

SOUTH AFRICA'S MACROECONOMIC RESILIENCE TO EXTERNAL SHOCKS: A COMPARISON TO ITS BRICS PARTNERS

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—Abstract —

South Africa has to address the challenges of slow economic growth, poverty, and inequality in the face of precarious macroeconomic imbalances—foreign capital funds deficits of savings to investment, of tax income to government spending, and of exports to imports. Just how susceptible is the South African economy to an external shock? This paper extends a 'resilience indicator' developed by Rojas-Suarez (2015) and applies it to the case of South Africa. Such an indicator was constructed for South Africa and the other BRICS economies. The values for the period 2000–2014 were compared, and it was found that South Africa has become less resilient to an external shock during this period than its BRICS partners. South Africa is, therefore, more vulnerable to an external shock than the other BRICS economies.

Key Words: *Financial crisis, BRICS, macroeconomic resilience, South Africa.*

JEL Classification: F32; E61; F41.

1. INTRODUCTION

South Africa has to address the challenges of slow economic growth, poverty and inequality in the face of precarious macroeconomic imbalances—foreign capital inflows are required to balance deficits of savings to investment, of tax income to government spending, and of exports to imports. This leaves the economy vulnerable to slowdowns in foreign capital flows. Smit, Grobler and Nel (2014) showed that if current deficits had to be reversed through contractionary policy, the impact on the economy would be severe. In the context of the tapering of quantitative easing in the US, the flow of funds away from emerging markets and rising global interest rates, South Africa—together with two of its BRICS partners—has been grouped with the so-called ‘fragile five’ (Brazil, Indonesia, South Africa, India, and Turkey). The BRICS economies are: Brazil, Russia, India, China, and South Africa.

This paper aims to answer the following two questions: How susceptible is the South African economy to an external shock? and How does South Africa compare to its BRICS partners? The resilience indicator proposes a way in which to measure South Africa’s resilience to external shocks—in order to manage a risk to the economy we need to be able to measure it. Emerging economies compete for global capital flows and if an economy is seen to be vulnerable, or susceptible to crisis, compared to its peers, it requires hedging by its firms and action by its policymakers. The measures used in the paper aim to capture the capacity to withstand the impact of an external shock, and the room to adjust policy to counteract a shock.

This paper extends a ‘resilience indicator’, developed by Rojas-Suarez (2015), and applies it to the case of South Africa and its fellow BRICS economies. We constructed the indicator for the BRICS economies and compared the pre- and post-2008 financial crisis values.

Section 2 provides an overview of the literature on imbalances and indicators of crises. Section 3 explains the resilience indicator developed by Rojas-Suarez (2015) and extends it to the case of the BRICS economies. An overview of the data used to construct the resilience indicator is provided in section 4, together with the results. Conclusions follow in section 5.

2. LITERATURE REVIEW

The term imbalance, as used in this paper, is defined as a significant and sustained deviation in asset prices or other financial variables from its long-run trend. A large and persistent trade deficit, or current account deficit, is typically seen as a macroeconomic imbalance (Kahn, 2010; Bean, 2003). Global imbalances cannot be reduced to only a large current account deficit in a single country, but are rather a result of various factors such as savings, investment and portfolio choices (Obstfeld & Rogoff, 2005). Global imbalances have important implications for national and international financial markets, their stability, and the level of long-run interest rates (Boissay, 2011; Llewellyn, 2006).

Recent literature on the topics of global imbalances and financial crises argues that the current period of global imbalances differs from past episodes in that: (i) capital flows now stem mostly from emerging markets to industrialised countries, (ii) there exists greater financial interdependence with more integrated global financial markets and more opportunities for international diversification, and (iii) a favourable global macroeconomic and financial environment with high growth rates, low volatility and easy global financing until the 2008 financial crisis (Bracke, Bussière, Fidora & Straub, 2010; Caballero, Farhi & Gourinchas, 2006). Bracke et al. (2010) wrote that a combination of structural and cyclical determinants has led to an increase in global imbalances. Structural factors are related to imperfections in financial markets of rapidly growing emerging economies, which have an impact on the size and direction of global capital flows from emerging to industrial markets. Cyclical factors are related to saving and investment patterns in the private and public sectors.

The current account is held by many as the key measure, or symptom, of global imbalances. There are four basic models of the current account: the elasticities approach, the absorption approach, the intertemporal approach, and the savings–investment balance approach. These different models of the current account all show the current account as balance of production, consumption and prices in the economy. There is an empirical literature that examined the idea of balance and imbalance as a predictor of crisis.

2.1 Current account imbalances as an indicator of future crisis

Many crises have been preceded by large current account deficits: that of Chile in 1981, Finland in 1991, Mexico in 1994, Thailand in 1997, the United States in 2007, Iceland in 2008, and Greece in 2010 (Obstfeld, 2012). Some countries,

however, accumulate large current account imbalances without experiencing financial crises. There are also nations that have experienced financial crises without preceding large current account deficits, such as the banking crises in Switzerland and Germany during 2007–2009. The empirical literature has not conclusively established a strong predictive relationship of the current account for subsequent financial crises. This section presents an overview of some recent contributions to this field.

Frankel and Rose (1996) used the current account balance as percentage of GDP as a measure of vulnerability to external shocks (currency crashes) in emerging markets. They found that large current account deficits did not significantly increase vulnerability to subsequent external shocks. Edwards (2002) supported their conclusion that the current account does not significantly increase vulnerability to subsequent currency crises when the current account is not financed by traditional means. Edwards (2002) also found that larger current account deficits significantly increase the likelihood of subsequent crises when the current account is allowed to be financed through traditional means. An important outcome was that the effects of relatively large current account deficits on financial crises are dependent on the definition of a crisis and the world regions included in the analysis.

Frankel and Saravelos (2010) reviewed the literature on early-warning indicators and found that the current account had some influence in forecasting financial crises, but less so than variables such as international reserves and real exchange rate overvaluation.

Gourinchas and Obstfeld (2012) investigated the dynamics of various macroeconomic variables before, during and after different types of financial crises. They distinguished between the experiences of advanced and developing economies during the 2007–2009 financial crisis and the post-1973 crises. One of the variables investigated was the current account. They found that current account deficits often precede crises, but that the current account was not statistically significant in forecasting financial crises. Catão and Milesi-Ferretti (2013) studied the determinants of external crises using data from 1970–2011 for advanced and developing economies. In opposition to Gourinchas and Obstfeld (2012), they found that the ratio of net foreign liabilities to gross domestic product, and current account deficits are significant crisis predictors.

In earlier work, Borio and Lowe (2002) conducted a study on indicators of banking crises for developed and emerging market economies from 1960–1999. They found that an increase in the ratio of private sector debt to gross domestic product and a drop in equity prices precede banking crises.

Mendoza and Terrones (2008) reported that (i) emerging market economies experience larger, more persistent and asymmetric fluctuations in macroeconomic variables, (ii) many of the recent emerging market crises were associated with credit booms but that not all such booms end in crisis, and (iii) credit booms in emerging markets tend to be preceded by large capital inflows, whereas developed economy credit booms tend to be preceded by productivity gains or financial reforms.

Jordà, Schularick and Taylor (2011) studied data from 14 developed economies from 1870–2008 to determine if external imbalances increased the risk of a financial crisis. They found that credit growth is the single best forecaster of financial instability. Credit growth tends to be higher and short-term interest rates lower preceding global financial crises. Stronger reversals of imbalances and deeper slumps are associated with recessions caused by crises compared with normal recessions.

3. MEASURES OF RESILIENCE TO CRISIS

The literature review indicated how certain variables may indicate imbalances and crisis. If these variables can indicate crisis, they could also be used as indicators of resilience to crisis. This paper follows the approach of Rojas-Suarez (2015). She described a country's resilience to external shock as:

- Firstly, the capacity to withstand the impact of an adverse external shock, in that it does not result in: (i) a sharp slowdown of economic growth, (ii) in a severe contraction in the rate of growth of real credit, or (iii) financial instabilities.
- Secondly, that the country has the room to adjust policy in order to counteract the impact of a shock.

Rojas-Suarez (2015) identified several such resilience measures and constructed an index of the resilience of countries to external shocks.

The capacity to withstand the impact of an adverse external shock depends on a country's need for external financing, and its external solvency and liquidity positions. A financial or a trade shock can hamper economic growth prospects, and reduce economic and financial stability. Rojas-Suarez (2015) argues that a country will be more resilient to shocks when the following ratios are small: (i) current account deficit to GDP, (ii) total external debt to GDP, and (iii) short-term external debt to gross international reserves. The current account deficit represents the external financing need, whereas the two debt ratios are measures of solvency and liquidity. She emphasises the point that full exchange rate flexibility will not resolve liquidity constraints during a crisis—a sharp depreciation will not generate export revenues fast enough (Rojas-Suarez, 2015:7).

The ability to respond to a shock depends on the fiscal and monetary policy stance. Is there scope to implement countercyclical policy? Rojas-Suarez (2015) argues that a country will be more resilient to shocks when the ratio of the budget deficit to debt, and the government debt to GDP, are also small. Smaller ratios would leave the fiscal authorities in a better position to undertake countercyclical policy, i.e. by increasing government spending or cutting taxes. In a similar vein, if the country is already facing inflationary or deflationary pressure, it will be difficult for monetary authorities to respond. A nation will be more resilient to the shock of inflation decreases within the central bank's target range. Finally, policymakers' ability to respond to a crisis will also depend on the presence of credit booms or busts. If a shock results in banking problems, the central bank needs room to manoeuvre and keep interest rates low.

Together, these seven indicators can be used to construct an overall measure of resilience to crisis.

4. A RESILIENCE INDICATOR

A simple indicator of countries' resilience to financial crisis can be constructed, following Rojas-Suarez (2015:17). The resilience indicator is not an absolute indicator, but rather a relative indicator among countries in a particular sample. It, therefore, indicates a country's resilience in comparison to that of other countries included in the sample. Rojas-Suarez (2015) focused her analysis on several Latin American, emerging Asian, and emerging European countries. This paper applies the analysis to the case of South Africa and the other BRICS countries.

The indicator is constructed as follows:

- The following seven variables are used in constructing the resilience indicator: the ratio of the current account to GDP; total external debt to GNI; short-term external debt to total reserves; fiscal balance to GDP; government debt to GDP; inflation; and domestic credit to the private sector by banks.
- The variables are standardised in order to ensure comparability. This is done by subtracting the cross-country mean and dividing by the standard deviation.
- Where an increase in value indicates less resilience, the variables are multiplied by -1 . These include the standardised values of external debt to GDP, short-term external debt to gross international reserves, the deficit to GDP, debt to GDP, and the level of inflation.
- The aggregate resilience indicator value is the mean of the seven standardised variables.

Since the resilience indicator is a relative measure, the BRICS countries can then be ranked according to the resilience indicator values.

The data series are obtained from the World Bank: World Development Indicators database for the period 2000–2014. Due to data unavailability, 2015 and 2016 are excluded from the sample. Where the data could not be sourced from The World Bank, data were sourced from Trading Economics.

Figure-1a shows the current account balance to GDP for the period 2000–2014. All the BRICS countries, except Russia, experienced increased current account deficits when comparing 2000 to 2014. Of the BRICS countries, only Russia and China maintained current account surpluses during this period. South Africa's current account deficit reduced between 2000 and 2002, then it steadily worsened until 2008. Between 2008 and 2011 the deficit decreased, only to increase thereafter. Compared to the other countries in figure-1b, South Africa's relative position worsened from third position in 2000 to fifth in 2003, where it remained until it improved to third position in 2010 and 2011, only to return to fifth position for 2013 and 2014. Russia and China, the only two BRICS countries with surpluses, competed for first and second position. South Africa's relative current account position is worse off compared to its partner countries. This may be due

to South Africa not implementing policy adjustments that could have started to address the deficit of savings to investment.

Figure-1a: Current account balance (% of GDP)

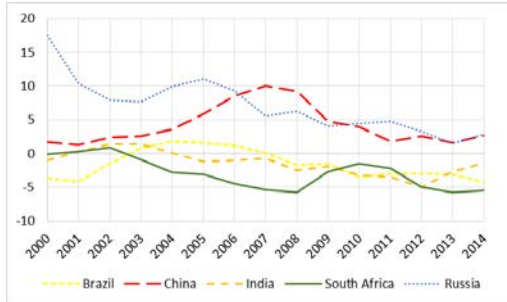
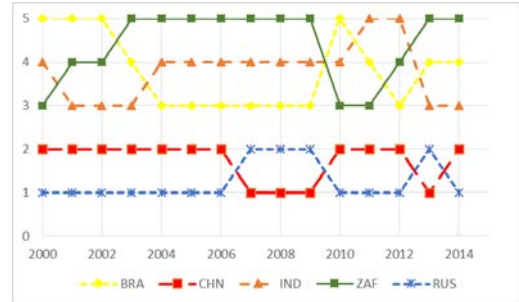


Figure-1b: Relative resilience: Current account balance



Source: Author’s own calculations

Changes in the countries’ external solvency position are shown in figure-2a. Russia reduced their external debt to GNI from 63.2% in 2000 to 19.8% in 2012 (2013 and 2014 values are not available). South Africa’s external indebtedness increased from 19% in 2000 to 42% in 2014. Such a change is relevant for highly indebted countries according to Rojas-Suarez (2015:5), which South Africa is not. From figure-2b it is clear that South Africa’s relative position has worsened from second position in 2000 to last position from 2012.

Figure-2a: Total external debt (% of GNI)

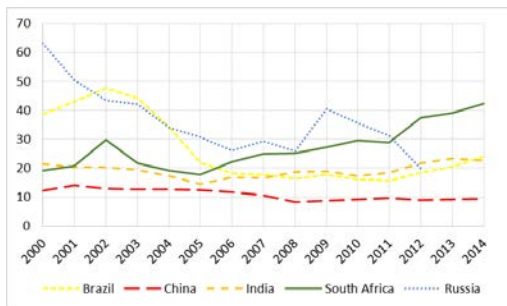
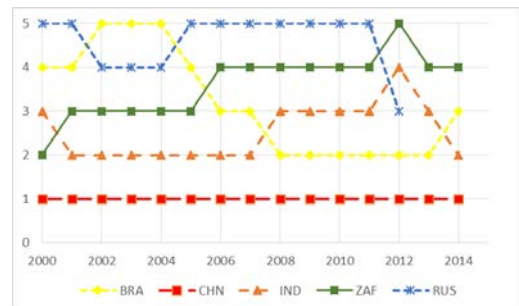


Figure-2b: Relative resilience: Total external debt



Source: Author’s own calculations

Figure-3a shows the changes in the countries' external liquidity positions. Countries with more short-term external debt or smaller international reserves have an increased vulnerability to external shock—they would find it difficult to make the payments due right after an adverse shock that limits access to international credit markets. South Africa improved its absolute value over this period by accumulating large reserves. From 2000 to 2014, short-term debt increased by 366%, and total reserves increased by 637%, resulting in a 57% reduction in the ratio of short-term debt to reserves. However, compared to the other BRICS countries South Africa's absolute position is much larger. It also remained in last position on the relative resilience for this variable. Brazil has notably increased its resilience from fourth position to first position by accumulating large reserves with less growth in short-term external debt.

Figure-3a: Short-term external debt (% of total reserves)

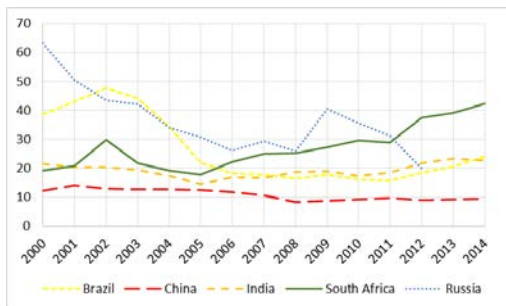
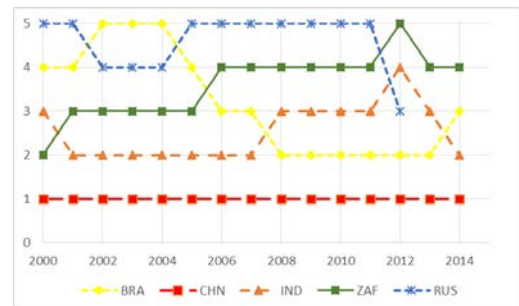


Figure-3b: Relative resilience: Short-term external debt



Source: Author's own calculations

In sum, when it comes to the capacity to withstand an external shock, South Africa is not badly positioned in absolute terms—the current account deficit is less than 6%, it is not highly indebted, and it has improved its liquidity position. In relative terms, however, compared to the BRICS, South Africa is in the least resilient position—it has the largest current account deficit, largest indebtedness, and the weakest external liquidity position. What about the ability to respond to crisis?

Figure-4a shows the fiscal balance to GDP and it is clear that South Africa had a lot less room to manoeuvre policy just after the 2008 financial crisis. Prior to the crisis (2006 and 2007) South Africa had a small surplus, which deteriorated to a

deficit post-2008. Increased government spending over the period helped to soften the blow of the 2008 global financial crisis, but the government is now in a position where it needs to consolidate its finances. Austerity measures are in place and tax reform is being investigated. Russia experienced a large deterioration in the fiscal balance from 2008 to 2009 due to the financial crisis experienced in Russia, but made a quick recovery. Russia was the most affected from the 2008 financial crisis out of the BRICS. In relative terms Russia remained in the most resilient position out of the BRICS, excluding 2009 and 2010. South Africa lost the most positions relatively.

Figure-4a: Fiscal balance (% of GDP)

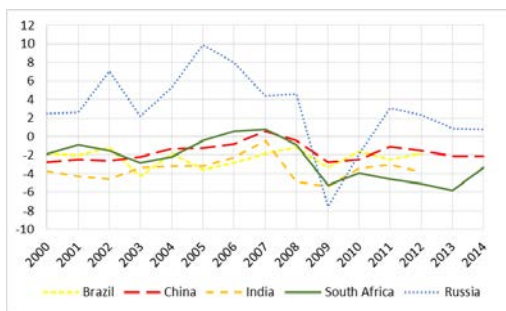
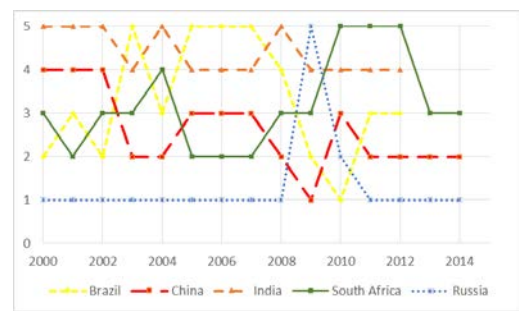


Figure-4b: Relative resilience: Fiscal balance (% of GDP)



Source: Author's own calculations

Similar to the fiscal balance, the government debt to GDP ratio also speaks to the fiscal authorities' ability to undertake counter-cyclical policy. Figure-5a shows that most of the BRICS positions' worsened after the 2008 global financial crisis. In South Africa the pre-2008 decline in debt was followed by an increase in government debt from 27% in 2008 to 47% in 2014. South Africa has less government debt to GDP than India and Brazil and is therefore in third position.

Figure-5a: Government debt (% of GDP)

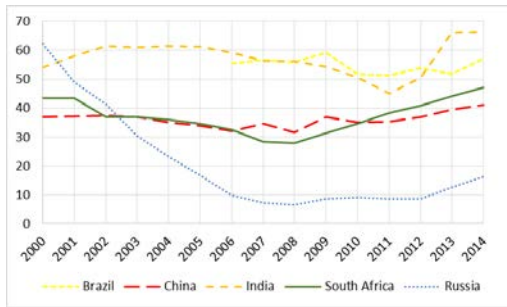
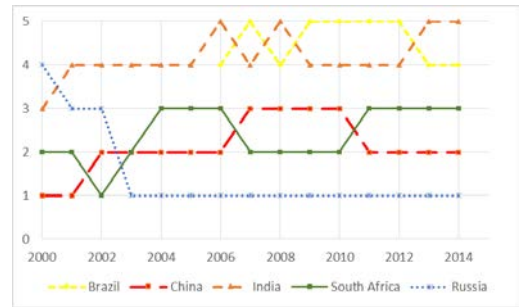


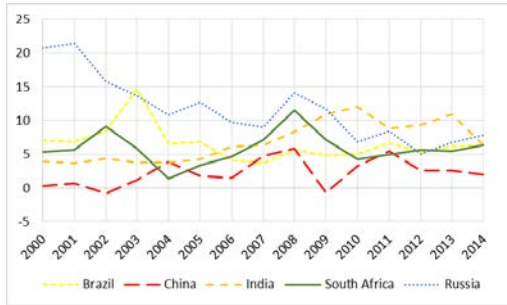
Figure-5b: Relative resilience: Government debt (% of GDP)



Source: Author’s own calculations

The final two measures of the ability to respond to a crisis are less sophisticated versions of those used by Rojas-Suarez (2015). She used the squared value of the deviation of inflation from its announced target, and a measure of credit booms or busts constructed using the Hodrick-Prescott filter. This paper simply uses the consumer price inflation rate and domestic credit extension to the private sector by banks as a percentage of GDP. In the case of a relatively high inflation rate or a credit boom, monetary authorities may find it difficult to react to an external shock. Figure-6 and figure-7 show that for the period 2008–2014 inflation in South Africa decreased and domestic credit extension fell, giving policymakers more room to manoeuvre. In relation to the other BRICS, South Africa is mostly in third position.

Figure-6a: Inflation (annual %)



Source: Author’s own calculations.

Figure-6b: Relative resilience: Inflation (annual %)

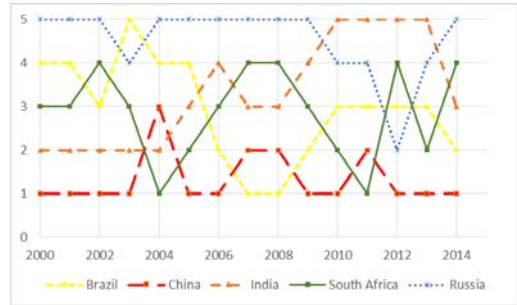
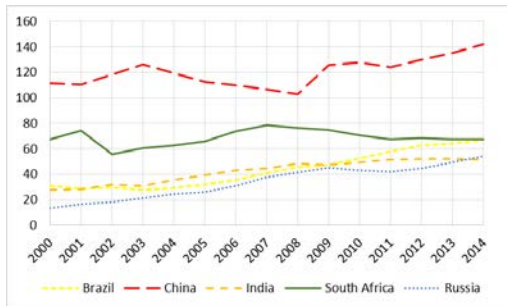
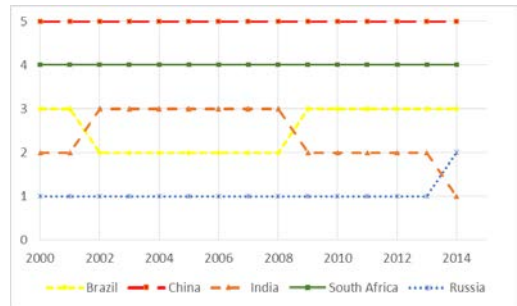


Figure-7a: Domestic credit to private sector by banks (% of GDP)



Source: Author’s own calculations.

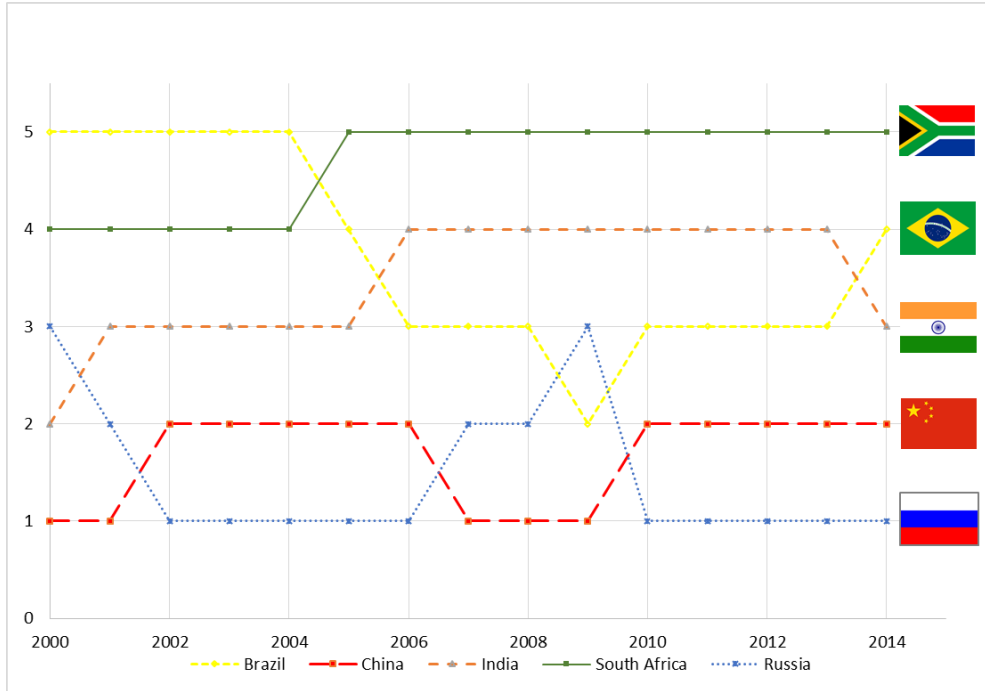
Figure-7b: Relative resilience: Domestic credit to private sector by banks (% of GDP)



The overall resilience indicator was constructed, the results of which are illustrated in figure-8. The figure illustrates the ranking of the BRICS countries from least resilient (5) to most resilient (1) for the period 2000–2014.

The ranking shows that Russia is the most resilient BRICS country in 2014, with South Africa being the least resilient. Prior to the 2008 global financial crisis in 2007 the rankings were the same, except for China which was the most resilient ahead of Russia. South Africa has been the least resilient from 2005 to 2014; for 2000 to 2004 South Africa was in fourth position ahead of Brazil. According to this indicator South Africa is the least resilient to external shocks compared to the other BRICS countries.

Figure-8: BRICS rankings in terms of the resilience indicator



Source: Author’s own calculations.

Figure-9a shows a plot of the resilience index values with 2000 on the y-axis and 2007 on the x-axis. Figure-9b shows a plot of the resilience index values with 2007 on the y-axis and 2014 on the x-axis. The index values are constructed relative to the cross-country mean, which implies that positive values indicate greater than average resilience. Countries in quadrant I showed better than average resilience in the y-axis year, but this had declined to below average in the x-axis year. Those countries include India for 2000/2007 and Brazil for 2007/2014. The countries in quadrant II were above average resilient in both periods—this includes China in 2000/2007, and China and Russia in 2007/2014. Quadrant III includes countries which improved in the resilience ranking from below average to above average—Brazil and Russia for 2000/2007. Those countries in quadrant IV showed below average resilience in both periods—South Africa for 2000/2007, and South Africa and India in 2007/2013. South Africa has

therefore showed below average resilience for both year-group comparisons and is less resilient to external shocks than the other BRICS countries.

Figure-9a: BRICS rankings in terms of the resilience indicator

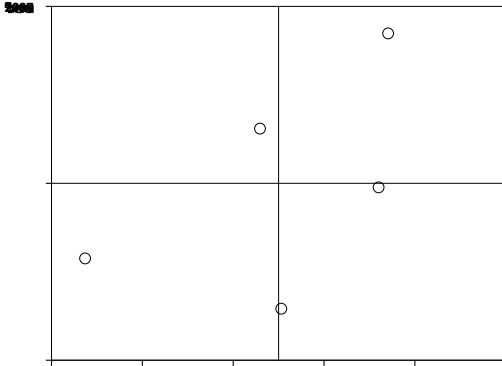
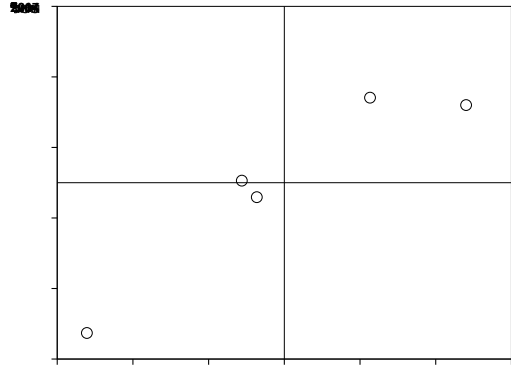


Figure-9b: BRICS rankings in terms of the resilience indicator



5. CONCLUSION

This study answered the question: how susceptible is the South African economy to an external shock and reported on the construction of a resilience indicator based on that devised by Rojas-Suarez (2015) to do so. The indicator showed that South Africa is less resilient to an external shock than its BRICS partner countries—ranking as least resilient among the group since 2005. The description of the different indicators showed that when it comes to withstanding an external shock, South Africa is not in a bad position—the current account deficit has been narrowed and the indebtedness and liquidity positions improved. The South African economy seems to be more vulnerable in terms of limited policy room to manoeuvre. This speaks to the current challenges facing policymakers in the face of a possible ratings downgrade:

- slow growth has raised doubts about the government's ability to balance the budget and repay debt in the face of social spending pressures;
- fiscal consolidation and austerity leaves limited room for stimulating growth;

- supply-side shocks (drought and depreciation of the rand) have added to inflationary pressure;
- So even with slow growth, demonstrably credible policy requires contractionary measures, leading to slower growth and pressure on the fiscal position.

Measuring resilience may support policymakers. It is clear that South Africa is, by comparison to the other BRICS countries, in a worse position.

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