

FINANCIAL CRISIS, CURRENT ACCOUNT AND EXCHANGE RATE DYNAMICS IN SOUTH AFRICA 1990-2012

Madiba, P., Uwilingiye, J. and Wilson M.K.

Abstract:

The 2008/09 financial and economic crisis triggered a recession in Europe which has affected its trading partners such as South Africa. The fall in foreign income has resulted in worsening current account deficit in South Africa. Many analysts believe that the deteriorating current account deficit has led to depreciation of the rand. In this paper, we examine this relationship using the monetary approach to exchange rate determination where assets are assumed to be perfect substitutes and macroeconomic variables play a significant role in the exchange rate determination through their effect on the current account. Using a time varying structural vector autoregression, where the sources of time variation are both the coefficients and the variance we empirically demonstrate how changes in current account balance affect the exchange rate in South Africa for the period 1990 to 2012.

JEL Codes:

F10 - Trade: General

F31 - Foreign Exchange

F32 - Current Account Adjustment; Short-term Capital Movements

C11- Bayesian Analysis

C15- Statistical Simulation Methods, Monte Carlo Methods

Keywords:

Current account, foreign exchange, trade flows, time varying coefficients

INTRODUCTION

Since the 2008/09 global financial and economic crisis which triggered a recession in Europe and affected its trading partners, many countries have been battling to reduce their large current account deficit, South Africa being one of those countries. South Africa's current account recorded its largest deficit in nearly four years in the second quarter of 2012 with the deficit gap widening to 6.4% of GDP (SARB, 2012). Trade deficit for January 2013 was expected to be 7.6billion but the actual trade deficit balance was 24.5billion which is 3 times the estimate (SARS, 2013). These increases in the deficit were in response to subdued external demand; partly attributed to sovereign debt crisis in Europe, which now accounts for a declining share of total manufactured exports at around 29% (SARB, 2012). Possible causes of current account deficit can be attributable to external and internal shocks that have an impact on export volume.

South Africa as a developing country is vulnerable to the state of the economy of its major trading partners as those activities or shocks can have detrimental impacts on the domestic current account and induce a change in the level of exchange rate. The vulnerability of South Africa's economy to external shocks is made worse by the fact that the South African economy relies more on export-led growth. Therefore an unfavourable disturbance in major trading partners as a result of a recession or economic slowdown hit the domestic current account with a lag and depreciates the exchange rate.

Internal shocks such as inflation and domestic income can also have a significant impact on exports hence the current account. A wide gap between domestic and foreign inflation can impact negatively on domestic exports. When inflation in one country is more than that in a competitive country, exports from former country will be less attractive compared to the other country. This means that the quantity demanded abroad for the domestic goods will be less and this will result in a drop in export volume. South Africa's inflation rate is relatively high compared to its major trading partners, which increases appetite for imports, further worsening the current account.

Unless current account deficit is offset by financial account of balance of payments, it can impact on domestic exchange rate, through its influence on the supply and demand of

currency. When the domestic current account is in deficit it shows that the domestic country is spending more on foreign goods than it is earning, hence foreign currency becomes scarce [in other words, foreign reserves drop]. This implies that the domestic country requires more foreign currency than it receives through sales of exports and such an excess demand for foreign currency lowers the domestic exchange rate. As a result of consistent current account deficit this has put the domestic currency under pressure resulting in the rand losing 17% value against the US dollar since 2010 making it one of the most unstable and unpredictable currency at the moment (OECD, 2013). The South African Rand has been ranked as the worst performing currency amongst 25 emerging market currencies according to the Bloomberg in May 2013 hitting a four year-low against the dollar.

Very little research examined the asset approach model of exchange rate determination in South Africa. There are studies that have examined asset approach model to exchange rate determination in South Africa papers by Brink and Koekemoer (2000) and Chinn (1999). They assessed the asset approach to exchange rate determination focusing on one group of asset approach which is the monetary approach model of exchange rate determination. They find that factors such as M3, GDP and inflation that influence the current account have an impact on the exchange rate. They excluded other factors or variables in the model which are the role of interest rates and exchange rates in determining the current account position.

This paper differs from previous studies on current account and exchange rate relationship in South Africa by taking into account the effect of exchange rate on the current account position. The causality effect between the two variables will be analysed focusing on how current account affects exchange rates and how exchange rates in turn impact on the current account balance. This study will try and bridge the gap by analysing the causality effect and incorporating exchange rate as one of the determinant of current account position.

The widening current account deficit in South Africa poses serious questions about exchange rate and it is therefore important to investigate the relationship between current

account and exchange rate in South Africa. Does a casual relationship exist between the current account and exchange rate in South Africa? This paper explores the relationship between current account and exchange rate in South Africa using the asset approach model of exchange rate determination for the period 1994-2013 against the US dollar.

We will use the asset approach model of exchange rate determination. Recently it is the most used and preferred model of exchange rate determination from the past traditional flow approach model. Exchange rate reacts quickly and changes every day as in the asset approach compared to goods markets. My approach is the same with other past studies as the variables used are the same but the time period used differ.

In this study emphasise will be given to one group of asset approach model of exchange rate which is the monetary approach. Under this model assets are assumed to perfect substitutes and macroeconomic variables plays a significant role on the exchange rate determination through their effect on the current account. The macroeconomic variables to be used in this model are the following: domestic and foreign money (M3), domestic and foreign income (GDP), domestic and foreign interest rates, domestic and foreign inflation and exchange rate

This paper is structured as follows the second section assesses the exchange rate and current account under the asset approach model of exchange rate determination, the third section examines the impact of external shocks on the current account and the current account pass-on effects on the exchange rate, the third section assesses the causal relationship between the current account and exchange rate in South Africa and the last section draws the conclusion and recommends some policies.

OBJECTIVES OF THE STUDY

The main objectives of this paper aims (i) to assess the relationship between the current account and exchange rate in South Africa, (ii) to investigate whether causality relationship runs in both direction or ways, (iii) to examine how exchange rates are determined under the asset approach model of exchange rate determination to which monetary approach

belongs and (iv) to assess if whether external or internal shocks are the main cause of persisting current account deficit and weakening rand.

LITERATURE REVIEW

In this section, we argue that unfavourable external disturbances negatively affect the current account, and unless offset by the financial account of balance of payments, the deficit would cause the exchange rate to depreciate.

Effects of a reduction in foreign income of trading partners.

South Africa being an open economy and also an emerging market, it is vulnerable to global economic shocks, particularly those of its major trading partners. External disturbances, positive or negative, can spillover to emerging economies like South Africa whose economic growth depend largely on the export led-growth. Lately the country has been recording continuous current account deficit and experiencing volatile and unpredictable exchange rates as a result of subdued external demand and economic slowdown in major trading partners.

External shocks that influence the current account have a significant impact on the movement of exchange rate. Slight disturbances in the economy of trading partners affect the domestic exchange rate through current account pass-on effects. Economic slowdown of trading partners has a negative impact on the domestic current account as it decreases the exports demanded by the trading partners. When foreign income decreases it serves as a restriction to foreign consumers as their income is curtailed and this will result in few domestic exports demanded abroad. This will result in a trade deficit and thus exchange rate will depreciate.

According to Berument and Kilinc (2004), Schmitt-Grohe, (1998), Bah and Amusa (2003) and Weliwita and Tsujii (200) unfavourable external shocks such as economic slowdown in major trading partners negatively impact the domestic current account and determine the movement of exchange rate. Foreign income fluctuation plays a crucial role on the exchange rate movement through its impact on the domestic current account. Foreign income determines the quantity that will be demanded by foreign consumers given their

present income level. And as such a slight variation will reduce the income capacity thus leading to a decline in the trade flows. The decline in demand for domestic goods will lead to depreciation on the exchange rate as less domestic currency will be demanded by foreign partners to pay for imported goods.

However, other studies such as Arize, et al., (2000), Senhadji and Montenegro, (1999) and Ling et al., (2008) argue that economic slowdown in major trading partners doesn't necessarily imply a deficit in the current account and depreciation in the exchange rate. They state that there is a negative relationship between foreign income and trade balance in the long-run. This is rather astounding because a reduction in foreign income serves as a limitation to foreign consumers as their means or income declines limiting their consumption and spending. Their overall demand will decrease as a result buying less of imported goods (domestic goods) thus leading to a decline in domestic exports demanded abroad. And this shows that domestic exports are sensitive to changes in foreign income. Foreign income and domestic exports are positively correlated therefore a reduced source of foreign income does not reflect well on the domestic exports as they will now demand less of domestic goods (Cheung, 2005).

Furthermore Grier and Smallwood (2007) find that in the 18 countries that they examined, which include South Africa, foreign income does not have an impact on exchange rate and current account. This means that economic slowdown in major trading partners would not lead to a reduction in exports, current account deficit and exchange rate depreciation. They state that there are other factors such as foreign inflation and interest rates that might influence the current account apart from foreign income of major trading partners. This might be true, even though it is expected that, when foreign income declines domestic exports fall. The demand for domestic exports is influenced by foreign income and as such a reduction in foreign income will reduce the quantity of domestic exports goods demanded and thus reduce the current account position and induce a change on the exchange rate (Goldstein and Khan 1985).

Effects of a decrease in foreign interest rates.

An economic slowdown may prompt monetary authorities to reduce interest rates so as to boost the economy. As stated by Elwell (2013) monetary stimulus can be applied by lowering interest rates. During 2008/09 global financial and economic crisis, some developed economies experienced a recession and it was recognized that to stimulate growth, interest rates have to be decreased. Monetary authorities such as, the Fed and European Central Bank lowered interest rate to almost zero. One consequence of the reduction in foreign interest rates would be exchange rate depreciation which would make exports in those countries relatively cheaper and imported goods expensive. Hence, demand for foreign goods and services in those countries would dampen. This reduction in appetite of foreign goods would cause or widen the current account deficit of major trading partners such as South Africa, resulting in depreciation of the rand. According to Vergil (2002), low foreign interest rates tend to decrease the exchange rate, which then lead to an increase in the prices of imported goods rendering them uncompetitive thus leading to a decrease in aggregate imports demanded by foreign consumers.

However, Wu (2011) refutes that argument, stating that low foreign interest rates will not lead to a decrease in the exchange rate of that country but rather exchange rate will increase and thus encourage imports demanded by foreign consumers. If this does happen, it means that decreasing foreign interest rates lead to an appreciation of foreign currency and this will result in an increased demand for South African exports. This is so because the value of the currency has increased and it will be cheaper to buy imported goods. Low interest rates will not increase the exchange rate because, when interest rates are low investors are discouraged from investing in that country, hence there will be less demand for that currency and the exchange rate will decrease.

Exchange rate also affects the current account through interest rate differential. Interest rate differential (IRD) causes a change in the exchange rate as per Granger (1969) where $(i^f - i^d)$ lead to $\% \Delta E$. It can also be stated that $\% \Delta E$ lead to $(i^f - i^d)$, then when foreign interest rates decrease relative to domestic interest rates under the monetary approach model of exchange rate determination where assets are perfect substitutes we expect the

financial traders to buy assets at home in order to take advantage of higher returns, the home currency appreciates in value due to an increased demand. An appreciated exchange rate will result in imports being cheaper and our domestic goods being expensive abroad as such imports will outpace exports and

Effects of low inflation in major trading partners.

Another exogenous factor which affects the current account and hence the exchange rate is relative prices. Relative prices are linked to the exchange rate through the theory of Purchasing Power Parity (PPP) which states that, if a domestic economy has a relatively high inflation rate, it is expected that domestic exchange rate will depreciate in order to equalise prices in domestic and foreign countries. According to Rawlins (2004), Sek, et al. (2012), Ahmad and Ahmed-Ali (1999) and Adrangi, et al. (2011)) a reduction in the foreign inflation has negative impact on domestic exports through exchange rate pass-through. This is so because a reduction in foreign inflation discourages imports, with their price becoming relatively higher. This shows that a slight variation between domestic and foreign inflation have detrimental impact on the domestic current account because inflation influence the exchange rate movement. A reduction in foreign inflation induces an appreciation on the domestic exchange rate thus resulting in a deficit in the domestic current account as it encourages imports and discourages export demand.

Achsani, et al. (2010) and Rana (1983) refutes stating that a reduction in foreign inflation does not impact domestic exchange rate and current account in other countries but it depends on a country's exchange rate sensitiveness to inflation changes. Their empirical results show that there is no relationship between a reduction in foreign inflation and a domestic country's exchange rate and hence the current account. While this might be true a reduction in inflation means that the general price of goods has decreased and the internal value of the currency has also declined relative to other currencies this will decrease the exchange rate of that country. As such the price of foreign goods will be cheaper and competitive abroad but the imported goods will be expensive as the value of their currency has lost its purchasing power against the currency of their trading partners.

Therefore it is expected that when the foreign inflation rate decreases this will have an upward pressure on domestic exchange rate and adversely impact the current account.

Exchange rates affect the current account through its impact on relative prices. When prices of traded goods increases this will decrease the appetite of domestic goods demanded abroad and also the domestic consumers will demand less of domestically produced goods in preferential to imported goods thereby increasing the demand for imports. The exchange rate movement impact the quantity of exports and imports, thereby resulting in a change on the trade balance and thus on the current account position. It affects the price at which goods can be traded between countries. An exchange rate appreciation means that the external value of the currency has increased relative to other currencies and as such it increases the price of domestic goods when converted into foreign currency, but decreases the price of foreign goods when converted into the domestic currency. This will lead to foreign countries demanding less of domestic goods as they will be expensive, while resulting in domestic country demanding more imported goods as they will be affordable and less costly, and as result the current account position declines (khan et al., 2012).

To summarise, we have examined literature which shows the debate on how external disturbance in major trading partners affects domestic current account and exchange rate. We observe that external shocks induce a change in macroeconomic variables such as exports, and interest rate and relative prices hence current account and exchange rates. With regard to foreign income, there are proponents who claim that domestic exports are affected and hence current account. The opposing view argues that foreign income does not impact on exchange rate. On interest rates, we observe that expansionary economic policies may result depreciation of exchange rate making imports relatively more expensive, hence worsen current account of trading partners. On relative prices, there is a debate on whether exchange rate depreciates or not, due to rise in foreign inflation. The strength of these effects on current account and hence exchange rate can only be evaluated empirically, but before then, we examine the role of domestic or internal shocks.

The impact of internal shocks on the current account and exchange rate.

There are other economic analysts who argue that the current debacle of large current account deficits and volatile and unpredictable exchange rate is due to internal shocks such as labour tensions, low production, commodity prices, low domestic income (GDP) and wide inflation gap between South Africa and its major trading partners. As according to the BER who believes that the social and labour tensions are the key drivers of the current economic performance in the country. Currently there has been a large number of labour unrest in the country which might have directly or indirectly caused or resulted in widening of the current account deficit and constantly depreciating the Rand. Labour tension in the mining sector disrupted output and contributed to the weakening of the Rand and it also hampered export performance. The Reserve Bank in its December 2012 quarterly bulletin noted that the widespread industrial strife “contributed to the country’s lacklustre export performance”.

Effects of labour tensions on the current account and exchange rate.

Labour unrest in the mining sector can be one of the factors that resulted in the Rand hitting the 4-year low against the dollar and the persistent current account deficit. The Marikana incident and the prolonged labour strikes resulted in mining output declining by 50% quarter to quarter annualized percentage in 2012 according to the BER (2012). The halted production lead to less mining products or goods exported and as such export performance fell. Calculation performed using Econometrix has shown that a loss of one day production lead to 1% fall in the exports.

Effects of low or softer commodity prices on the current account and exchange rate.

Effects of low or stagnant domestic income (GDP) on the current account and exchange rate

The exchange rate is one of the most important variables in an open economy as it affects other macroeconomic variables such as inflation rate, interest rates, and real GDP. A country’s exchange rate policy has an impact on the domestic current account position, where steps to manage exchange rate fluctuations impact on the current account. For instance, to increase international competitiveness, a country can willingly devalue its

exchange rate. A devaluated exchange implies that domestic exports will be less expensive and competitive abroad and foreign imports will be expensive and this will lead to few imports demanded thus resulting in trade surplus (Corden, (2009), Khan et al. (2012) and Bahmani-Oskooee (2001)).

There exists a causal relationship between exchange rates and current account balance. For instance, an appreciation of the exchange rate triggered by any factor other than the current account decreases the trade balance, since net exports drop thereby leading to an unfavourable current account position. On the other hand, a decline in the current account caused by any factor other than exchange rate decreases the demand for domestic currency relative to foreign currency thus resulting in depreciation in the exchange rate. Hence the two variables are interlinked with each other where a slight movement in one variable impacts on the other variable (Branson, (1985) and Khan et al. (2012)).

Furthermore Edwards and Garlick (2008) states that this relationship depends on trade flows responsiveness to exchange rate movement. A small responsiveness to exchange rate movement will result in less impact on trade flows while high responsiveness leads to a larger impact on trade flows. In a small responsiveness a slight movement in exchange rate can result in no impact on trade flows in this case exchange rates have to move by a large amount in order to have an impact on trade flows. Whereas in a high responsiveness a slight change on the exchange rate will have a huge impact on country's trade flows. Edwards and Willcox performed an econometric test, testing the responsiveness of exports to domestic-currency price with respect to exchange rate and they found that it ranges between 0.7 to 0.9. This means that 1% depreciation in exchange rate raise exports prices by between 0.7 to 0.9.

Exchange rates react strongly to the news or announcement of the current account position. An unexpected increase or decrease in the current account balance impacts on the movement of exchange rate. For instance an unexpected current account deficit results in exchange rate depreciating. An abrupt or sudden decline in exports volumes and an increase in demand for imports caused by an unexpected driving factor will lead to a simultaneous decline in trade account which hinders the current account position thus

resulting to a fall in the level of exchange rate. Under the asset approach model for exchange rate determination decreased demand for domestic asset (domestic currency) relative to foreign asset (foreign currency) leads to a depreciation of domestic currency against foreign currency. Where an unexpected decrease in foreign asset accumulation (current account balance) reduces the domestic wealth and thus followed by a decline in the exchange rate (Kiheung, 1986).

However there are other studies that refute this casual relationship see (). According to their studies they studied this relationship using the asset approach model but focused on the portfolio balance model and they found that causality does not run either way or in both directions i.e. from current account to exchange rate, but not from exchange rate to current account. They argue that current account does have an impact on the exchange rates but the exchange rate in turn does not have an impact on the current account. This is rather puzzling because exchange rates affect factors that determine the current account position. Exchange rates affect the prices of imports and exports (trade balance) which determines where the current account will be in surplus or deficit. As stated by Khan et al. (2012) that the exchange rates affect the current account through relative prices.

RESULTS WILL BE RELEASED LATER.