

Nyasha Mahonye (South Africa), Leonard Mandishara (South Africa)

Currency reform, trade and economic performance in Zimbabwe

Abstract

This paper details the trade and economic impact of currency reform in Zimbabwe for the period of 2000 to 2013. The approach in this study is unique in terms of dimension of focus and scenarios the authors looked at. The study took a before and after study approach to track the significant impact to adopting other currencies on imports, exports, trade balance, capacity utilization, economic growth rates, inflation, government fiscal revenue and tax revenue. The trends that emerge in this research show that currency reform is a tool to achieve stabilization in terms of viability of transacting and improving investors' confidence by eliminating exchange rate risk in Zimbabwe but it's not sufficient for generating and sustaining economic and trade performance. The empirical analysis shows an association of multicurrency system with improved trade balance, reduced government budget deficit, and increase in GDP growth rates.

Keywords: currency reform, multicurrency system, exchange rate risk, economic and trade performance.

JEL Classification: E52, E63, F15.

Introduction

Currency substitution¹ (dollarization) is not a phenomenon that took place in Zimbabwe alone but several countries have substituted their national currency though for different reasons. The main reasons² which prompt currency substitution include amongst others economic and financial instability, political instability; large donor flows and deliberate institutional arrangements. There are quite a number of countries which have decided to dollarize chiefly to ease the devastating effects of inflation. However, what is critical to note is that of these countries some decided not to reverse dollarization while others decided to reverse it (Schuler, 2005; Erasmus et al., 2009; and Nkomazana and Niyimbanira, 2014). The working definition followed in this paper relates to dollarization – as the use of foreign currencies as a medium of exchange, store of value, or unit of account. Our definition has support from recent research by Corrales et al. (2015) who defined dollarization as a degree to which real and financial transactions are carried out in foreign currencies relative to those performed in domestic currencies.

There is scant literature which details the causes, scale and consequences of exchange rate risk in Zimbabwe during the period 2000 through to 2008. During this period Zimbabwe went through serious economic challenges. Zimbabwe spontaneously adopted the multiple currency system in 2009, through the introduction of the Short Term Emergency Recovery Program (STERP) of 2009. There

is, however, no robust study done to tease the implications of adoption of multicurrency system on Zimbabwean overall economic performance especially looking at trade and growth in productive sectors of the economy, poverty linkages, access to basic goods and services, and implications towards long term savings. It is therefore imperative to do an in-depth study to document the economic implications of currency reforms in Zimbabwe.

These reflections motivate us to document the trends in trade and economic performance before currency reform and during its adoption. The study found that economic fortunes were revived in 2009 through to 2012. The foreign exchange reserves improved, imports declined and exports increased marginally. The trade balance remains in deficit but it improved marginally. Key to the decline in imports was a sharp decrease in food imports, and electricity imports which declined marginally between 2011 and 2012 and fuel imports declined between 2011 and 2012.

The adoption of multicurrency system, i.e. use of USD\$, Botswana's pula and South Africa's rand as a legal tender in Zimbabwe has potential implications on macroeconomic performance. The study found a clear improvement in GDP growth rates from year 2009 through to 2013 though the latter years have positive GDP growth increasing at a decreasing rate. The key achievement of the multicurrency reform was the elimination of exchange rate risk that was associated with a weaker Zimbabwean dollar and was now fuelling inflation. The inflation rate stabilized after adoption of other currency as legal tender and the latter years of 2012 and 2013 saw a deflation era due to weaker domestic demand in Zimbabwe.

Tax revenue and fiscal balance as a share of GDP was a bit static over the period of dollarization. The decline in fiscal balance as a percentage of GDP might be as a result of cash budgeting fiscal policy

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Nyasha Mahonye, Lecturer at University of Witwatersrand (WITS), School of Economic and Business Sciences (SEBS), South Africa. Leonard Mandishara, Senior Researcher, National Association of Non-Governmental Organisations (NANGO), Zimbabwe, South Africa.

¹ Currency substitution refers to the partial or full use of a foreign currency by a country. The foreign currency will be able to perform the functions of money in a country which has not issued it.

² According to Erasmus et al. (2009) on de-dollarization in Liberia-lessons from cross country experience.

adopted during year 2009 through to 2013. However, on the other hand, dollarization also had some negative impacts to the economy which Kararach, Kadenge and Gucheya (2010) argued such as increased burden of public debt service, unemployment, and decline in real income, liquidity crises, deterioration in health and educational services and the loss of sovereignty on monetary policy amongst others. These are evident in practice. Mangizvo (2011) argues that a major problem Zimbabwe is facing despite dollarization is that of being locked in a liquidity crunch making it difficult to justify the country's economic asset pricing. Moreover, the benefits of dollarization remain invisible to the majority since majority of the people are unemployed.

The main result we found is that multicurrency systems in Zimbabwe are significantly associated with improved trade balance, reduced government budget deficit, and increase in GDP growth rates. Currency reform was associated with improved trade balance (decrease in trade deficit) and increase in imports and decrease in export competitiveness. This entails currency reform was good for trade performance but increase in production in the tradable sector is key in reviving the export growth and regenerating sustainable levels of foreign reserves and reducing recurrent imports. The trends that emerge in this research show that currency reform is a tool to achieve stabilization in terms of viability of transacting and improvement in investors' confidence. Multicurrency system eliminated exchange rate risk in Zimbabwe but it was not sufficient for generation and sustenance of economic and trade performance.

Our results are supported by Noko (2011) who found that dollarization in Zimbabwe has quashed hyperinflation, restored stability, increased budgetary discipline, and re-established monetary policy credibility. The approach we used is unique in terms of dimension of focus and scenarios we looked at. The study took a before and after study approach to track the significant impact to adopting other currency on imports, exports, trade balance, capacity utilization, economic growth rates, inflation, government fiscal revenue and tax revenue.

Section 1 discusses the literature on currency reforms and Section 2 will look at the trade and economic performance during dollarization era. Lastly, the concluding remarks and policy reflections will be deduced from trends in the trade and economic performance during and before dollarization era and will be presented in the final section.

1. Related literature

In Africa, Angola (Schuler, 2005), Liberia, Democratic Republic of Congo (Fisher et al., 2013) and Zimbabwe (Nkomazana and Niyimbanira, 2014) are some of the few countries to adopt full currency reform (we

use this term interchangeably with "dollarization"). Countries like Namibia, Lesotho, Swaziland and South Africa are in a Common Monetary Area where they use the South African rand as a partial legal tender though they still have their own domestic currency. The same prevails in Franc-phone zone.

The work by Fisher et al. (2013) looked at the challenges of conducting monetary policy in a context of high dollarization of the banking system and weak institutions in Democratic Republic of Congo (DRC). This study found limited effectiveness of the Central Bank of Congo in controlling inflation, despite a rapid policy response to inflation shocks. Options available to enhance the effectiveness of monetary policy are limited. Fisher et al. (2013) concluded that strengthening the current monetary policy framework remains the first-best option, given the country's exposure to frequent terms-of-trade shocks.

Sikwila (2013) examines the impact of dollarization on the economy of Zimbabwe using qualitative approach. The study looked at sectorial impact of dollarization in Zimbabwe and did not look at trade performance, fiscal revenue and foreign reserves implication. This paper found significant contribution of multicurrency system on sectorial GDP contribution. Makochekanwa (2009) looked at the currency options after the multicurrency systems. This research only looked at theoretical and perceived benefits and costs associated with a myriad of currency options. The paper however did not document the practical contributions and demerits of the multicurrency system in Zimbabwe.

This study focuses on implication of multicurrency system anchoring on USD\$ on trade performance. We noted that Zimbabwe produces some goods for international market such as mineral resources and as such exchange rate is key at international market. The unprecedented monetary growth in Zimbabwe shown by Fig. 10 has resulted in weak Zimbabwean dollar and hyperinflation of year 2000 through early 2009 as shown by Fig. 9.

1.1. Theoretical perspectives. The emerging literature highlighted above grouped dollarization phenomenon in form of the following three main categories (Levy Yeyati, 2006):

The portfolio view: Dollarization is an optimal choice for a given distribution of real returns in each currency adopted. Thus, if the domestic deposit (Zimbabwean dollar-ZW\$) yields higher returns than a corresponding foreign currency deposits (U.S. dollar, South African rands or Botswana pula – initial adopted currencies in February 2009), then foreign currencies deposits should be lower, and the converse holds.

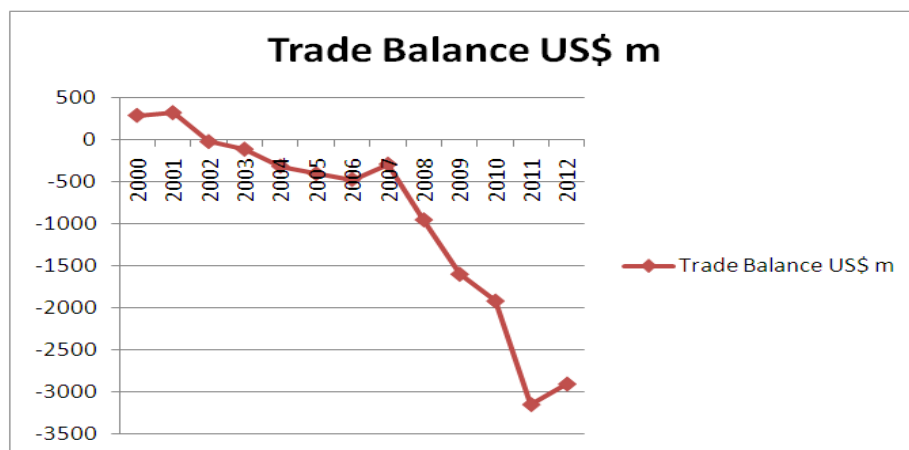
The market development view: This treats dollarization as a suboptimal response to a market imperfec-

tion. The constraints on the use of foreign currency reflected in limited current account openness, weak financial deepening (shown by M2 to GDP ratio), with lack of investment opportunity in domestic currency – where economic agents prefer to hold currency in foreign denominations. This is synonymous with shallow financial sector (resembled with low private sector credit by banks) and has few savings options – these are examples of market failures that can affect the dynamic impact of dollarization on trade and economic performance in Zimbabwe. GDP per capita, could reflect other types of market failures through institutional and economic factors, with implications for the development of local currency.

The institutional view: institutional failure can foster dollarization through either by generating new distortions or by strengthening the channels highlighted in the last two categories. For instance, the quality of institutions in Zimbabwe affects the credibility of monetary policy and commitment to an exchange rate regime by fiscal authorities. Political instability resulting from weak institutions, through its large fiscal costs and implications for inflation affect economic agents' incentives to hold foreign currency – denominated assets.

1.2. Trend analysis of trade and economic activities during and before dollarization. Trade balance in Zimbabwe has been generally declining overtime from 2001 until 2011. During years 2001

to 2009 there was negative growth of the trade balance, which continued to worsen with exception of period between year 2006 and 2007. This is a period where the country experienced serious currency reforms leading to the rejection of the local currency as legal tender by the people. This then led to the formal acknowledgement of the use of foreign currency as legal tender in Zimbabwe in 2009 through the STERP. The trade balance was mainly worsened by high importation of food imports since the country's food security was compromised by the unplanned land reform policy and the intermittent drought which the country experienced amongst other structural challenges. The negative trend continued after the adoption of the multi-currency system which shows that there was inertia which had been built by the negative economic impacts. However, since 2011 there seems to show a positive development in the trade balance and this is in line with the growth of economic activities which boast the country's production capacity and improve export industry at the same reducing imports. During the economic challenges Zimbabwe was generally transformed into a South Africa's supermarket economy where the majority products were coming from South Africa. This trend is explained by Figure 2 as well. There is a slight upward improvement in trade balance from 2010 through to 2013 (see Figure 1). In this graph the trend shows dollarization era coincides with improvement in trade balance.



Source: Ministry of Finance and Economic Development, Zimbabwe.

Fig. 1. Evolution of trade balance in Zimbabwe (2000-2013)

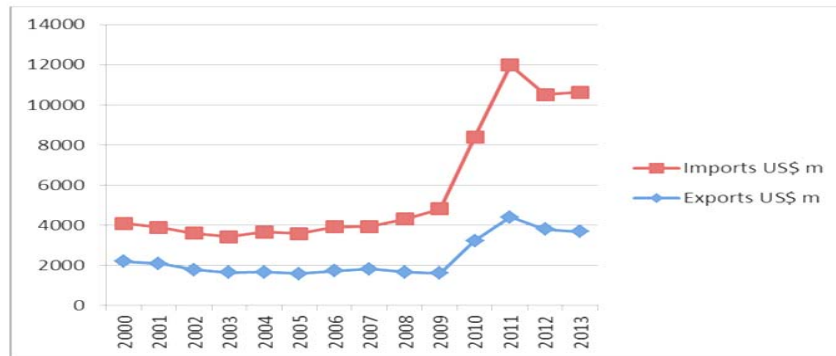
Generally, Zimbabwe has been a net exporter of goods and services from the period under review. What is interesting to note is that prior to the introduction of the multi-currency system, though imports were more than exports the variance has been modest. However, for the dollarization regime, imports increased considerably as outlined in Figure 2. On the other hand exports grew but at a slow rate compared to imports. This is explained by the fact

that when Zimbabwe adopted the dollarization, more people were now able to access hard currency and even civil servants who form the bulk of employment began to receive foreign currency. This era saw many Zimbabweans resorting to buying food commodities from neighboring countries. It saw the emergency of a middle class and an increase in importation of cars from Japan and in return increasing Zimbabwe's imports. Thus the

introduction of the multi-currency system in Zimbabwe led to the increase in imports and slight by improved the exports as well.

The disparity between exports and imports values in Zimbabwe persists throughout the period of

analysis as shown in Fig. 2. The trade performance in terms of imports and exports slows down between 2011 and 2013. Trade performance improved marginally in the dollarization era possibly due to low exchange rate risk.



Source: Ministry of Finance and Economic Development, Zimbabwe.

Fig. 2. Evolution of exports and imports in Zimbabwe (2000-2013)

GDP growth rates have been sluggish in Zimbabwe for the period of 2000 and registered its record low at 15% regression rate in year 2008.

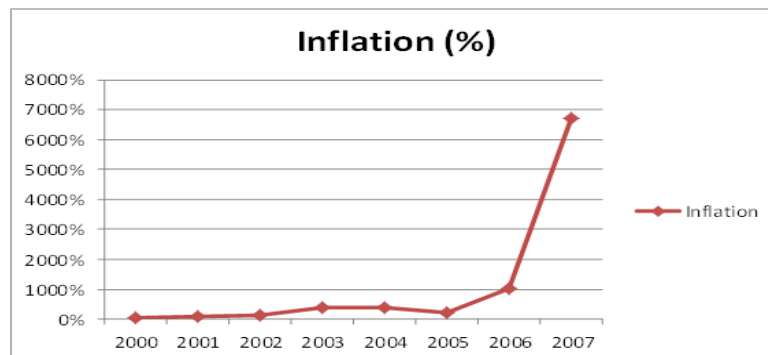


Source: Ministry of Finance and Economic Development, Zimbabwe.

Fig. 3. Evolution of GDP growth rates in Zimbabwe (2000-2013)

GDP growth rates recovered between 3rd quarter of 2008 and early 2009 and were at peak in 2011. GDP grew by 11.9% in 2011 and then slowed down to 4.5% in 2013. The era of dollarization was characterized by positive growth in GDP and economic expansion. This might imply viability

of business transaction during the period of multicurrency system that has potential positive implication on the drivers that generate growth. These factors like improved liquidity in the banks, and increased presence of workers in formal employment organization.

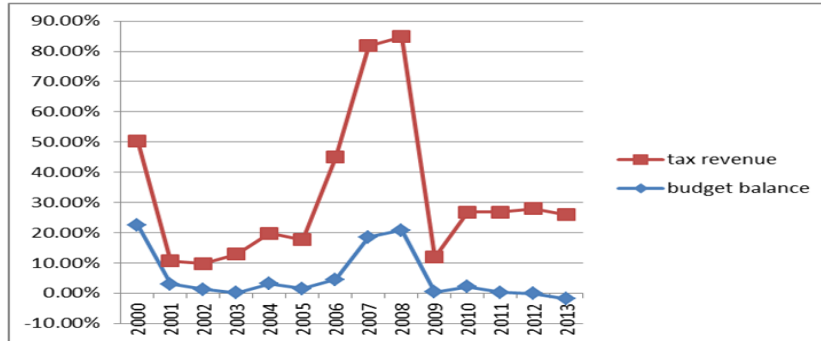


Source: Ministry of Finance and Economic Development, Zimbabwe.

Fig. 4. Inflation trends before currency reform (2000-2007)

The annual inflation rate has been on an upward trend since year 2000. The annual inflation rate skyrocketed between 2005 and 2008 as shown by Fig. 3. This trend shows the rationale towards adoption of multicurrency system to allow for viability in economic transaction using stable currency. Fig. 9 sketches the trends in inflation during the currency reform.

The fiscal budget as a share of GDP has been generally low below 10%. The tax revenue has been a large portion of GDP and was at peak in 2007/2008. The revenue sharply dropped after adoption of multicurrency system in 2009 but maintain a steady level of around 30% of GDP between years 2010 through to 2013.

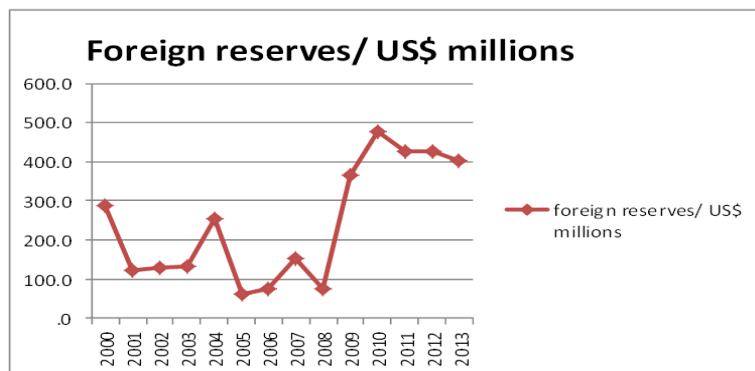


Source: Ministry of Finance and Economic Development, Zimbabwe.

Fig. 11. Fiscal balance and tax revenue evolutions

The foreign reserves held by the Reserve Bank of Zimbabwe (RBZ) have been trending between USD\$50 million in 2008 and slightly below USD\$500 million in 2010. The foreign reserves are used as import cover and are held by the reserve bank authorities to support foreign currency demand by economic agents in the country. The foreign reserves have been low from 2002 to 2008, though slightly peaked in year 2004 due to economic crisis in Zimbabwe. The adoption of multicurrency

system in February 2009 saw a remarked improvement in export values as shown in Fig. 2 and also increase in reserves shown in Fig. 12. This implies a stable currency will support activities in the tradable sector and improve the ability to generate foreign reserves. On the other hand the adoption of full dollarization entails conversion of Zimbabwean wealth fully from local currency to foreign currency and this might in the short-run lead to improvement in foreign reserves.

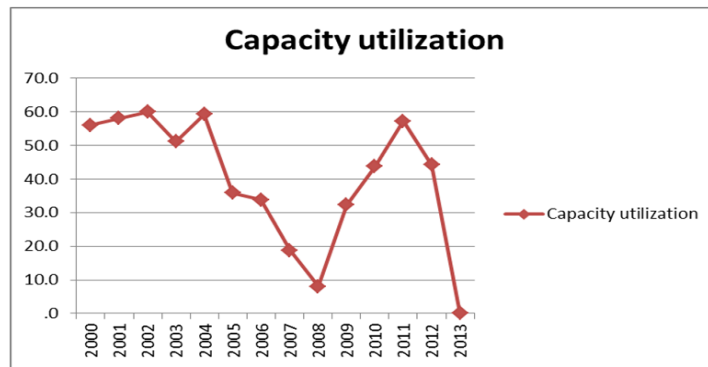


Source: Ministry of Finance and Economic Development, Zimbabwe.

Fig. 12. Evolution of foreign reserves in Zimbabwe (2000-2013)

Capacity utilization was consistently high between year 2000 and 2004 at around 60%, as shown by Fig. 8. It dwindled between year 2005 and 2008 and then picked again in 2009 through to 2011. It, however, slowed down in 2012. The trend of capacity utilization by industrial sector

shows a sluggish improvement in production levels after introduction of dollarization. This implies adopting a stable currency has short-term production gains in Zimbabwe that can be sustained by improvement in other factors that matter for growth.

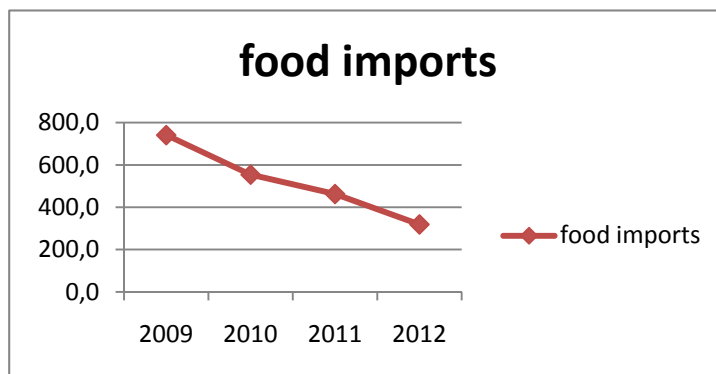


Source: Ministry of Finance and Economic Development, Zimbabwe.

Fig. 13. Industrial capacity utilization in Zimbabwe

Food imports have been declining overtime and probably due to increased production in Zimbabwe. The period of 2009 through to 2012 can be termed period of good fortunes in

terms of rains and realization of gains of land reform of 1999. This period has currency reforms which might have eased transactions by farmers in procuring raw materials.

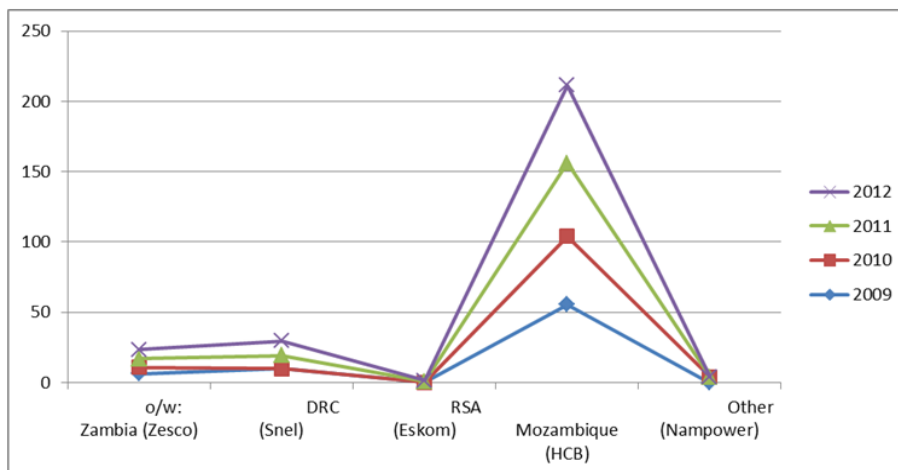


Source: Ministry of Finance and Economic Development, Zimbabwe

Fig. 5. Food imports in quantity in tonnes (000's)*

Currency reform leads to viability in farming activities, as it significantly reduces uncertainty in the trading currency. The value of farming activities faced less exchange rate risk at the market and, hence results in decline in imported farm produce and increase in domestic produce.

Electricity imports increased over time and Zimbabwe imports more electricity form neighboring SADC countries as shown by Fig. 5. The year 2010 saw a decline in electricity imports maybe due to increase in domestic electricity production or decline in supply in neighboring SADC countries.



Source: Ministry of Finance and Economic Development, Zimbabwe.

Fig. 7. Electricity imports by trading partner in mega-watts (2009-2010)

The country Zimbabwe imports more electricity is Mozambique, followed by DRC and Zambia and it imports less electricity from South Africa and other countries within the region. The imports from Mozambique increased more than four-fold between 2009 and 2012.

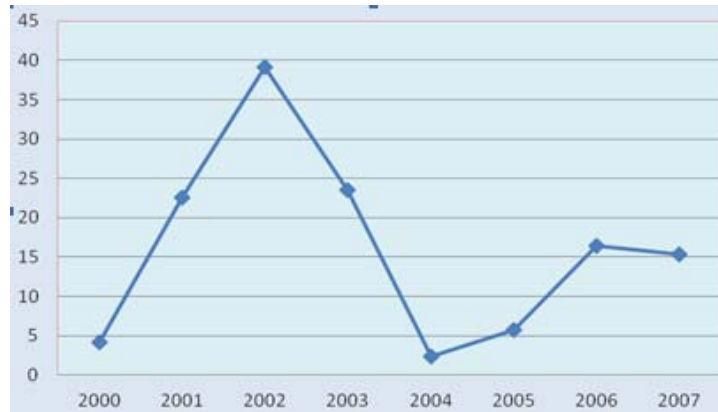
Fuel imports have been increasing overtime from 2009 through to 2011. The year 2012 saw a sharp decline in the imported fuel in Zimbabwe.

The rate of price changes in the economy slow down rapidly after year 2008 into depression in 2009. Inflation peaked to around 4% in 2012. The inflation rate in Zimbabwe, however, went back to depression in 2013 as shown by Fig. 9. The rate of increase in price level coincides with increase in money supply as shown by Fig. 10. Due to continued increase in imports over exports between 2009

and 2013, the foreign reserves declined gradually as the economy slows down.

1.3. Currency reform and stock market activities.

The stock market increased steadily in terms of market size and liquidity. The number of listed companies on the Zimbabwe Stock Exchange (ZSE) increased from 67 in 1998 to 76 in 2002 and further increased to 82 in 2007. Market capitalization (market size) increased from 20% of GDP in 1998 to 246% in 2002 and started to decline in 2003 to 86.9% and 41% in 2005. The market size then witnessed a rebound from year 2006 through to 2007. The level of trading activities in the ZSE also witnessed some mixed trends. The value traded increased sharply from 2.9% in 1998 to 39% in 2002 but this saw a decline in 2003 to 23.5% and further to 2.3% in 2004. The value traded increased in 2005 through to 2006 though it declined slightly in 2007 as shown in Figure 10 overleaf.

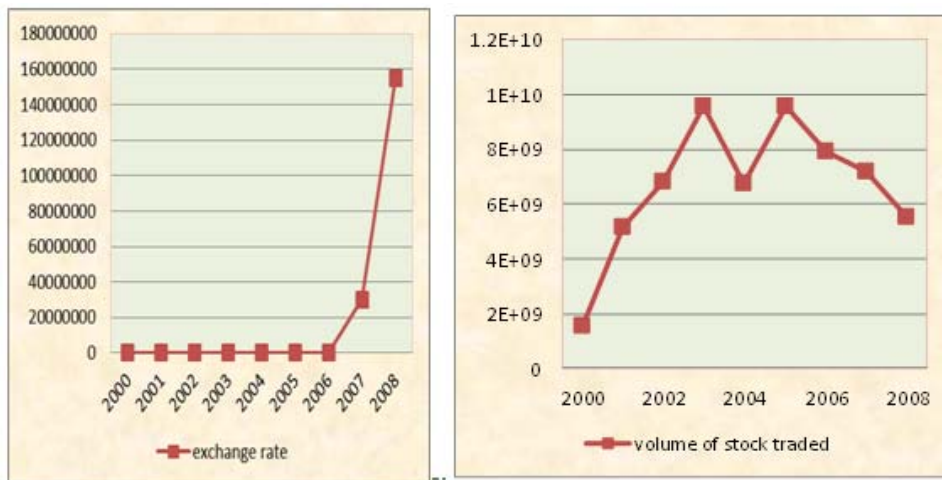


Source: Adapted from Mahonye and Mandishara (2014)

Fig. 10. Total value of stocks traded as a percentage of GDP

Figure 11 and 12 juxtaposed below show that at higher levels of exchange rate (official), the volume of stocks on the ZSE began to decline showing the impact of high exchange rate on stock market performance. Investors have preference to save in en-

vironments with predictable exchange rate movements. Figure 11 shows that there was a period of fixed exchange rate regime between years 2000 and 2005 followed by a sharp depreciation as from 2006.



Source: Both adapted from Mahonye and Mandishara (2014)

Fig. 11. Zimbabwe Exchange rate → Fig. 12. Volume of stock traded

2. Data, methodology and discussion of results

Following the background issues highlighted in the introduction, literature review and last section, this paper utilizes the descriptive analytics approach. The research utilizes both qualitative and quantitative approach. The last section looked at trends in trade and economic performance before and during period of multicurrency system. The results show slight improvement in economic and trade performance for the period of 2009 through to 2012 and year 2013 witnessed a slight decline in both trade and economic activities.

The next section presents results of quantitative analysis. Notably, we flag the distribution of the data by looking at the mean, standard deviation, maximum and minimum values for the period of 14

years. The other aspect of quantitative approach utilized the spearman rank test to tease out the degree of association between the multicurrency system (currency reform), trade performance measures and proxies of economic activities. The conclusion will be presented to inform policies from qualitative and quantitative results.

2.1. Descriptive statistics. Inflation and the weakening of Zimbabwean dollar resulted in the adoption of UDS\$, Botswana pula and South African rand as a legal tender in February 2009. Inflation in Table 1 shows high level of deviation from the mean. The inflation was over 55% before the multicurrency regime was introduced and on the inception of the multicurrency regime the inflation went into depression and then picked later but still is under 4%.

Table 1. Descriptive statistics of currency reform, trade and economic performance

| Variable | Observation | Mean | Standard deviation | Minimum value | Maximum value |
|------------------------|-------------|--------|--------------------|---------------|---------------|
| Currency reform | 14 | 0.36 | 0.50 | 0 | 1 |
| Trade openness | 14 | 78.7 | 35.2 | 49.7 | 140.3 |
| Foreign reserves | 14 | 241.8 | 153 | 60.5 | 477.3 |
| Capacity utilization | 14 | 42.9 | 16.5 | 8 | 60 |
| Budget balance | 14 | 0.05 | 0.09 | -0.02 | 0.23 |
| Tax revenue | 14 | 0.27 | 0.18 | 0.08 | 0.64 |
| Trade balance | 14 | -1057 | 1275 | -3245 | 317 |
| Exports | 14 | 2358 | 984 | 1588 | 4416 |
| Imports | 14 | 3415 | 2176 | 1778 | 7562 |
| Export competitiveness | 14 | 0.43 | 0.07 | 0.33 | 0.54 |
| GDP growth rates | 14 | -0.004 | 0.08 | -0.14 | 0.12 |
| Inflation | 14 | 165114 | 617775 | -0.08 | 2311509 |

Foreign reserves were USD\$300 million before the multicurrency era but picked and now hovering above USD\$400 million. Trade balance and imports are other transaction that varied widely in during the period of analysis. The trade balance improved during the

multicurrency regime though imports remain higher. GDP growth rates increase significantly with a minimum of negative 14% in 2008 and reached a peak of 12% in 2011.

2.2. Correlation matrix.

Table 2. Correlation matrix results on currency reforms, trade and economic performance

| Variables | Currency reform | Trade openness | Foreign reserves | Capacity utilization | Budget balance | Tax revenue | Trade balance | Exports | Imports | Export comp | GDP | Inflation |
|----------------------|-----------------|----------------|------------------|----------------------|----------------|-------------|---------------|---------|---------|-------------|-----|-----------|
| Currency reform | 1 | | | | | | | | | | | |
| Trade openness | 0.8* | 1 | | | | | | | | | | |
| Foreign reserves | 0.8* | 0.55* | 1 | | | | | | | | | |
| Capacity utilization | -0.09 | -0.13 | 0.18 | 1 | | | | | | | | |
| Budget balance | -0.61* | -0.39 | -0.35 | -0.22 | 1 | | | | | | | |
| Tax revenue | -0.02 | -0.02 | 0.18 | 0.03 | -0.60* | 1 | | | | | | |
| Trade balance | -0.8* | -0.85* | -0.48* | 0.38 | 0.44 | -0.36 | 1 | | | | | |
| Exports | 0.45 | 0.30 | 0.60* | 0.28 | 0.04 | 0.28 | -0.24 | 1 | | | | |
| Imports | 0.8* | 0.82* | 0.53* | -0.42 | -0.25 | 0.48* | -0.95* | 0.41 | 1 | | | |

Table 2 (cont.). Correlation matrix results on currency reforms, trade and economic performance

| Variables | Currency reform | Trade openness | Foreign reserves | Capacity utilization | Budget balance | Tax revenue | Trade balance | Exports | Imports | Export comp | GDP | Inflation |
|------------------------|-----------------|----------------|------------------|----------------------|----------------|-------------|---------------|---------|---------|-------------|--------|-----------|
| Export competitiveness | -0.78* | -0.8* | -0.41 | 0.51* | 0.46 | -0.30 | 0.95* | -0.05 | -0.9* | 1 | | |
| GDP growth | 0.81* | 0.55* | 0.62* | 0.05 | -0.53* | -0.12 | -0.60* | 0.50* | 0.64* | -0.54* | 1 | |
| Inflation | -0.80* | -0.60* | -0.72* | -0.28 | 0.53* | 0.42 | 0.36 | -0.39 | -0.39 | 0.36 | -0.66* | 1 |

The variable of interest currency reform was assigned a dummy of zero for period before dollarization and 1 for the dollarization era. Currency reform has a higher level and significant degree of association with trade openness (international openness), foreign reserves, government budget balance, trade balance, imports, export competitiveness, GDP growth rates and inflation. The empirical analysis shows the multicurrency systems is associated with improved trade balance, reduce government budget deficit, and increase in GDP growth rates.

Currency reform has a positive degree of association with trade openness. The adoption of foreign currencies as the domestic legal tender can be associated with increased trade and financial transaction with international market. The currency reform has a positive and significant association with foreign reserves. Currency reform was associated with improved trade balance (decrease in trade deficit) and increase in imports and decrease in export competitiveness. This entails currency reform was good for trade performance but increase in production in the tradable sector is key in reviving the export growth and regenerating sustainable levels of foreign reserves and reducing recurrent imports.

Currency reform has negative and significant association with government budget balance, inflation. This is economically intuitive since dollarization improves confidence in domestic and foreign investors by eliminating exchange rate risk and converted higher Zimbabwe dollar inflation into the anchor USD\$ inflationary prices. Due to low level of production, prevalent unemployment and weak domestic demand for goods and services, the inflation level have remained low. Government debt obligation have remained higher but the adoption of cash budgeting fiscal policy during the year 2009 through to 2013 led to improvement in the fiscal balance throughout that period.

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This study fails to support the conventional wisdom purported by other studies that dollarization can improve economic fortunes of the country. Currency reform is positively associated with growth GDP; this has intuitive meaning since the system brought sanity in terms of transacting and hence encourages production. This study cannot however attribute the improvement in GDP growth rates, increase in imports, and decline in government budget to currency reform policy. An econometric exercise controlling for political environment, institutions and global financial crisis can result in robust results. The study has 13 years; hence any meaningful econometric regression model cannot be carried out.

Concluding remarks

The empirical analysis shows the multicurrency systems is associated with improved trade balance, reduce government budget deficit, and increase in GDP growth rates. Currency reform was associated with improved trade balance (decrease in trade deficit) and increase in imports and decrease in export competitiveness. This entails currency reform was good for trade performance but increase in production in the tradable sector is key in reviving the export growth and regenerating sustainable levels of foreign reserves and reducing recurrent imports.

This study fails to support the conventional wisdom purported by other studies that dollarization can improve economic fortunes of the country. Currency reform is positively associated with growth GDP; this has intuitive meaning since the system brought sanity in terms of transacting and hence encourages production. This study cannot, however, attribute the improvement in GDP growth rates, increase in imports, and decline in government budget to currency reform policy.

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Appendix

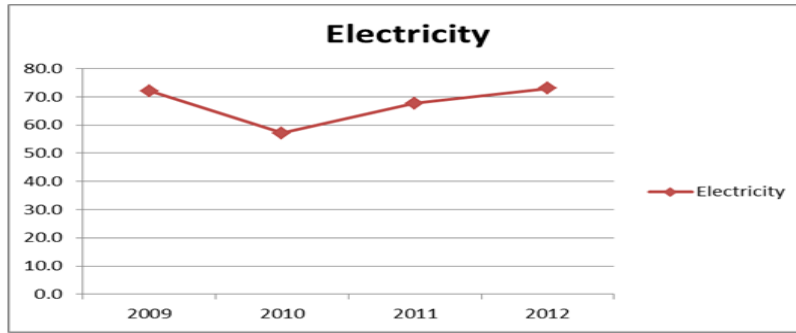
Table 3. Descriptive statistics for currency, trade and economic performance

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---------------|-----|-----------|-----------|-----------|----------|
| year | 14 | 2006.5 | 4.1833 | 2000 | 2013 |
| currencyref-s | 14 | .3571429 | .4972452 | 0 | 1 |
| opennessto-e | 14 | 78.73571 | 35.1752 | 49.7 | 140.3 |
| foreignres-s | 14 | 241.8214 | 152.8306 | 60.5 | 477.3 |
| capacityut-n | 13 | 42.93077 | 16.52313 | 8 | 60 |
| budgetbala-e | 14 | .0535714 | .0865232 | -.02 | .23 |
| taxrevenue | 14 | .2692857 | .1810849 | .08 | .64 |
| tradebalan-m | 14 | -1057.192 | 1274.75 | -3245.214 | 316.5713 |
| exportsusm | 14 | 2357.548 | 983.8728 | 1587.731 | 4416.297 |
| importsusm | 14 | 3414.74 | 2175.912 | 1778.241 | 7562.019 |
| totaltrade | 14 | 5772.288 | 3127.332 | 3439.749 | 11978.32 |
| exportcomp-s | 14 | .4314286 | .0676936 | .33 | .54 |
| gdpgrowth-r-s | 14 | -.0042857 | .0801647 | -.14 | .12 |
| inflation | 14 | 165114.2 | 617774.9 | -.08 | 2311509 |

Table 4. Spearman correlation matrix for currency reform, trade and economic performance

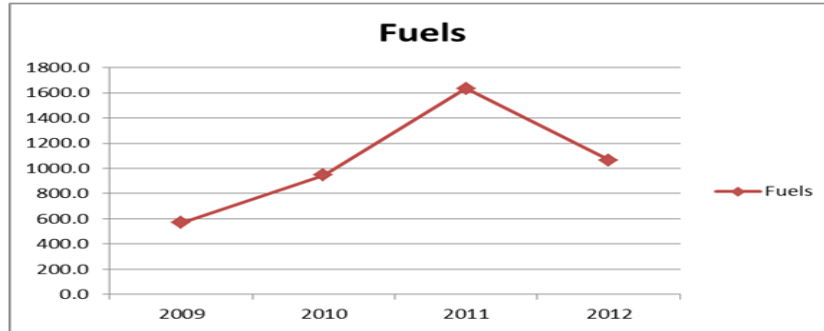
(obs=13)

| | currencyref-s | openne-e | foreign-s | capaci-n | budget-e | taxrev-e | tradeb-m | export-m | import-m | export-s | gdpgro-s | inflat-n |
|---------------|---------------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| currencyref-s | 1.0000 | | | | | | | | | | | |
| opennessto-e | 0.8018* | 1.0000 | | | | | | | | | | |
| foreignres-s | 0.8018* | 0.5495* | 1.0000 | | | | | | | | | |
| capacityut-n | -0.0891 | -0.1319 | 0.1758 | 1.0000 | | | | | | | | |
| budgetbala-e | -0.6115* | -0.3883 | -0.3548 | -0.2207 | 1.0000 | | | | | | | |
| taxrevenue | -0.0223 | 0.1763 | 0.0303 | -0.5950* | 0.5281* | 1.0000 | | | | | | |
| tradebalan-m | -0.8018* | -0.8516* | -0.4835* | 0.3791 | 0.4414 | -0.3581 | 1.0000 | | | | | |
| exportsusm | 0.4454 | 0.3022 | 0.5989* | 0.2802 | 0.0419 | 0.2810 | -0.2363 | 1.0000 | | | | |
| importsusm | 0.8018* | 0.8187* | 0.5330* | -0.4231 | -0.2458 | 0.4766* | -0.9451* | 0.4066 | 1.0000 | | | |
| exportcomp-s | -0.7827* | -0.8028* | -0.4138 | 0.5131* | 0.4601 | -0.2988 | 0.9545* | -0.0469 | -0.9048* | 1.0000 | | |
| gdpgrowth-r-s | 0.8073* | 0.5450* | 0.6197* | 0.0470 | -0.5303* | -0.1207 | -0.6003* | 0.4952* | 0.6446* | -0.5375* | 1.0000 | |
| inflation | -0.8029* | -0.5970* | -0.7235* | -0.2834 | 0.5315* | 0.4207 | 0.3604 | -0.3934 | -0.3989 | 0.3646 | -0.6607* | 1.0000 |



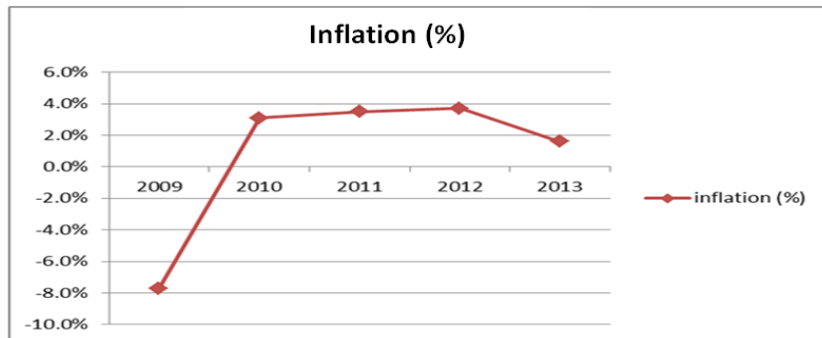
Source: Ministry of Finance and Economic Development, Zimbabwe.

Fig. 6. Electricity imports in UDSS\$ (2009-2012)



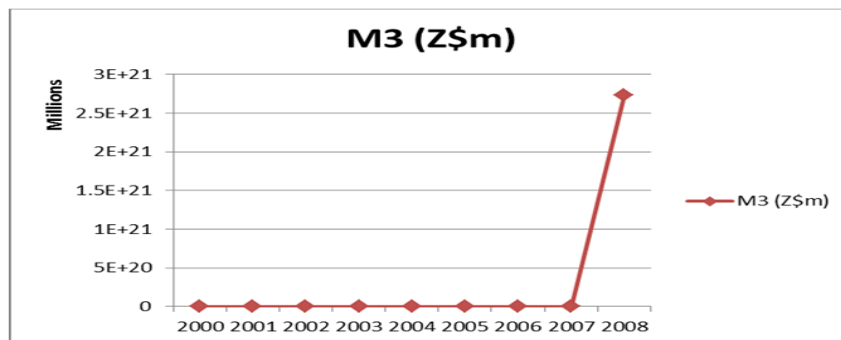
Source: Ministry of Finance and Economic Development, Zimbabwe.

Fig. 8. Fuels imports in volume (million litres) (2009-2012)



Source: Ministry of Finance and Economic Development, Zimbabwe.

Fig. 9. Inflation rates in Zimbabwe (2009-2013)



Source: Ministry of Finance and Economic Development, Zimbabwe.

Fig. 10. Money supply in Zimbabwe (2000-2013)