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Republic of South Africa Systematic Country Diagnostic

An Incomplete Transition: Overcoming the Legacy of Exclusion in South Africa

Background note

Systemic, Sectoral Risk and the Myth of a Corporate Savings Glut

Vincent Dadam and Nicola Viegi

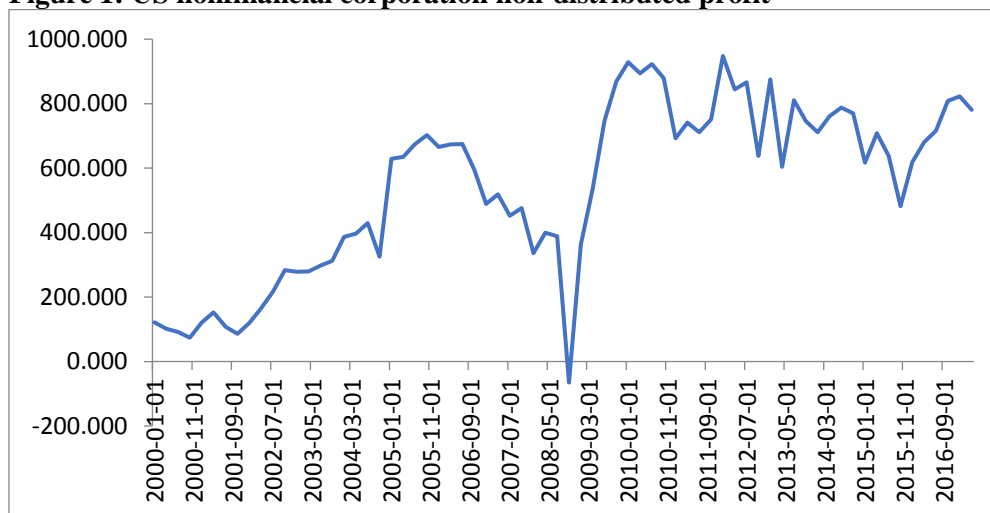
Systemic, Sectoral Risk and the Myth of a Corporate Savings Glut

Vincent Dadam¹, Nicola Viegi²

Introduction

Corporate savings have been increasing since the 2008 financial crisis. These savings were also rising before the crisis and were at that point the topic of various influential speeches, including the ones from Bernanke (2005, 2007) where the author addressed the issue of current account surpluses of emerging Asian economies and oil exporters. The figure below displays a massive collapse in nonfinancial corporate savings for US firms during the crisis. Corporate savings subsequently recovered and have since reached figures noticeably higher than the pre-crisis levels.

Figure 1: US nonfinancial corporation non-distributed profit



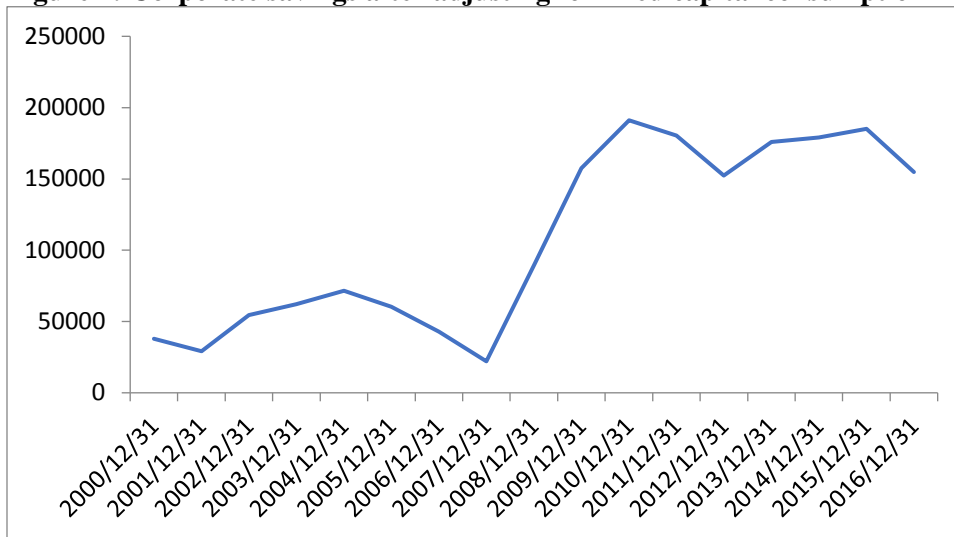
Note: Figures are in billion dollars. Source: St Louis Federal Reserve Bank.

A similar pattern was observed in South Africa. Figure 2 and 3 reports different measures of corporate savings. The first is the savings after consumption of fixed capital and inventory valuation adjustment. The collapse is less dramatic but quite noticeable. Further, the recovery is higher than pre-crisis level in a way similar to US firms' performance.

¹ University of Pretoria

² University of Pretoria and South African Reserve Bank Chair in Monetary Economics

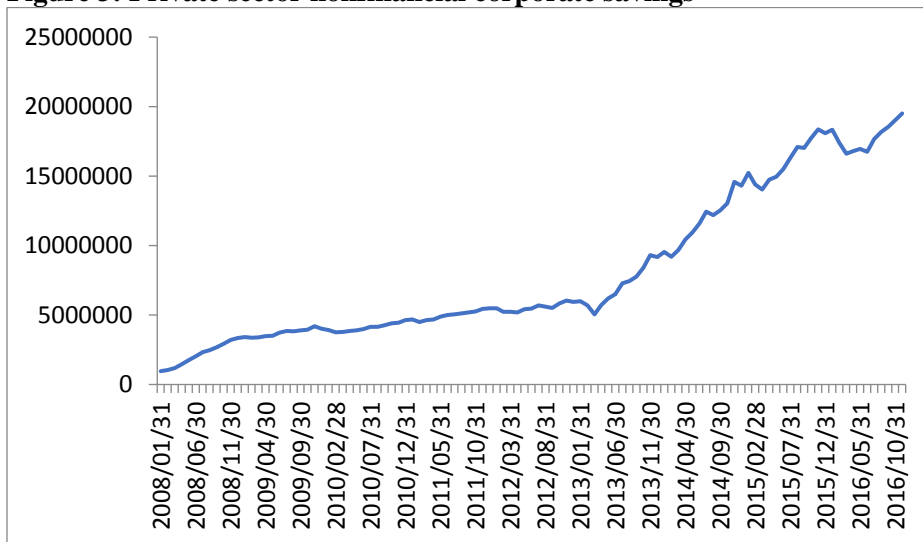
Figure 2: Corporate savings after adjusting for fixed capital consumption



Note: Figures are in million rand. Source: Quantec and SARB

The second measure of corporate savings is captured by private sector nonfinancial firms' deposits in South African banks. It is evident to notice that the pickup in savings is delayed by a couple of years compared to the previous measure. Although corporate savings appear rather stable in the few years right after the crisis, they are significantly higher now relatively to their values in previous years.

Figure 3: Private sector nonfinancial corporate savings



Note: Figures are in thousands of rand. Source: Quantec and SARB

Various reasons may explain this corporate saving glut. First of all, firms tend to increase their savings in bad times when the economy is not performing well. This is therefore a precautionary measure. Second, uncertainty about the business climate can significantly and negatively impact firms' decisions to invest in a particular country. South Africa has witnessed over the years various events that have deteriorated the country's level of business confidence on multiple occasions through increased uncertainty in terms of economic policy. Further factors include fewer domestic investment opportunities while the appetite for investment abroad is on the rise, balance sheet management, acquisition and consolidation of other firms, etc.

This paper. This note attempts to debunk the myth of corporate savings glut in South Africa. For the better part of the Zuma presidency, many have referred to it as investor's strike. However, with the wave of optimism that came with the election of Cyril Ramaphosa as the president of South Africa, improved sentiment is yet to materialized in terms of investment pick up. The first section empirically investigates the impact of uncertainty (both at sectoral and systemic levels) on investment in the manufacturing industry in South Africa. The second section discusses in further details the factors influencing corporate cash hoarding and assesses whether South African firms' behavior is peculiar or not.

Fixed capital investment under uncertainty

Early theories made the assumption that firms' decision to invest was rather static. This implies that to adjust the stock of capital, optimization decisions were instantaneous and came at virtually no further cost. These theories therefore did not account for the dynamic aspect of investment.

Modern conceptions of investment are for the most part dynamic models and diverge from original theories on three points. First, they introduced the partial or complete irreversibility aspect of the firms' decision to embark into an investment project. Essentially once initiated, at least the initial cost of investment is partially sunk and cannot therefore be recovered in the case one were to change his/her mind. Second, future rewards of investment are associated with a certain element of uncertainty, which suggests that any venture is linked to a probability of earning greater or smaller profit. This leads to the third point, which is the timing of the investment itself. Indeed, irreversibility and uncertainty notions imply that there is an opportunity cost to investing now rather than at some point in the future. In particular, postponing an action of investing could lead to gathering additional information about the future. It is important to highlight that evidently, the information gathered cannot provide full certainty about the future.

Although these three points interact to determine the optimal decision of investors, this section focuses particularly on the impact of uncertainty on firms' decision to invest in manufacturing South Africa. Middle income economies are often vulnerable to systemic risk (often measured by policy uncertainty), which in turn can negatively impact investment. This creates a risky environment which may lead firms to increase their savings now in order to gather further information about the political climate in the country of interest.

Political unrest in South Africa is a relevant issue and its impact on investment is a field of research worth looking into. From the events related to the Apartheid regime pre-1994, to the recent increase in government distrust sentiment (which led to dramatic fluctuations in the exchange rate in recent times), the combination of these factors along with mismanagement in the electric/energy sector, may have potentially created a risky environment to do business in South Africa. In particular, policy uncertainty significantly deteriorates business confidence levels and therefore reduces private sector investment spending. This therefore suggests that policy uncertainty could be a major obstacle to economic performance in South Africa. However, it is important to mention that even though business confidence has improved in the past few months, certain issues are still relevant. A recent example is the updated version of the third Mining Charter which remains very controversial. In particular, increased uncertainty surrounding the Charter coupled with the fact that it increases regulatory requirements in the sector may indeed scare away investors.

The general consensus in the literature is that uncertainty negatively affects investment in advanced countries. In middle income economies on the other hand, the findings are ambiguous. Therefore, in order to contribute to the debate, this section investigates the effects of uncertainty on investment in manufacturing South Africa following Fedderke (2004). The empirical specification is given by:

$$I_{i,t} = b_0 + b_1 \ln Y_{i,t}^e + b_2 \ln uc_{i,t} + b_3 \sigma_{sect,i,t}^2 + b_4 \sigma_{sys,t}^2 + b_5 Z_{i,t} + \varepsilon_{i,t}$$

in which I_t represents the investment rate, Y_t^e is the expected output, uc_t is the user cost of capital, σ_{sect}^2 and σ_{sys}^2 denote respectively sectoral and systemic uncertainty, and finally Z_t captures a vector of additional variables including liquidity constraint (as a measure for credit rationing), skills ratio and a couple of measures for openness.

The variables used in this estimation are defined as follows (see appendix for a definition of all variables). The investment rate is given by the log change of fixed capital stock in machinery and other equipment for 28 sectors in the South African manufacturing industry. Expected output is an unobservable variable, therefore it is defined following Fedderke (2004) and Ferderer (1993) as a log change in real value added. The user cost of capital is defined by taking into account the impact of short term interest rate (which is assumed to be the discount rate), the depreciation rate, and tax rate.

As mentioned in the equation to be estimated, two measures of uncertainty are defined. The first is the sectoral uncertainty, given by the deviation of output from potential output, both in log terms. This is calculated by applying the Hodrick-Prescott filter to the real value added for each sector. The second measure of uncertainty is defined as the index of policy uncertainty compiled by Hlatshwayo and Saxegaard (2016). The authors compiled the index based on ‘news chatter’ in the press in a way pioneered by Baker *et al* (2015). This index has the main advantage of considering the most recent and relevant developments in the South African policy scene. This includes external shocks, the energy crisis and investment regulation uncertainty. In short, the index captures both domestic and external pressures.

The model uses a dynamic heterogeneous panel in a way similar to Fedderke (2004). In particular, the model uses pool mean regression techniques, which has the advantage of modeling the short term response of variables while also recognizing the presence of dynamics generated by the long run equilibrium relationship. The dataset covers the period 1985-2016 and considers 28 sectors in the South African manufacturing industry. The estimation results are standardized which allows for a better interpretation of the findings across regressors. The estimation results are reported in table 1.

Table 1: Estimation results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Long run								
Expected output:	1.816***	1.592***	1.914***	1.844***	1.858***	0.308***	0.322***	0.477***
$\ln Y_{t-1}^e$	(0.17)	(0.13)	(0.19)	(0.18)	(0.18)	(0.1)	(0.09)	(0.08)
User cost of capital:	-0.161***	-0.073**	-0.155***	-0.104***	-0.151***	-0.198***	-0.14***	-0.154***
$\ln uc_{t-1}$	(0.24)	(0.22)	(0.26)	(0.25)	(0.26)	(0.14)	(0.12)	(0.11)
Export:								0.194***
exp_{t-1}								(0.04)
Short run								
Expected output first dif:	0.203**	0.399***	0.273***	0.224***	0.259***	0.154***	0.344***	0.378***
$d. \ln Y^e$	(0.07)	(0.1)	(0.06)	(0.07)	(0.07)	(0.02)	(0.09)	(0.09)
User cost first dif:	-0.036***	-0.035***	-0.039***	-0.036***	-0.035***	-0.04***	-0.039***	-0.041***
$d. \ln uc$	(0.04)	(0.05)	(0.04)	(0.05)	(0.04)	(0.04)	(0.05)	(0.05)
Sectoral risk first dif:	-0.025**	-0.015*	-0.032***	-0.02**	-0.034**	-0.03**	-0.022*	-0.029**
$d. \sigma_{sect}^2$	(0.05)	(0.05)	(0.05)	(0.06)	(0.05)	(0.07)	(0.6)	(0.07)
Systemic risk:	-0.012**	-0.013***	-0.011**	-0.012**	-0.011**	-0.016***	-0.016***	-0.016***
$\sigma_{syst,t-1}^2$	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0002)	(0.0003)
Credit rationing first dif:		-0.121**					-0.104**	-0.099**
$d. liqcons$		(0.22)					(0.19)	(0.19)
Openness first dif:			0.253**					
$d. open$			(0.05)					
Import first dif:				0.324**				
$d. imp$				(0.07)				
Export first dif:					0.124**			0.071
$d. exp$					(0.09)			(0.07)
Log skill ratio:						0.274**	0.23**	0.144*
$\ln sr$						(0.24)	(0.2)	(0.16)
Error correction term	-0.05**	-0.05**	-0.05**	-0.05**	-0.05**	-0.15***	-0.14***	-0.14***
	(0.02)	(0.02)	(0.018)	(0.019)	(0.018)	(0.02)	(0.02)	(0.02)

Note: ***, **, * respectively denotes significance at 1%, 5% and 10%. Standard errors in parentheses.

The results confirm that uncertainty significantly impede investment in manufacturing South Africa. This is a finding that applies for both measures of uncertainty, *i.e.* sectoral uncertainty captured by volatility in output, and systemic (policy) uncertainty. In particular, a one unit increase in sectoral uncertainty will decrease investment in the manufacturing sector by 2.53 percent in the baseline model in column (1), and by 2.93 percent in the full model specification in column (8). Moreover, a one unity increase in systemic uncertainty will decline investment in the manufacturing sector by 1.21 percent in the baseline specification, and by 1.61 percent in the full specification of the model. This finding is consistent throughout specifications (1) to (8) where further variables from the Z vector are controlled for in the estimation procedure. The findings are also in line with Fedderke (2004) and international empirical evidence for developed economies. This is an important finding for South Africa, given that middle income countries are often exposed to these types of risk. It is also important to emphasize that the coefficient on expected output is positive and significant, while that of the user cost of capital is negative and significant as well. Both findings are theoretically coherent.

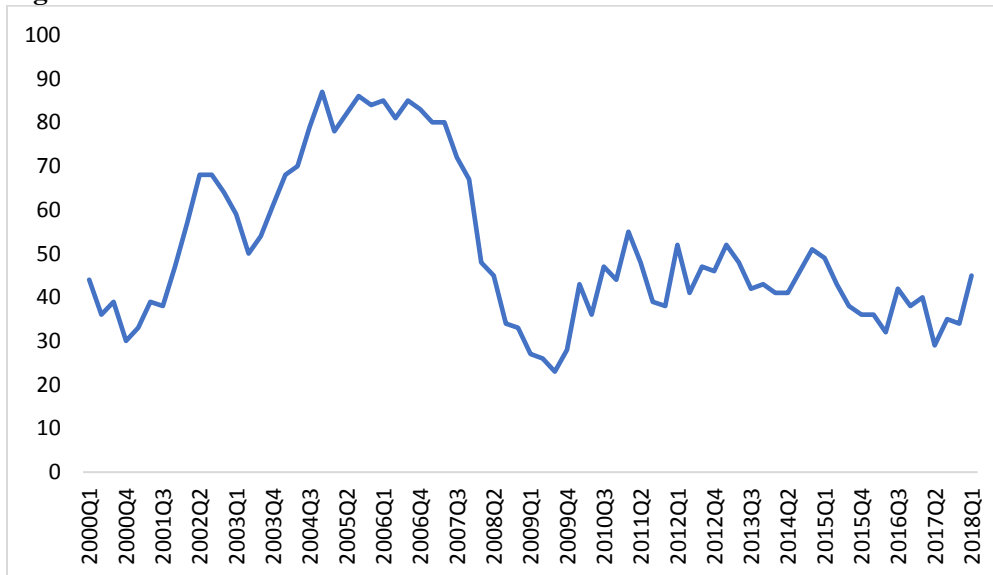
The results for control variables are as follows. Credit rationing defined as the liquidity constraint in specification (2) negatively and significantly impacts investment in the manufacturing sector in South Africa. This is consistent with the studies of Lewis (2002) and Chadra *et al* (2001a, b) as reported by Fedderke (2004). Note that the proxy for credit rationing in this report is calculated following Fedderke (2004) and defined as the availability of funding internal to firms. This is simply because when credit rationing is present in an economy, firms cannot rely on credit markets as a source of investment financing, but instead on their own source of funding (given in the estimated equation by the return on capital). The skills ratio in specification (6) has a positive and significant effect on investment. This therefore implies that there is complementarity between skilled labor and capital goods which also suggests that skills intensive firms are more likely to invest in the manufacturing sector in South Africa. All proxies for openness are found to have a positive and significant impact on investment in specifications (3) through

(5). Finally, specification (8) accounts for the full model given by the estimated equation. The results are in line with prior expectations. Although the measure of openness considered in this specification (export penetration) keeps the right sign, it is not significant in the short run. In the long run however, the coefficient is both right signed and significant. It is worth noting that the error correction term keeps a sign coherent with economic theory and is significant throughout.

Why South African firms are increasing their savings

The estimation results provide an insight to why certain firms in South Africa might consider hoarding cash. Uncertainty is a major impediment to investment through the deterioration of the business climate, which in turn increases the risk of engaging into a particular venture. This is confirmed by the Bureau of Economic Research's index of business confidence in figure 4. The index significantly collapses during the crisis after a decent recovery from the 1990s. The pickup from the collapse has however been poor and well below pre-crisis levels, despite the election of Ramaphosa as the president of South Africa.

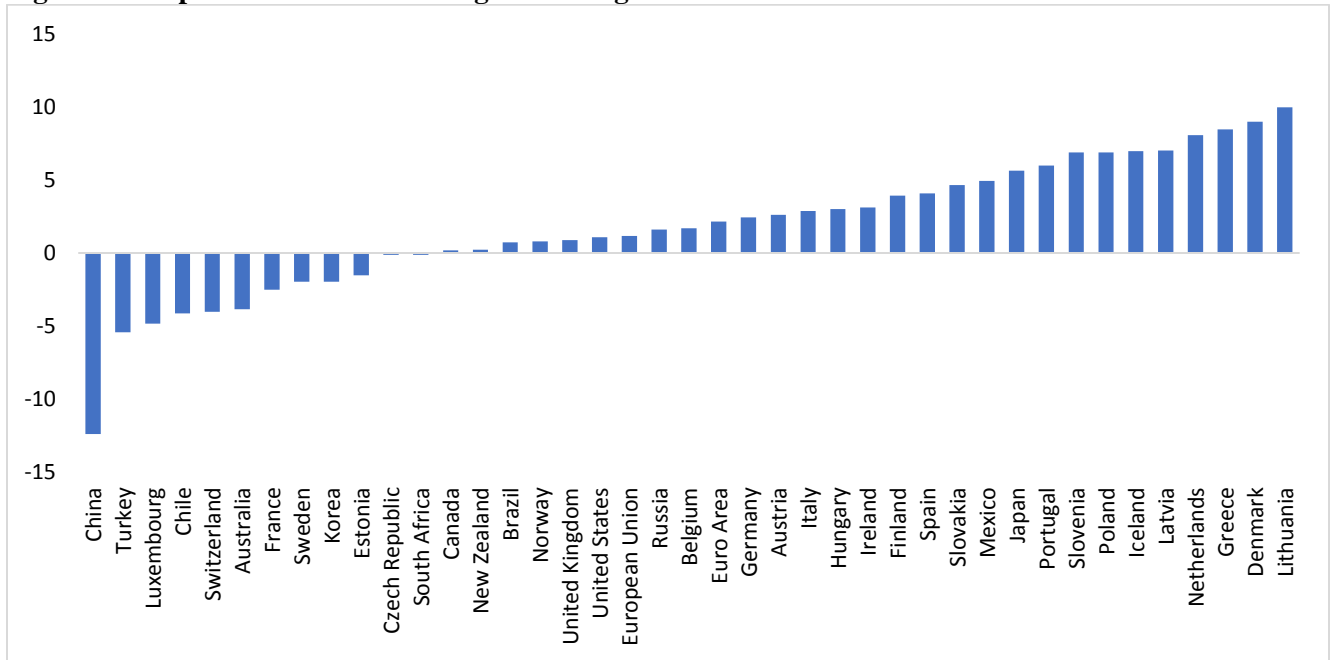
Figure 4: Business confidence index



Source: BER

Various companies listed at the Johannesburg Stock Exchange (JSE) have been raising capital. Hassan (2014) finds that in the first half of 2014, the amount raised was already 94 percent of the figure recorded during the pre-crisis boom in 2007. This finding is in contrast with the sluggish economic growth recorded and moderate growth in corporate borrowing at the domestic level, especially when compared with various OECD country as depicted in figure 5.

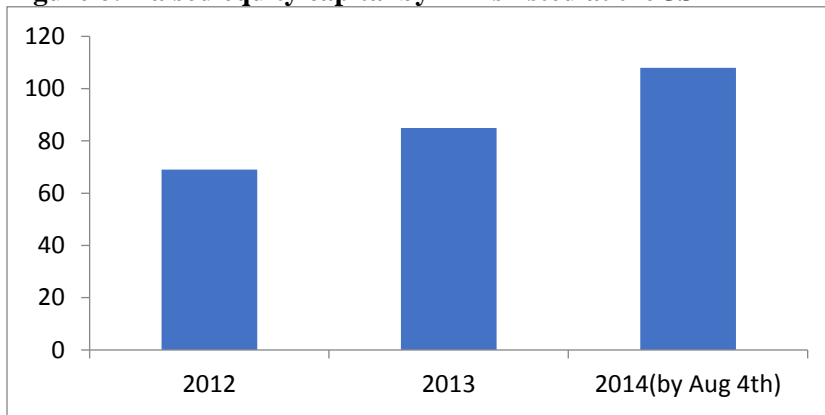
Figure 5: Corporate sector net lending/borrowing



Source: OECD data

Figure 6 shows that equity capital raised by JSE-listed firms grew from 69 billion rand to 108 billion rand by mid-2014. The question arising from this would be what would be the motive for raising this capital at all?

Figure 6: Raised equity capital by firms listed at the JSE



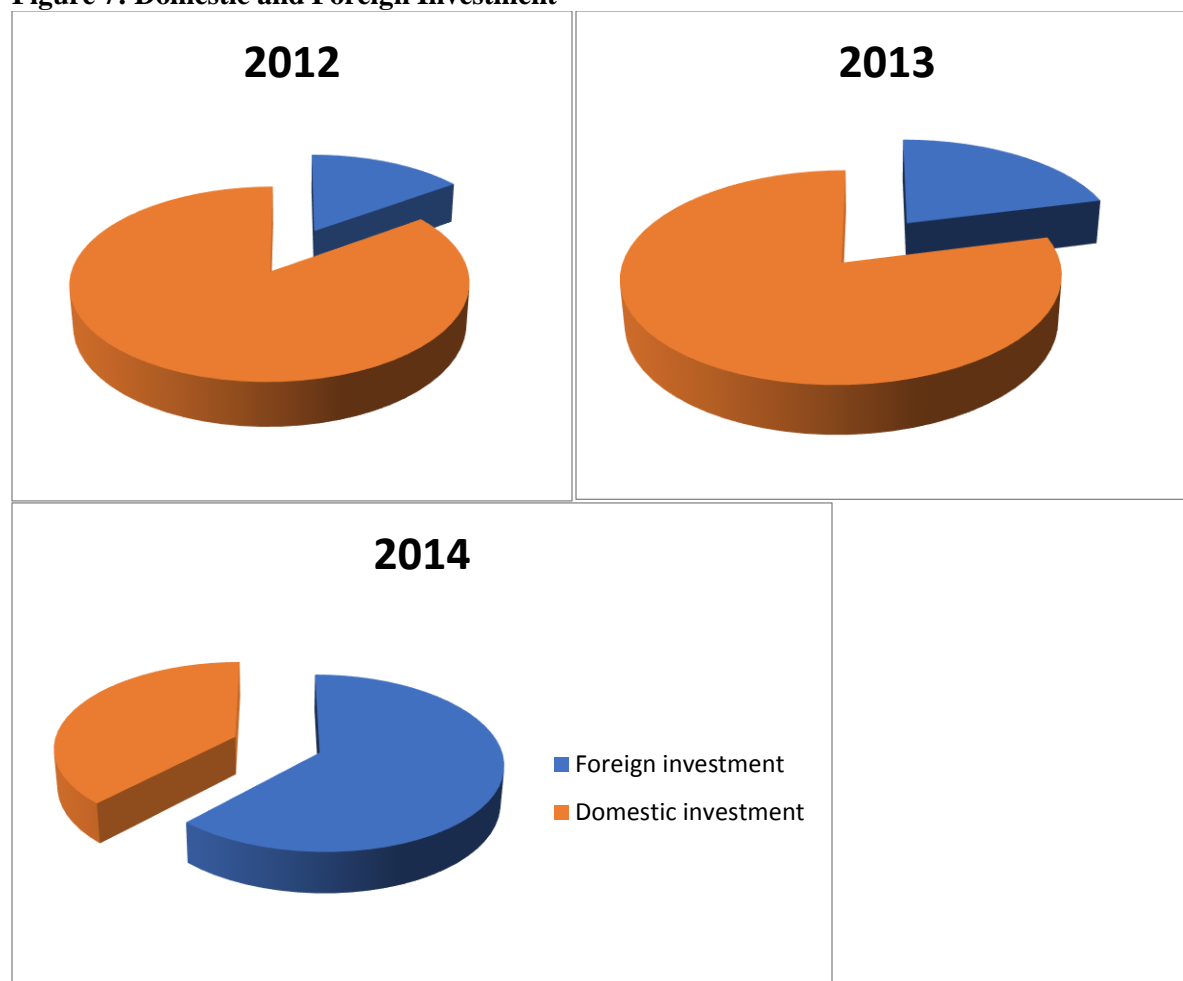
Note: Figures are in billions of Rand. Source: Hassan (2014)

JSE-listed firms have been raising capital for investment abroad. Hassan (2014) reports for instance that the largest issues in 2014 were used to fund foreign projects and acquisitions abroad, mainly in the fields of property, oil and gas, health and retail. This is the case of Oando for their venture in Nigeria, Mediclinic International funding the acquisition of a hospital in Geneva, Switzerland, Woolworth for the acquisition of an Australian retail chain; and the list goes on.

The piece of the pie for domestic investment has therefore been shrinking while that of investment abroad has been expanding. In particular, capital raised to finance foreign investment has grown from 15 percent

of 69 billion rand in 2012, to 21 percent of 85 billion rand in 2013, and finally 62 percent of 108 billion rand by mid-2014 (Hassan, 2014). This is shown in the figure below.

Figure 7: Domestic and Foreign Investment



Source: Hassan (2014)

Multiple developments in the South African scene are blamed for this reluctance to invest at home. In particular, investors would rather hold cash or expand abroad because of a stagnant South African economy, the decrease in commodity price and a weakly competitive export sector. In addition, growing distrust in the political power in place manifested by a highly volatile rand in recent years, has also significantly encouraged this kind of behavior by firms in South Africa. This indeed ties up with the story about uncertainty discussed in the previous section. Although confidence has improved in recent month, GDP numbers for the first quarter of 2018 shows this has yet to have a positive impact on investment.

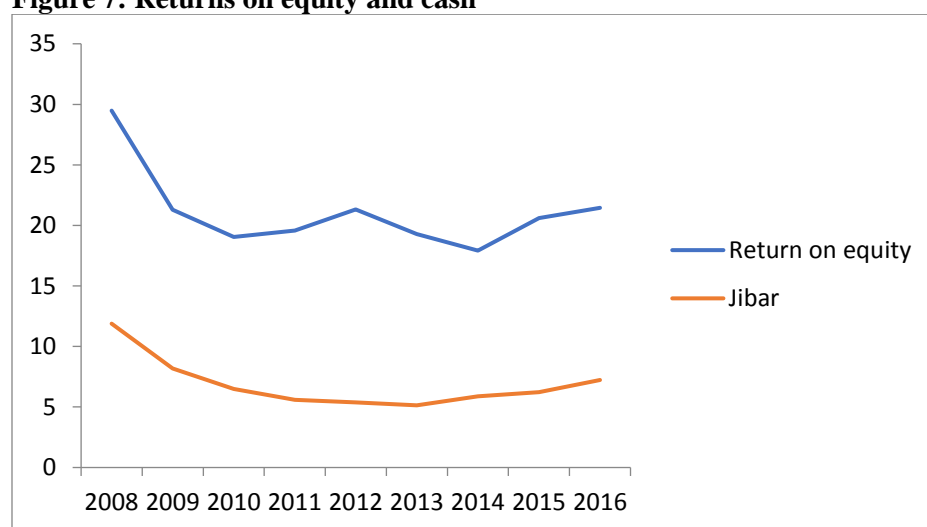
Cash hoarding is inversely correlated to GDP growth performance. Thus, when the economy is performing below par, companies react by increasing their reserve in cash relative to their assets as a precautionary measure. This has been advanced as the reason behind the global savings glut as a response to the financial crisis of 2008. Essentially, firms increase their cash holding during bad times in anticipation of poor earnings performance in the future. This behavior is often referred to as 'cash conservation' strategy, which firms usually adopt when the future of economic conditions is uncertain (Tambo and Theobald, 2017).

Many have therefore argued that in fact, firms' behavior in South Africa does not display peculiar features. For instance, after taking out the effects of the exchange rate to calculate cash holdings by nonfinancial companies in dollars, Tambo and Theobald (2017) find that cash held in dollar terms grew only by 3.6 percent on average over the past six years, while being stable between 50 and 58 billion dollars. Furthermore, using various measures of cash holdings including the cash to total assets and GDP ratios, they essentially find nothing particularly 'unusual' about most South African firms. The first is a good indicator of whether companies' cash holdings have outpaced the growth of total assets in the balance sheet, while the second ratio gauge cash holdings to GDP performance. Both measures display similar trends. In particular, they both reached their peak during the 2008 financial crisis, before relatively going back to their pre-crisis levels. This further emphasizes the argument that increases in cash holdings by companies are inversely related to economic conditions prevailing in a particular country.

Balance sheet management and depreciation further explain why firms hold cash. Most assets are constrained by a limited lifespan. Essentially, with time and usage, physical assets deteriorate and depreciate. Thus, firms must make provision for repairs when damages are manageable and for replacement in the worst of cases. This procedure is often referred to as amortization. Moreover, due to inflation and the rand depreciating, the companies in South Africa have experienced dramatic growth in their balance sheets. It appears therefore logical to conclude that cash provisions set aside to manage these expanding balance sheets have risen as well.

Finally, holding cash is expensive and costly to firms. This is explained by the fact in deciding to hold cash, firms give up the opportunity of earning higher returns if investing was instead the outcome. To gauge the opportunity cost of holding cash, the figure below shows the difference between a company's return on equity and that of cash if it was invested in the money market from after the crisis. The return on cash in the money market is given by the Johannesburg Interbank Agreed Rate (Jibar). It is important to highlight that the values for the Jibar and the discount rate are very similar. Therefore, accounting for one rather than the other virtually makes no difference.

Figure 7: Returns on equity and cash



Source: Quantec and SARB

The figure clearly shows the gap between the return on equity and the Jibar since the financial crisis. Thus, this result emphasizes that the interest paid on cash has been well below the potential earnings from investing. Even though that is the case, uncertainty about future earnings could still lead firms to increase their cash holdings, depending on their level of risk appetite.

Conclusion

This note has shown that policy uncertainty has a negative and significant impact on investment in South Africa. This finding is particularly important because South Africa over the years has been prone to events that have fueled policy uncertainty on multiple accounts and in turn deteriorated the business climate in the economy. This has essentially been amplified after the financial crisis. To emphasize this point, the business confidence index compiled by the Bureau of Economic Research (BER) has not gone back to its pre-crisis levels. The recent wave of optimism that came with the election of Ramaphosa as the president of South Africa has slightly boosted confidence but so far, this has failed to materialize into an increase in investment. Uncertainty could therefore provide an incentive for firms to increase their savings as their appetite for investment falls. Such a behavior is even more relevant when a country is in a recession and the economic conditions are not favorable.

South African firms have been increasing their savings for multiple reasons. The first reason is for precautionary measures since economic conditions are not favorable. Second, they have been raising capital for acquisition abroad therefore suggesting a decline in domestic investment appetite. Further, firms make cash provisions for amortization when physical assets depreciate or need to be replaced. Finally, with the increase in size for certain firms, the balance sheet grows as well. Consequently, cash holdings for the purpose of balance sheet management will logically increase.

South African firms' behavior is not however alarmingly peculiar. First, increased corporate savings are acceptable in bad times and currently, economic conditions are not quite ideal. Market expectations have been revised downward since the release of GDP numbers for the first quarter of 2018. Second when accounting for exchange rate and inflation dynamics, it appears the corporate savings in South Africa have not really increased at exorbitant rates. Similarly, taking account of cash hoarding for the sake of amortization and balance sheet management further emphasizes this argument. Further, holding cash is more expensive relative to returns on investment, unless the business climate is utterly degraded. Finally, as argued by Tambo and Theobald (2017), companies that display surpluses of cash in their balance sheet and intend not to invest further can distribute it in the form of dividend. Consequently, if shareholders had better and more productive ways of making use of that cash, they would pressure these companies to distribute their cash. This has not been occurring in South Africa.

Appendix

Data

The data used for the estimation is available on Quantec (www.quantec.co.za). In particular, the source is the South African data at the 3-digit SIC level. The focus here is the manufacturing industry. The 28 sectors of that industry include: Coke and refined petroleum products, basic chemicals, Other chemicals man-made fibers, Rubber products, Plastics products, Electrical machinery and Apparatus, Food, Beverages, Tobacco, Furniture, Other manufacturing, Basic iron and steel, Basic non-ferrous metals, Metal products excluding machinery, Machinery and equipment, Glass and glass products, Non-metallic minerals, Television, radio and communication equipment, Professional and scientific equipment, Textiles, Wearing apparel, Leather and leather products, Footwear, Motor vehicles, Parts and accessories, Other transport equipment, Wood and wood products, Paper and paper products, and finally the Printing, publishing and recorded media sector.

It is important to highlight that the data is standardized as well.

List of variables and descriptions:

I_t :	natural logarithm change in spending on machinery and equipment
Y_t^e :	natural logarithm change in sectoral value added at constant prices
$uc_{i,t}$:	natural logarithm change in the user cost of capital, calculated using the discount rate (interest rate), the depreciation rate and the tax rate
$\sigma_{sect,i,t}^2$:	sectoral uncertainty defined as output volatility: deviations from sectoral natural logarithm value added from potential value added, calculated using the Hodrick-Prescott filter.
$\sigma_{sys,t}^2$:	index of policy uncertainty, source: Hlatshwayo and Saxegaard (2016)
$liqcons_{i,t}$:	liquidity constraint calculated as the ratio of the net operating surplus to total stock of machinery and equipment
$open_{i,t}$:	openness ratio defined as the ratio of imports and exports to value added
$exp_{i,t}$:	export penetration defined as the ratio of exports to value added
$imp_{i,t}$:	import penetration ratio defined as the ration of imports to value added
$SR_{i,t}$:	skills ratio calculated as the ratio of the number of skilled and highly skilled workers to the number of semi-skilled and unskilled workers.

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