (2014) for Mauritius established that export diversification promotes growth. In the Economic Community of West African States (ECOWAS), Amoro (2020) established that export diversification also promotes growth.

Some empirical studies especially from African countries have found mixed evidence on the export diversification-led growth hypothesis. Yokoyama and Alemu (2009) found that export diversification has an insignificant impact on growth in Sub-Saharan African (SSA) states. In Nigeria, Nwosa et al. (2019) found that export diversification had a positive but insignificant impact on growth for the period 1962 to 2016. Doki and Tyokohol (2019) also found a positive but statistically insignificant link between export diversification and growth in Nigeria. In Cote d'Ivoire, Coulibaly and Akia (2019) found that Cote d'Ivoire's export basket and the diversification index negatively impacts on growth both in the short run and long run. Guitierrez de Pineres and Ferrantino (2000) found that export diversification positively impacts per capita income using panel data but found no evidence in support of the diversification-led hypothesis in Columbia and Chile using time series data. The mixed empirical results on the export diversification-led growth hypothesis create an opportunity for further empirical examination.

Empirical model and data sources

This study uses the neoclassical growth model in examining the relationship between economic growth and export diversification in Zimbabwe. It employs an augmented Solow growth model in line with similar studies (Mankiw et al., 1992; Hesse, 2008; Hodey et al., 2015). The augmented Solow equation can be specified as:

$$Y = AK(K, L) \quad (1)$$

where Y is GDP growth rate, K is the stock of capital, L is the amount of labour and A is the level of technology that is exogenously determined. Though most empirical studies have used panel data, we use Zimbabwe's annual time series data for the period 1995 to 2020. Following the theoretical established relationships and empirical studies we specify our equation as:

$$y_t = x_t\beta + \varepsilon_t \quad (2)$$

where y_t is the real gross domestic product (GDP) growth rate, x_t is a parameter of explanatory variables that includes export diversification and ε_t is the error term and that is $\varepsilon_t \sim IID(0, \delta_\varepsilon^2)$. After inserting the variables represented by matrix, x_t, our empirical model becomes:

$$GDPGR_t = \alpha_0 + \alpha_1 DVI_t + \alpha_2 K_t + \alpha_3 L_t + \alpha_4 DI_t + \alpha_5 EXP_t + \alpha_6 SSE_t + \alpha_7 RGDP_t + \varepsilon_t .. \quad (3)$$

where is $GDPGR_t$ is Zimbabwe's real annual GDP growth, DVI_t is export diversification index, K_t is capital (proxied by gross fixed capital formation), L_t is labour (proxied by population growth), DI_t is direct investment net inflows (% of GDP), EXP_t is the number of export products, SSE_t is gross secondary school enrolment, $RGDP_{it}$is real GDP per capita growth.

In regression equation (3), our key variable of interest, DVI_t is measured using the Hirshman index. This index measures the deviation of the share of exports of Zimbabwe's major products in its total exports from the share of national exports of those major products in world exports. The index ranges from 0 to 1. The closer the index is from zero, the higher is the variation in exports. We expect a positive sign for DVI_t's coefficient. The control variables are informed by both theoretical and empirical literature. Capital is proxied by government and private sector investment. This refers to the acquisition of

Table 1. Descriptive Statistics, 1995 to 2020.

Variable	Mean	Stand Dev.	Maximum	Minimum	Expected sign
GDPGR	0.69	9.03	19.68	-17.67	N/A
DVI	0.79	0.04	0.85	0.72	+
DI	1.56	1.40	6.94	0.06	+/-
SSE	45.39	3.13	52.41	39.98	+
K	10.77	5.49	20.75	1.53	+
EXP	1934.73	612.81	2840.00	1322.00	+
L	1.07	0.51	1.78	0.23	+/-
RGDP	1400.05	264.13	1784.92	849.61	-

Table 2. Correlation matrix for the variables.

Variable	GDPGR	DI	DIV	SSE	K	EXP	L	RGDP
GDPGR	1.000							
DI	0.288	1.000						
DIV	0.236	0.062	1.000					
SSE	0.239	0.043	0.414	1.000				
K	0.592	0.373	-0.048	-0.258	1.000			
EXP	-0.213	-0.012	-0.621	-0.561	0.381	1.000		
L	0.528	0.355	0.523	0.561	0.255	-0.556	1.000	
RGDP	0.146	0.247	0.009	0.128	0.505	0.529	-0.045	1.000

new capital goods, new plant and equipment used in production by the government and the private sector. Labour is proxied by Zimbabwe's annual population growth. We expect a positive sign for the coefficients of these variables. DI_t is net direct investment inflow into Zimbabwe. We expect a positive or negative sign for DI_t's coefficient.

Finally, the authors expect positive signs for the coefficients of EXP_t, SSE_t and $RGDP_t$. They used Zimbabwe's annual time series data for the period 1995 to 2020. The data were obtained from two sources namely, the World Integrated Trade Solution (WITS) and World Development Indicators. Data for the DVI_t, and EXP_t was obtained from the WITS while data for all other remaining variables was sourced from the World Bank development indicators.

Estimation procedure

Table 1 shows the descriptive statistics for all variables used during estimations for the period 1995 to 2020. The mean and standard deviation values for the dependent variable, *GDPGR* are 0.69 and 9.03%, respectively. Zimbabwe experienced an average GDP growth rate of 0.69% characterized by episodes of positive and negative growth. Its GDP growth rate ranged from -17.67 to 19.68%. Zimbabwe's real GDP per capita was US$1 400.

Its minimum and maximum real GDP per capita were US$849.61 and US$1 784.92, respectively.

Zimbabwe's average *DVI* was 0.79. This signifies some level of diversified exports though exports seem to be concentrated on raw products over time. The standard deviation indicates that *EXP* (612.81) was the most volatile variable while *DVI* (0.04) was the least volatile variable. Reflecting a decrease in the number of exported products, *EXP* averaged 1 935. It reached a maximum of 2 840 products and declined to a minimum of 1 322 products. This represents a 53 percent decline in the number of exported products from Zimbabwe between 1995 and 2020.

We subjected the data to some diagnostic tests to ensure that the estimated model does not give spurious results. The multi-collinearity test results are presented in Table 2. The results indicate that multi-collinearity is not a problem as all the values in the matrix are below 0.8.

The examination of the order of integration of the variables was conducted using the Augmented Dickey-Fuller (ADF) and Philips-Peron tests. The results are presented in Table 3. The variables DI and RGDP were stationary in levels, implying they were I(0) series. All the remaining variables became stationary after first differencing, implying that they were I(1).

Since the unit root test results show co-integration among the variables, estimation can be done in levels using the Ordinary Least Squares (OLS) technique. This will however only present the short run dynamics of the variables which contradict the variables' original behavior

Table 3. Unit root test results.

Variable	Level		First difference		Conclusion
	ADF statistical	Result	ADF statistical	Result	
DVI		No stationary		Stationary	I(1)
DI		Stationary			I(0)
SSE		No stationary		Stationary	I(1)
EXP		No stationary		Stationary	I(1)
GDPGR		No stationary		Stationary	I(1)
K		No stationary		Stationary	I(1)
L		No stationary		Stationary	I(1)
RGDP		Stationary			I(0)

Unit root result: Provide numerical values for p-value and ADF statistical.

Table 4. ARDL Bound Co-integration test results.

Critical values (%)	F-Statistic: 115.2391	
	Lower bound	Upper bound
1	4.10	6.15
5	2.88	4.45

Table 5. Heteroscedasticity test results.

F-Statistic	0.887938	Prob. F(8, 17)	0.5465
Obs*R-squared	7.662418	Prob. Chi-Square (8)	0.4671
Scaled explained SS	4.796547	Prob. Chi-Square (8)	0.7791

of a long run relationship. The fact that our variables are I(0) and I(1) validates the application of the Auto-Regressive Distributed Lag (ARDL) model. We therefore applied the ARDL model to examine the short run and long run dynamics of the variables. The ARDL technique allows for the simultaneous estimation of the short run and long run dynamics of the model. The generalized ARDL(p,q) model can be specified as:

$$y^{'} = \gamma_{0,j} + \sum_{i=1}^{p} \delta y_{t-1} + \sum_{t=1}^{q} \beta^{'} x_{t-1} + \varepsilon_{j,t} \quad (4)$$

where $\gamma^{'}$ is a vector and the variables in x_t are allowed to be purely I(0) or I(1) integrated or co-integrated; $\beta^{'}$ and δ are coefficients; $\gamma_{0,j}$ is the constant; *j = 1……k; p,q* are operators; and $\varepsilon_{j,t}$ is the error term (zero mean and independent). In Equation 4, *p* lags are used for the dependent variable and the *q* lags are used for the exogenous variables.

In order to determine the long run relationship among the variables, we employed the Pesaran et al. (2001) bound test procedure. The ARDL bound test results presented in Table 4 indicate that the F-statistic is greater than the upper bound critical value at 5%. This indicates that there is integration among the variables. The null hypothesis can therefore be rejected. We conclude that there is a long run relationship between the dependent variable (GDPGR) and the different explanatory variables during the study period.

Finally, a heteroscedasticity test was conducted using the Breusch-Pagan-Godfrey test. The results presented in Table 5 indicate that the probability value (Chi-Square) is greater than 0.05. it was concluded that the data is homoscedasticity. Hence, the data is good for regression.

EMPIRICAL FINDINGS

The relationship between the dependant variable (GDPGR) and the various explanatory variables was estimated in levels for the period 1995 to 2020. The ARDL estimation technique simultaneously estimates the short run and long relationships. Table 6 presents the estimated results. The F-statistic value (110.1772 (0.0000)) is statistically significant at the 1% level of significance. Hence, the model is appropriate and the

Table 6. ARDL estimated results.

Dependant variable: GDPGR (annual %)				
Estimated short run results				
Variable	**Coefficient**	**Std. error**	**t-Statistic**	**Prob. value**
DIV	32.8022**	14.7835	2.2188	0.0465
GDPGR(-1)	-0.0568	0.0609	-0.9316	0.3699
RGDP	77.3199***	4.4573	17.3466	0.0000
RGDP(-1)	-76.7659***	6.0241	-12.7432	0.0000
EXP	2.1967**	0.9336	2.3529	0.0365
EXP(-1)	-2.2538**	0.8419	-2.6770	0.0201
L	10.12531	8.6918	1.1649	0.2667
L(-1)	-13.1926	8.1803	-1.6127	0.1328
K	0.4549**	0.1118	4.0698	0.0016
DI	-0.4939**	0.1378	-3.5838	0.0038
SSE	0.2258	0.1361	1.6587	0.1231
SSE(-1)	0.3164**	0.1394	2.2698	0.0425
C	-50.1585**	18.1547	-2.7628	0.0172
Estimated long run results				
Variable	**Coefficient**	**Std. error**	**t-Statistic**	**Prob. value**
DIV	31.0403*	14.3704	2.1600	0.0517
RGDP	0.5243	5.0294	0.1042	0.9187
EXP	-0.0540	1.5272	-0.0354	0.9724
L	-2.9025**	1.0887	-2.6659	0.0206
K	0.4305***	0.0945	4.5541	0.0007
DI	-0.4674**	0.1200	-3.8954	0.0021
SSE	0.5131**	0.2200	2.3319	0.0379
DIV	31.0403*	14.3704	2.1600	0.0517
R-squared	0.9910			
Adjusted R-squared	0.9820			
F-Statistic (Prob.)	110.1772 (0.0000)			
Durbin-Watson Statistic	2.2737			

***, significant at 1%, **, significant at 5% and *, significant at 10%.

relationship between the dependent and independent variables is statistically reliable. The independent variables jointly explain about 99% of the variation in the dependant variable. The Durbin-Watson Statistic value (2.2737) indicates that there is no problem of serial autocorrelation. The short run dynamics of the variables show that the variable of interest, export diversification index (DIV) positively contributes to GDP growth and is statistically significant at the 5% level of significance. Five other variables that significantly influence Zimbabwe's GDP growth in the short-term are; direct investment (DI), Capital (K), number of exports (EXP), lagged EXP (EXP_{-1}), GDP per capita (RGDP), lagged RGDP ($RGDP_{-1}$) and lagged SSE (SSE_{-1}). K, EXP and SSE_{-1} positively contribute to GDP growth and are statistically significant at the 5% level of significance. RGDP also enhances GDP growth and is statistically significant at the 1% level of significance. *DI* and EXP_{-1} negatively influence GDP growth and are both statistically significant at the 5% level of significance. EXP's positive coefficient is not surprising as it may signify the increase in primary products. Hodey et al. (2015) indicate that as the number of export products increase, countries in SSA tend to grow faster. Diversification into value added export products as proposed in the NDS1 will likely bring more benefits such as increased export earnings, stabilization of the exchange rate and employment.

In the long-term, Zimbabwe's GDP growth is influenced positively by DVI, K, and SSE and negatively by L and DI. RGDP is statistically significant at the 1% level of significance while the other variables are statistically significant at the 5% level of significance. The results suggest that an increase of a unit value of diversified exports leads to an increase in GDP growth of 31.04 units. A unit value of capital leads to an increase in GDP growth of 0.430 units. A unit value of DI leads to a decline

Table 7. ADRL error-correction regression results.

Error correction regression				
Variable	**Coefficient**	**Std. error**	**t-Statistic**	**Prob. value**
C	-50.1585***	1.3247	-37.8634	0.0000
D(RGDP)	77.3120***	2.1792	35.4830	0.0000
D(EXP)	2.1967***	0.5048	4.3519	0.0009
D(L)	10.1253***	1.4681	6.8970	0.0000
D(SSE)	0.2258**	0.0741	3.0466	0.0101
CointEq(-1)*	-1.0568***	0.0277	-38.2060	0.0000
R-squared		0.9910		
Adjusted R-squared		0.9886		
Durbin-Watson statistic		2.2737		

***, significant at 1%, **, significant at 5% and *, significant at 10.

in GDP growth by 0.467 units. The negative influence of DI on GDP growth in Zimbabwe can be attributed to the low investment in manufactured and value-added exports. The bulk of Zimbabwe's export products are mainly primary and are low value-added agricultural and mineral products. The negative and statistically significant coefficient of L may be due to the high level of unemployment, low labour productivity and the current dominance of the informal sector in the economy. Broadly speaking, our findings align with economic theory, which posits a positive correlation between export diversification and GDP growth. They also resonate with the conclusions drawn in other studies (Hesse, 2008; Khodayi et al., 2014).

The error correction term measures the speed of return to equilibrium when the dependent variable adjusts to changes in the explanatory variables. The adjustment coefficient (-1.0568) is statistically significant at the 1% level of significance and has the correct sign. This implies that the variables converge in the long-term. These results presented in Table 7 are based on the re-parameterization of the estimated ARDL (1, 0, 1, 1, 1, 0, 0, 1, 0) model. This implies that the system is adjusted towards the long-term equilibrium by the error-correcting mechanism with a shock absorption rate of about 100 percent in the current period.

CONCLUSIONS AND POLICY RECOMMENDATIONS

This study's main objective was to examine the impact of export diversification on GDP growth in Zimbabwe for the period 1995 to 2020. An ARDL model (Bounds-testing approach) was used to achieve this objective. The ARDL approach estimated simultaneously the short run and long run models. The findings indicated a positive link between export diversification and GDP growth in Zimbabwe. In the long-term four control variables, K, DI, SSE and L were found to have a significant influence on GDP growth. In the short-term, K, DI, EXP, EXP_{-1}, RGDP, $RGDP_{-1}$ and SSE_{-1} were found to have a significant influence on GDP growth. While K, RGDP, EXP and SSE_{-1} enhance GDP growth, DI, EXP_{-1} and $RGDP_{-1}$ negatively influence GDP growth.

This study's findings have important implications for Zimbabwe. Zimbabwe being a small country heavily depends on primary product exports which makes it a price taker on the international market. Trading in primary products contributes to revenue volatility and unstable GDP growth. Export diversification can enable Zimbabwe to move away from dependence on primary export products towards value-added export products. This would enable Zimbabwe to minimize the negative impact of price volatility in international markets. This would also give Zimbabwe a sustainable platform to benefit from world trade.

The empirical findings imply that Zimbabwe needs to diversify its production structures away from the predominant production of primary agricultural and mining products as proposed in the NDS1. Diversification into value-added products would minimize export concentration of primary agricultural and mining products and stabilize Zimbabwe's export earnings. In addition, this will ameliorate the foreign currency shortages currently characterizing the economy and enhance GDP growth performance which is important for job creation and poverty reduction. For this to be realized, Zimbabwe has to design and implement policies aimed at attracting both domestic and external investment in infrastructure and services and industrial sectors.

Zimbabwe's current macroeconomic policy environment inhibits the performance of many Zimbabwean firms as it lacks predictability. Zimbabwe needs to create an environment that is conducive for the attraction of investment in various sectors of the economy which support export diversification. This calls for the implementation of policies to correct the prevailing macroeconomic instability, price and exchange rate

distortions. There is also need to speed up the on-going road infrastructure development, ensure stable and adequate electricity supply and communication infrastructure.

Capital accumulation contributed positively to Zimbabwe's GDP growth during the study period. The results imply that an increase in the ratio of investment has the potential to increase Zimbabwe's GDP growth. Hence, increasing Zimbabwe's GDP growth requires supportive policies that promote both public and private sector investment. Direct investment which positively influences Zimbabwe's GDP growth has important implications for the export diversification strategy. Direct investment is critical for knowledge and technology transfer in the transformation of the Zimbabwean economy. Such knowledge and technology is critical for the production for value-added products. The fact that direct investment leads to a reduction in Zimbabwe's GDP growth suggests that Zimbabwe needs to create conducive environment in order to attract sufficient direct investment, particularly in the manufacturing sector.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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