Does currency depreciation influence export perfomance? Evidence from South Africa's small business sector.

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Abstract
The paper addressed the impact of currency fluctuation on export performance by manufacturing small business sector in South Africa in the period 2001-2013.It was triggered by poor export performance by small business units in South Africa which has , in part, contributed to higher unemployment rate and negative balance of payment. Small business sector in South Africa receives special attention as it is generally credited with creating employment opportunities much better than established business units. Specifically the study sought to determine whether there poor performance by exporting small business units could be attributed to the rand instability. The study was explorative and employed linear correlation to analyse the impact of foreign exchange fluctuations on export receipts by small businesses in South Africa. Results on testing the correlation using the Pearson's correlation coefficient show that there is a moderate positive relationship between rand fluctuation and export receipts by manufacturing small business in South Africa. The study recommends that the South African government creates an environment which supports current as well as future and potential small business exporters in order to increase export receipts and growth

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I. Background

In an open exchange regime, market forces set the foreign exchange rate of a currency (Mohr and Fourie, 2014).Basic economic principles dictate that exchange rates have a direct impact on the prices that exporting companies will charge for the goods being exported. A rise on the strength of the rand, for example, would increase the foreign price of South African exports, leading to exports becoming expensive for those importing from South Africa. On the other end, a fall on the strength of the Rand will lead to an increase in demand for South African exports which becomes cheaper for those importing from South Africa. In summary, Rand depreciation encourages exports whereas rand appreciation discourages exports. Increased exports are a desired goal for every government. Spending on exports by foreigners constitutes an injection into the circular flow of income and spending in the domestic economy (Mohr and Fourie, 2004). Spending on imports on the other hand, constitutes a leakage or withdrawal from the circular flow of income and spending in the country. In short, exports increases liquidity in the domestic economy, stimulating investments, and creating jobs (Mohr & Fourie, 2004). Most countries that have achieved rapid and sustainable high levels of economic growth over the past decades have achieved that through exporting (Rankin, 2013).South Africa, being a middle income nation, invariably uses the rand exchange rate as a key variable in stimulating economic growth, thereby reducing inequality and poverty through job creation (Bah & Amusa, 2003).

II. Problem statement

Exports by small business sector in South Africa have paled compared to that of big business units, and in the period 2002-2012, the contribution of the small businesses to total export volumes averaged less than 10% of the overall export volumes (Rankin, 2013). Under- performance by small business in the export sector impacts negatively on employment creation and balance of payment, among other areas (World Bank, 2014).Partly because of the poor export performance by small business, South Africa has been saddled with a high unemployment rate , currently pegged at 25% against a global average of 8% (Econometrix, 2015).The country is also faced with a huge balance of payment deficit, touted at 5.4% of the Gross Domestic Product by the end of 2015. This deficit is greater than that which prevailed during the global financial crisis (4.1% of GDP in 2008 and 1.3% in 2009). The sluggish export performance by the small business sector, in particular, is part

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of the reason behind the country's continuous worrying huge current account deficit (TIPS, 2014). Could export under performance by the small business be influenced by the changes in the country's exchange rate to major currencies?

3.Objective
To ascertain the impact of rand fluctuation on manufacturing small business exports in South Africa in the years 2001-2012.

4.Hypothesis
H^1 A depreciating rand impacts positively on exports for manufacturing small business in South Africa and vice versa
5. Assumptions
The South African currency will continue to depreciate in the foreseeable future
6.Justification
The study explores ways that will rejuvenate the export performance of the small business, and by so doing, attain the twin objectives of reducing the balance of payment deficit and employment creation.

7.Why targeting exporting small business?
        Empirical data show that small and medium sized enterprises in South Africa take up about twenty five percent of the 15 million strong labour force (National Credit Regulator, 2011). There is also general agreement among academics and policy makers alike that , notwithstanding the importance of large industrial and mining entities, the small business plays a huge role in employment creation and by extension, economic growth (National Credit Regulator, 2011). Evidence show that it cost less to employ someone for a small enterprise compared to a multi national corporation. In addition, the small business is seen as a vital cog in the technical innovation that is so critical for South Africa going forward (National Credit Regulator, 2011). In addition, there is a growing consensus that the South African business landscape is unfairly controlled by big businesses who then conspire and collude to constrain effective competition. All these ills plus the well documented unequal distribution of wealth means that small business have a huge role to play in poverty alleviation through employment creation (Econometrics, 2013).It is therefore no coincidence that the South African government has turned to small business for salvation on a wide range of challenges afflicting the South African economy.

Table 1.Snapshot of South Africa's exporters at macro level.

Sector	Large Business Units	Small business units
Food and beverages	85%	15%
Agricultural raw materials	90%	10%
Fuel, ores and metals	99%	1%
Metal materials	93%	7%
Chemicals	89%	11%
Textiles and Leather	71%	29%
Other metal materials	87%	13%
Industrial machines	83%	17%
Electronics	65%	35%
Transport equipment	96%	4%
Apparel and footwear	42%	58%
Other materials	67%	33%

Source: World Bank, 2014

        From the above table, it is apparent that exports are currently being driven by just a small number of players in South Africa, as reflected by the fact that the top five percent of the exporting players account for more than ninety percent of the exports. And, according to the World Bank report (2014), this unpleasant pattern is peculiar to South Africa .According to the available statistics, of the more than 21 000 small businesses that exported in 2012, the majority of them did so on a negligible scale, earning paltry returns as a result. While the average exporter among the small businesses grossed 5 million dollars, the average exporter on big entities in South Africa pocketed around 400 million (World Bank, 2014).

8. **Type of study**
The study is explorative and employs linear correlation to analyse the impact of foreign exchange fluctuations on export receipts by small businesses in South Africa. In so doing the study makes use of secondary data

gathered mainly from the World Bank as well as government of South Africa publications in the period 2001-2013

9. Literature review
South Africa's definition of SMEs
 Like other countries, South Africa faces huge challenges in defining what constitutes a small enterprise the issue of what constitutes a small, owing to the fact that different authors have come up with different definitions. One of the popular definitions is that put forward by International Finance Corporation which defines a small business as a registered business with not more than 250 employees (IFC, 2009). In practical terms, however, small enterprises are defined either according to the number of employees or turnover or both. In a world that is fast embracing technology, the definition of a small enterprise sorely on the basis of employees is not sound.

 In South Africa, a 'small business' is officially defined in section one of the National Small Business Act of 1996 as amended by the National Small Business Amendment Acts of 2003 and 2004 (NSB Act) as:

"... *a separate and distinct business entity, including co-operative enterprises and non-governmental organisations, managed by one owner or more which, including its branches or subsidiaries, if any, is predominantly carried on in any sector or sub sector of the economy mentioned in Column I of the Schedule 14...* ".

 The above definition is, arguably, vague. So in light of this confusion, this paper uses the IFC (250 employees) definition despite its own shortcomings.

Currency

Currency, also known as money, is the medium of exchange. It consists of notes and coins and is also known as the legal tender   The currency market refers to the foreign currency market. This is where trading in currencies take place. This, in turn, establishes rates of exchange for currency. Exchange rates are constantly fluctuating on the foreign exchange market. As demand rises or falls for particular currencies, their exchange rates adjust accordingly. A rate of exchange for currencies is the ratio at which one currency is exchanged for another. The most dominating currency in international trade is the United States dollar.

Currency depreciation or currency devaluation?

Whilst currency depreciation and devaluation may appear to mean the same in some quarters, this paper treats the two as distinct and different. Currency devaluation is a government commissioned, deliberate downward adjustment of the nations, currency compared to other currencies. It is done in an economy where the government fixes the exchange such as is the case in Zimbabwe currently. Currency depreciation, on the other hand,

 One factor leading a country to devalue its currency is to fight trade imbalances. Devaluation stimulates exports by reducing the cost of goods by exported. However, such a move also increases the cost of imports, further strengthening demand for domestic products. The resultant outcome of devaluation is that it produces better balance of payments leading to a shrinking trade deficit. It also creates more employment opportunities leading to increased gross domestic product.The downside of devaluation, however, is that it may lead to cost push inflation, particularly for economies that have a high import bill for raw materials

Currency depreciation, on the other hand, refers to a fall in the value of the domestic currency owing to supply and demand factors. Currency depreciation occurs in a floating economy while devaluation is experienced in a fixed exchange rate. Since the study is focused on the South African economy which uses a floating rather than a fixed exchange rate, the standpoint of the study is on rand depreciation rather than rand devaluation.

Implications of a weak rand

A weak rand has a number of implications for the South Africa's growth prospect. On the negative front, a weak rand pushes inflation up because imported goods become expensive .In turn, higher inflation devalues the rand

further. On the positive side, a weak rand stimulates exports. In particular, a weakening rand could stimulate small and big exports alike. However, this could be stifled by the rise in the price of imported raw materials which will contribute to higher costs of production for manufacturers.

Exports

Exporting, in simple terms, refers to selling goods or services outside the country where those goods are produced. Enterprises export goods and services where they have a competitive advantage, meaning that those entities would be better than other countries at providing those products. As noted earlier, exports, by increasing the gross domestic product, improves the standard of living of citizens. Exports also increase the foreign exchange reserves held by the central bank as foreigners pay for the exports either in their currency or using the United States dollar. Foreign exchange reserves can then be used by the central government to manage liquidity, inflation and money supply .Records show that in 2017, South Africa was the 34th largest exporter with exports amounting to $108 billion. South Africa's exports, however, have marginally gone down from $116 billion in 2012 to the $108 billion in 2017.Gold is South Africa's greatest export accounting for 15.6% of total exports followed by diamonds at 9%

Effect of exchange rate fluctuations

The effect of exchange rate fluctuations on international business transactions has been analysed more in developed than in developing or emerging markets economies (Sekansi, 2008). In the case of South Africa such studies have been few and far in between, with the exception of Bah and Amusi (2003), Azaikpono, et al. (2005) and Todani and Munyama (2005). Bah and Amusi (2003) used ARCH and GARCH models to examine the effect of real exchange rate fluctuations on South African exports to the United States for the period 1990-2000.They found out that the Rand's real exchange rate changes has a huge and negative impact of exports both in the long and short-run. Azaikpono's study, which employs the EGARCH rather than the ARCH and GARCH model, also echo the same findings as those of Bah and Amusi.

A study by Todani and Munyama (2005) tested the impact of changes in the exchange rate on total South African exports to the rest of the world .Using the ARDL technique, the study concluded that there is no significant link between South Africa exports and exchange rate changes or when there is a relationship, it is a positive one

Yi-Wong Cheung & Rajeswari Sengupta (2013) studied the impact of currency fluctuations on the export performance of the non-financial firms in India for the period 2001-2010.Their study concluded that an appreciating currency tend to negatively affect small exporters more than the established ones.

Mc Kenzie & Michael D. (1999), studied the impact of exchange rate fluctuations on international trade flows. Their study concluded that the currency volatility has a negative impact on international trade flows

Harun Yaksel (2012) carried out a study on the impact of currency volatility on Turkey's aggregate exports in the period 2003 to 2012.His findings were that while there was a negative impact, the relationship between currency volatility and export performance was not significant at 5% significance level.

A study by Qian and Varangis on the impact of exchange rate on exports found that foreign exchange rate does have a negative and statistically significant impact in two instances namely Canadian and Japanese exports to the United States of America

Arize, Osang and Slottje studied export flows of eight Latin American countries. The study concluded that fluctuations on the exchange rate have a negative effect on export demand leading to less export income

Bhattarai and Armah's study in Ghana on the relationship between exchange rate and imports and exports found that when the local currency devalues, it exerts a contractionary impact on both imports and exports. Such findings were echoed by Cameron's study with respect to the fresh water fish exports in Uganda.

To summarize, literature on the link between exchange rate fluctuations and international business suggest outcomes that show that the exchange rate fluctuations have, mostly, a negative impact on international trade transactions. Studies done early fail to find statistically significant relationships whereas latter studies done using time series properties of information do find significant relationship between the two variables.

10.Data presentation

Period	US Dollar/South African Rand Exchange rate(average)	%Depreciation	Export income from small business(USD millions)	% of Exports receipts by small business to total exports receipts	% rise/fall
2001	8.63		417.24	1.9	
2002	10.52	-21.9	469.02	2.4	0.5
2003	7.56	28.13	547.56	2.2	-0.2
2004	6.45	14.68	589.94	1.8	-0.4
2005	6.36	1.39	703.73	1.9	0.1
2006	6.76	-6.29	714.73	1.7	-0.2

2007	7.05	-4.28	725.06	1.5	-0.2
2008	8.26	-17.16	856.49	1.5	0
2009	8.42	-1.93	783.69	2.3	0.8
2010	7.32	15.02	848.05	1.7	-0.6
2011	7.26	0.82	951.75	1.7	0
2012	8.20	-12.95	845.28	1.9	0.2
2013	9.64	-17.56			

Source: World Bank, 2014; the South African Reserve Bank, 2014

11. Testing a Correlation Coefficient for Significance

The study sought to test existence, direction and strength of any correlation between rand fluctuation on one hand and export volumes of South Africa manufacturing small exporters over a twelve year period. Some elementary issues around correlation would suffice

The main result of a correlation is called the **correlation coefficient**. It ranges from -1.0 to +1.0. The closer r is to +1 or -1, the more closely the two variables are related and vice versa. If r is 0, it means there is no relationship between the variables. If r is positive, it means that as one variable gets larger the other gets larger. If r is negative it means that as one gets larger, the other gets smaller (often called an "inverse" correlation).

While correlation coefficients are normally reported as r = (a value between -1 and +1), squaring them makes then easier to understand. The square of the coefficient (or r square) is equal to the percent of the variation in one variable that is related to the variation in the other. After squaring r, ignore the decimal point. An r of .5 means 25% of the variation is related (.5 squared =.25). An r value of .7 means 49% of the variance is related (.7 squared = .49).

A correlation report can also show a second result of each test - statistical significance. In this case, the significance level will tell how likely it is that the correlations reported may be due to chance in the form of random sampling error.

The t-distribution was used to test whether correlation coefficient is significantly different from zero. To carry out this test the researcher put the null hypothesis in the form that there is no correlation between the variables currency fluctuation and export volumes for small business

H_0: $\rho = 0$ (There is no relationship between rand fluctuation and export volumes for small business)

H_1 : $\rho \neq 0$ (There is a relationship between rand fluctuation and export volumes for small business)

It was assumed that rand fluctuation and export volumes for small business follow a bivariate normal distribution. The   test statistic following Pearson's correlation coefficient becomes:

correlations

		Rand fluctuations(Independent)	Exports receipts(Dependent)
Rand fluctuations(Independent)	Pearson Correlation	1	.581*
	Sig. (2-tailed)		.047
	N	12	12
Exports receipts(Dependent)	Pearson Correlation	.581*	1
	Sig. (2-tailed)	.047	
	N	12	12

*. Correlation is significant at the 0.05 level (2-tailed).

R=0.58

The result shows that there is a moderately positive relationship between rand fluctuation and export volumes of the small business. Is this result significant though?

Decision criteria

If $t_{calculated} < t_{critical}$ we accept H_0 and if $t_{calculated} > t_{critical}$ reject H_0

Critical Value using the student t distribution

Degrees of freedom=n-2

thus 12-2=10 degrees of freedom(df)

A significance level of 0.05 was used.

Critical value =2.23

T-calculated

$$t_{calculated} = \left| \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \right|$$ follows a t-distribution with n-2 degrees of freedom

$[0.58\sqrt{(12-2)}]/\sqrt{1-0.58^2}$

thus t-calculated=4.37
Outcome

$t_{calculated(4.37)} > t_{critical(2.23)}$

Conclusion

Using a 2-tailed test of student t-distribution at the 5% significance level, we reject H0 and conclude that there is a relationship between rand fluctuation and export receipts for small business

12. Analysis of results

The results on the two tests done show that there is enough evidence to reject the null hypothesis. Results on testing the correlation using the Pearson's correlation coefficient show that there is a moderately positive relationship between rand fluctuation and export receipts by manufacturing small business in South Africa (0.58).In other words about 34% of the variance is related

Similarly, results obtained when the student t-distribution is employed at 5% significance level show that there is a relationship between export receipts of small business and rand fluctuation. A fall in the exchange rate (when the rand depreciates) has a positive impact on the export performance of manufacturing small business in South Africa and vice-versa.

Discussion on research findings

A weaker currency (depreciation) stimulates exports by decreasing the price of the product/service and vice versa. Whilst this fact has been known by economists from time immemorial, there has not been much empirical evidence to back it up, particularly with respect to the South African market. Munyama and Tondani's study actual concluded that there is no statistically significant relations ship between currency fluctuation and export performance. Studies by Sekansi (2008) as well as Bah and Amusi (2003) suggest a negative relationship between rand fluctuations and export performance of the South African market. Perhaps the point to bear in mind is that the currency fluctuations should not be seen as random. It is argued here that it is not the fluctuation per se that affect the export performance but rather fluctuation towards a certain direction. Where the currency loses value, the corresponding impact would be to stimulate export and vice versa.

13.Recommendations and conclusion

Given that South Africa operates within a <u>flexible exchange rate regime</u>, the value of the rand, like any commodity, is determined by the market forces of supply and demand. The demand for a currency relative to the supply will determine its value in relation to another currency.

Theoretically, the demand for a floating currency – and hence its value – changes continually based on a multitude of factors. In the case of the rand, its current <u>weakness</u> can be attributed to a myriad of structural problems facing the local economy.

The main determinants of a currency's value include demand for a country's goods and services. This is closely linked to the growth and national income of its main trading partners.

Equally important is the domestic interest rate. If it is high it is likely to attract foreign capital, causing the exchange rate to strengthen. But high inflation can wipe out the benefit of high interest rates to foreign investors.

In line with the findings from the study, the following recommendations are suggested
1. Devalue the rand to stimulate export growth
This is actually the major finding from the study. The devaluation move must be weighed against its potential disadvantages namely that imports become expensive. This paper argues that expensive imports are actually a benefit to the local economy as this forces the importers to substitute the intended imports with local products thus creating jobs and improving living standards for the locals.
2. Support the small business units on their export drive
Factors hindering small players from making an impact on the export front are well documented. They lack the financial muscle, they lack information on markets and marketing and they are caught up in the government's red tape. Support could therefore be multi-faceted and include dimensions such as financial support, tax holidays, marketing initiatives, export tours and technical assistance. Support could also focus on entering new markets and developing new products. Policies are also needed to enhance export orientation of firms which are only marginal exporters, and to shift their export orientation as a vent for surplus production to a long

term involvement in and commitment to the export market. Such commitment may require small firms to undertake significant investment in production capacity as well as marketing and product development in new markets.

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