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Some implications of a sovereign risk rating downgrade for SA

The 2016/2017 National Budget outcome was seen by many as a make or break event for South Africa’s risk rating prospects. Although the minister of finance generally met expectations in terms of balancing limited resources with burgeoning demands, it is doubted that a single policy event – such as the National Budget – would have been sufficient to swing the views of international credit ratings agencies.

This note will briefly brief look at the past and current sovereign risk ratings of South Africa – also from an international perspective – while some of the aspects which matter most to ratings agencies will be highlighted. Some of the possible impacts – especially on the South African bond market – will also be pointed out.

A brief history of South Africa’s sovereign credit risk ratings

Credit ratings are neither absolute measures of default probability nor is it an exact science since there are future events and developments that cannot be foreseen. Credit ratings are also not intended as guarantees of credit quality or as exact measures of the probability that a particular issuer or debt issue will default.

Three major credit ratings agencies control approximately 95% of the global credit ratings business. These agencies have been awarding sovereign risk ratings to South Africa since the mid-1990s.

Generally speaking, Standard & Poor’s and Fitch ratings seek to measure only the probability of default. Nothing else matters — not the time that the issuer is likely to remain in default or the expected way in which the default will be resolved. Therefore, S&P and Fitch are not really concerned what the recovery value is, i.e. the amount of money that investors end up with after the issuer has defaulted.

Table 1: Long-term sovereign risk rating scales

Moody's	S&P	Fitch	Rating description	Numeric scale
Aaa	AAA	AAA	Prime	24
Aa1	AA+	AA+	High grade	23
Aa2	AA	AA		22
Aa3	AA-	AA-		21
A1	A+	A+	Upper medium grade	20
A2	A	A		19
A3	A-	A-		18
Baa1	BBB+	BBB+	Lower medium grade	17
Baa2	BBB	BBB		16
Baa3	BBB-	BBB-		15
Ba1	BB+	BB+	Non-investment grade speculative	14
Ba2	BB	BB		13
Ba3	BB-	BB-		12
B1	B+	B+	Highly speculative	11
B2	B	B		10
B3	B-	B-		9
Caa1	CCC+	CCC+	Substantial risks	8
Caa2	CCC	CCC		7
Caa3	CCC-	CCC-		6
Ca	CC	CC	Extremely speculative	5
	C	C	Default imminent	4
C	RD	DDD	In default	3
	SD	DD		2
	D	D		1

South Africa's current ratings are shaded

The big three ratings agencies

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Standard & Poor's describes their ratings as an opinion expressed about the ability and willingness of an issuer, such as a corporation or state or city government, to meet its financial obligations in full and on time.

Moody's, by contrast, is not interested in default probability *per se*, but rather the expected losses associated with default.

Default probability is part of the total expected loss — but then you have to also take into account what is likely to happen if and when a default occurs.

Moody's have been closely involved in the development of the South African capital market since around 1994. In 2001 Moody's introduced a South African National Scale Rating system and established a presence in the country in 2003. Today, many South African corporate, financial institution, structured, sovereign and sub-sovereign issuers are rated by the agency and their locally based analysts cover a variety of industries.

S&P and Fitch use a slightly different risk grading scale compared with Moody's, as indicated in Table 1. To simplify calculations and representations, the ratings agencies' scales have also been transformed into a numeric scale.

South Africa's sovereign ratings in the global context

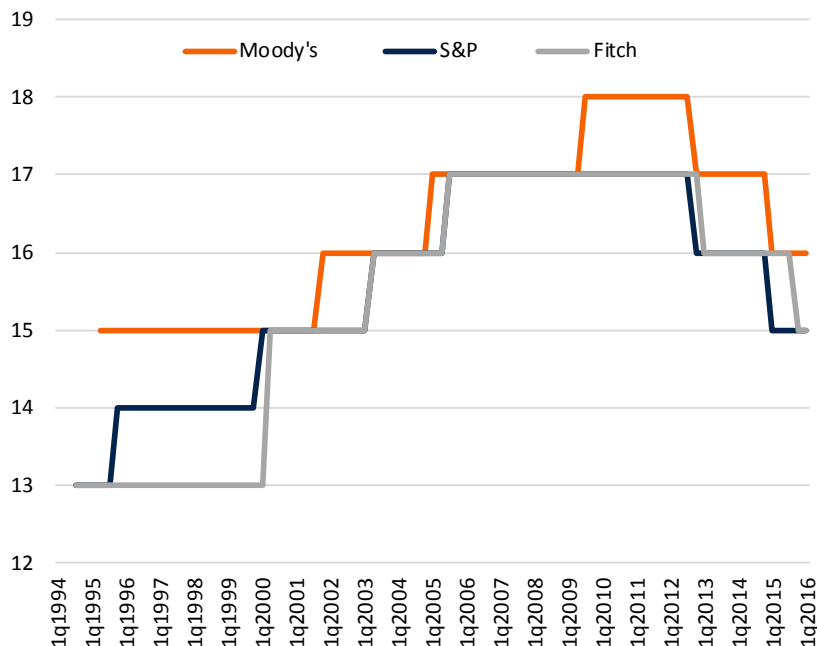
Out of 144 countries for which sovereign risk ratings are currently available, South Africa appears in around 65th position. Twelve countries receive the highest triple-A ratings from all three major ratings agencies while 69 countries (48%) of all countries are graded as non-investment speculative grade or "junk". Only one country, Argentina, is indicated as being "in default".

One way of comparing the pricing impact that the different countries' ratings have on their cost of credit, is to compare their credit default swap rates with a common benchmark. Another way is to compare real bond yields (i.e. the yields on government debt with long maturities, adjusted for inflation). The latter approach is preferred from a data availability perspective.

Using cross sectional analysis and comparing the most recent values for real bond yields and numerically scaled risk ratings, a negative correlation is obtained between these variables, albeit with a relatively wide dispersion. In other words, countries with higher (lower) sovereign risk ratings, generally have lower (higher) real bond yields.

South Africa's "theoretical" bond yield (calculated from the regression line formula) is currently 2.72%. This was exactly on par with the actual observed real bond yield at the end of February 2016. A number of countries had lower credit ratings than South Africa but slightly lower real bond yields, such as Hungary (2.5%), Portugal (2.6%) and Bulgaria (2.6%). Iceland, on the other hand, had a higher real bond yield (3.9%) but a better credit rating than South Africa.

Fig 1: SA sovereign risk - major risk ratings agencies



South Africa's declining sovereign risk ratings

South Africa's sovereign credit risk ratings reached a peak during 2010-2012 before the major ratings agencies started with downgrades in late 2012 and early 2013. S&P and Moody's again downgraded South Africa's country's risk rating in early 2015, while Fitch followed suit late in 2015.

Currently The Moody's rating is still a notch above Fitch's BBB- foreign currency credit rating (with a stable outlook) and also one notch above Standard & Poor's BBB- foreign currency credit rating (with a negative outlook).

Moody's affirmed South Africa's Baa2 rating in early 2016 "because of the country's track record of sound macroeconomic policies". The agency commented that although growth has continually disappointed in recent years due to a combination of domestic and external circumstances, spending restraint and the buoyancy of fiscal revenues to date has led to only marginal deviations for budget deficits and debt. In early March 2016, Moody's did place South Africa rating on "review for downgrade".

According to Fitch, the decision to downgrade South Africa was primarily due to the fact that GDP growth performance has weakened further, while various government policies have weakened business confidence.

S&P also affirmed their long-term foreign currency sovereign credit rating for South Africa at BBB- with a negative outlook. They commented that GDP growth might be lower than that which is expected, *inter alia* because of persistent electricity shortages, continued weak business confidence, and the possibility of labour disputes escalating at some point.

The ratings outlook: What are the important indicators?

The South African National Budget presented by Finance Minister Pravin Gordhan, envisages fiscal consolidation over the next three years to stabilise the ratio of government debt to GDP, despite a substantial downward revision in GDP growth projections. However, unspecified tax measures in later years, ambitious plans to contain the public wage bill, sustaining political support for fiscal retrenchment, and a weak economic performance, pose rather formidable implementation risks.

The 2016/2017 National Budget envisages a cumulative tightening in fiscal policy of around 1% of GDP over the next three years relative to last October's Medium-Term Budget Policy Statement. This has led Fitch to project a reduction in the budget deficit, after allowing for the impact of weaker growth and higher inflation, from 3.9% of GDP in FY2015/16 to 2.4% of GDP in FY2018/19 compared with 3% in the MTBPS. The Treasury

Fig 2: Most recent sovereign risk ratings
- selected countries

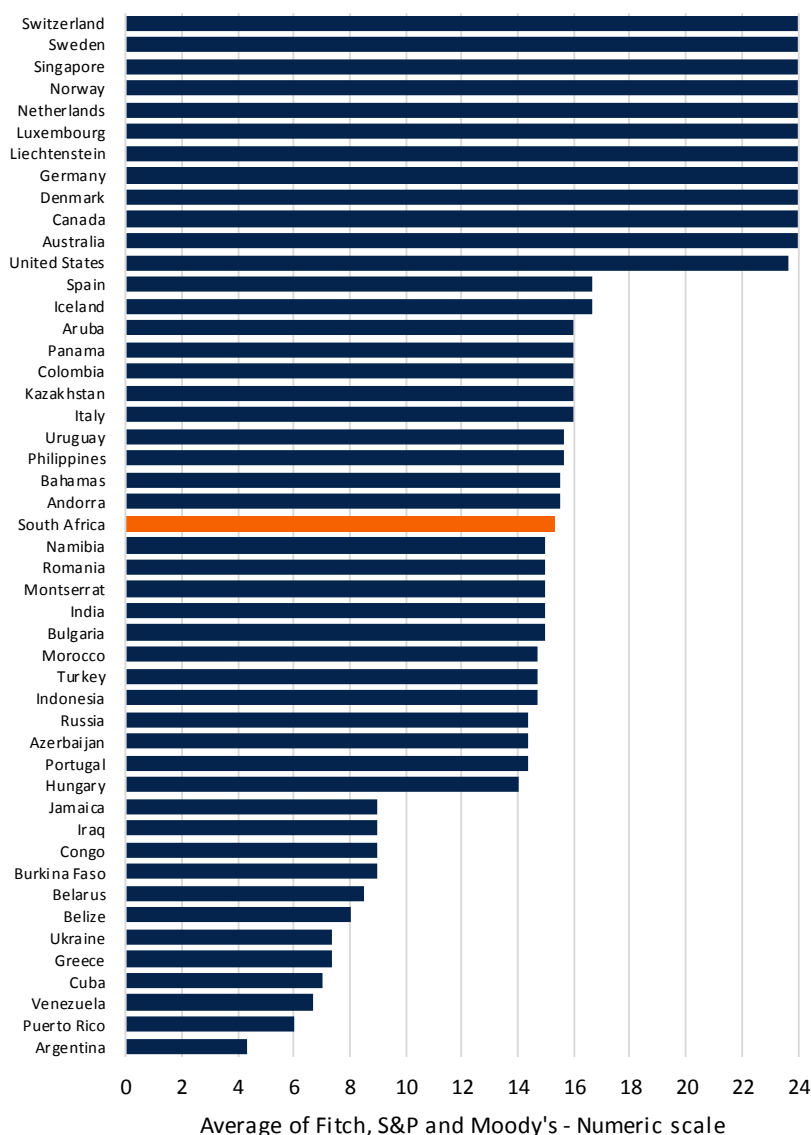


Table 2: Key economic variables influencing sovereign risk ratings

	Gen gov deficit / GDP	Gov debt / GDP	CPIH inflation	Current acc deficit / GDP	Fixed capital formation / GDP	Real GDP growth	Unemployment rate	Real change in per capita GDP
2005	-0.5%	32.2%	2.1%	-3.1%	17.2%	5.3%	29.0%	3.9%
2006	0.2%	30.6%	3.2%	-4.5%	18.9%	5.6%	26.9%	4.2%
2007	0.7%	26.7%	6.1%	-5.4%	20.6%	5.4%	25.7%	3.9%
2008	-0.3%	25.2%	9.9%	-5.5%	23.5%	3.2%	22.8%	1.7%
2009	-4.6%	27.5%	7.2%	-2.7%	21.5%	-1.5%	26.1%	-3.0%
2010	-4.6%	32.1%	4.3%	-1.5%	19.3%	3.0%	29.2%	1.5%
2011	-4.0%	35.5%	5.0%	-2.1%	18.7%	3.2%	28.5%	1.7%
2012	-5.2%	38.6%	5.7%	-4.9%	18.8%	2.2%	27.8%	0.6%
2013	-4.8%	41.3%	5.8%	-5.8%	20.0%	2.2%	26.6%	0.6%
2014	-4.7%	44.3%	6.1%	-5.4%	20.3%	1.6%	26.2%	-0.1%
2015	-4.2%	47.2%	4.7%	-3.8%	20.3%	1.2%	24.9%	-0.4%
2016	-4.0%	48.7%	7.2%	-2.6%	19.3%	0.6%	25.6%	-1.0%
2017	-4.2%	50.6%	7.4%	-1.3%	18.7%	1.2%	27.4%	-0.4%
2018	-3.6%	51.7%	6.5%	-1.3%	18.4%	2.0%	29.0%	0.4%
2019	-2.9%	51.9%	5.6%	-1.3%	18.5%	2.5%	30.3%	0.9%
2020	-2.3%	51.6%	5.1%	-1.8%	18.5%	2.1%	31.6%	0.5%

Note: The unemployment data were generated simply by taking the labour absorption ratio calculated by StatsSA for 3Q2015, and applying this over the entire period. The series is therefore not comparable with the official series published.

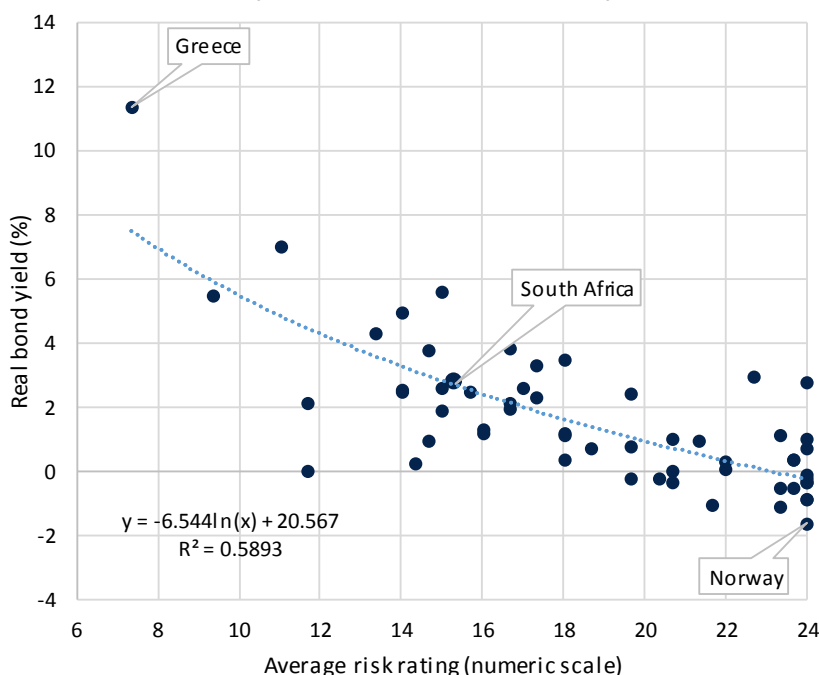
estimates the deficit at 3.2% in FY2016/17 (0.1pp lower than in the MTBPS) and 2.8% in FY2017/18 (0.4pp lower).

Even though the projected relative size of South Africa’s fiscal ratios has improved, government spending, taxes, deficits and debt ratios are not the only numbers that are of concern to rating agencies. Indeed, drawing on international research over many years, it appears as though fiscal deficit and debt numbers are often of limited value in explaining sovereign risk rating adjustments. Fiscal policy is but one aspect of a host of policy measures and indicator projections which ratings agencies analyse in order to arrive at a country specific credit rating.

Statistically, studies have indicated that GDP per capita tend to explain as much as 80% of the changes in credit ratings agencies’ assessments of countries. Unfortunately the movement of this indicator does not bode well for South Africa’s future credit rating.

Whereas the population growth declined from around 2.7% p.a. in the early 1990s to 1.3% p.a. during 2002-2005, the population growth rate has gradually picked up to 1.7% in 2015. The GDP component of this measure will – at least for the next two years – remain under pressure and real GDP per capita is therefore expected to decline – as it last did in 2009. Our forecast for real GDP per

Fig 3: Real bond yields vs sovereign risk ratings (for 58 countries - Mar 2016)



capita growth over the next five years is a mere 0.1% p.a. compared with the 2.7% p.a. which was recorded during 1998-2008.

Unfortunately, as can be seen from Table 2, there are not really important indicators which are set to improve in 2016-2017, with the possible exception of the current account deficit.

Possible market impact following further downgrades

From Figure 3 it can be calculated that a drop in South Africa's credit risk rating to 14 (junk bond status) will entail a rise in real bond yields to 3.3%. This is some 60bp higher than the current real bond yield. However, the accompanying movement of inflation will be even more important. Inflation is currently expected to peak at around 7.5% during the current cycle which will cause nominal bond yields to rise to between 10.5% and 11%.

If a 170bp increase in bond yields is assumed following a further credit downgrade and higher inflation, general government's interest cost as a percentage of its total debt will increase. To calculate this amount, one will have to estimate the higher coupon rates (at different maturities) at which funding will take place as well as the total consideration of government bonds that will be issued.

Although the yields (to maturity) of government bonds are not really the interest rate cost of government's debt, the cost impact can be estimated through regression analysis of bond yields vs the interest expended as a ratio of government debt. This calculation shows that the latter ratio could increase from the current level of around 7% to 9.5% if bond yields rise by 170bp. This could add as much as R50 billion per year in interest payments.

During the twelve months between October 2014 and September 2015, government's debt servicing bill came to R131 billion. Any significant increase in government's interest bill will have to be funded either by tax increases or expenditure cuts in other areas.

As we know, higher bond yields mean lower market prices (and hence lower returns) for bonds as an asset class. The yield / return regression gives a fairly good fit as shown in Figure 6. From this relationship it is estimated that bond returns may decline by as much 13.5% for every 100bp increase in bond yields.

Fig 4: GDP per capita

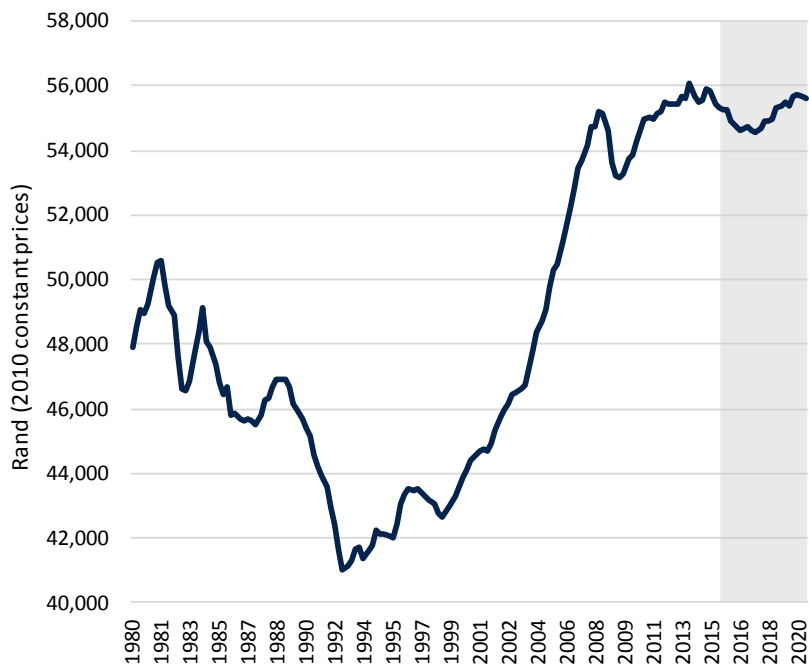
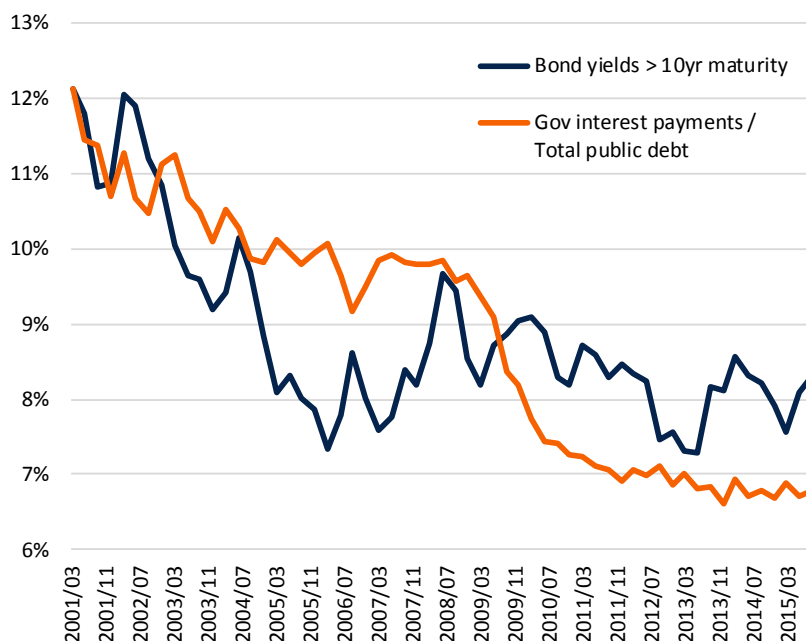


Fig 5: 4-Quarter running sum of general government interest payments / debt (y) vs bond yields (x)



A steep increase in bond yields will probably be spread out over a number of months and is unlikely to come in one fell swoop. (Unless President Zuma again starts playing musical chairs with his ministers of finance or pursues a similar folly.) Figure 7 shows that nearly 80% of quarterly changes in SA bond yields since 1998, ranged between -80bp and +60bp. A quarterly bond yield change in excess of 100bp is certainly not impossible but would be regarded as an outlier.

Possible effects of sharply higher bond yields

- Debt and deficit ratios are likely to be affected. Government may need to borrow more to fund its running expenditure. This is of course a very bad fiscal principle and could lead to further sovereign risk downgrades.
- Higher inflation will lead to higher interest rates. Expect another 100bp to 150bp to be added to the repo and prime overdraft rates.
- Growth will be hurt by higher interest rates. Our projection is already for growth of only marginally above 0.5% in 2016.

None of the above developments will be good for equity market returns. What is more, any significant sell-off of financial assets by foreigners, is likely to put pressure on the capital account of the balance of payments causing the rand to come under pressure.

Previous international studies have shown that there is indeed a market reaction of ratings changes to stock market movements. A 2003 study by Brooks, Faff, Hillier and Hillier, found firstly that neither foreign currency (FC) nor local currency (LC) ratings upgrades produce any detectable market reaction. Secondly, and in contrast to the above, both FC and LC ratings downgrades tended to be associated with an overall reduction in own-market equity values. Thirdly, the negative reaction to downgrades was most pronounced in the case of S&P and Fitch re-ratings. Finally, they found that whether the re-rating is a 'leading' (i.e. the first re-rating event for a given country over a six-month period) or a 'following' rating, change does not seem to matter—the negative market impact to downgrades by S&P and Fitch appears

Fig 6: Quarterly annualised bond return (y) vs change in bond yield (x)

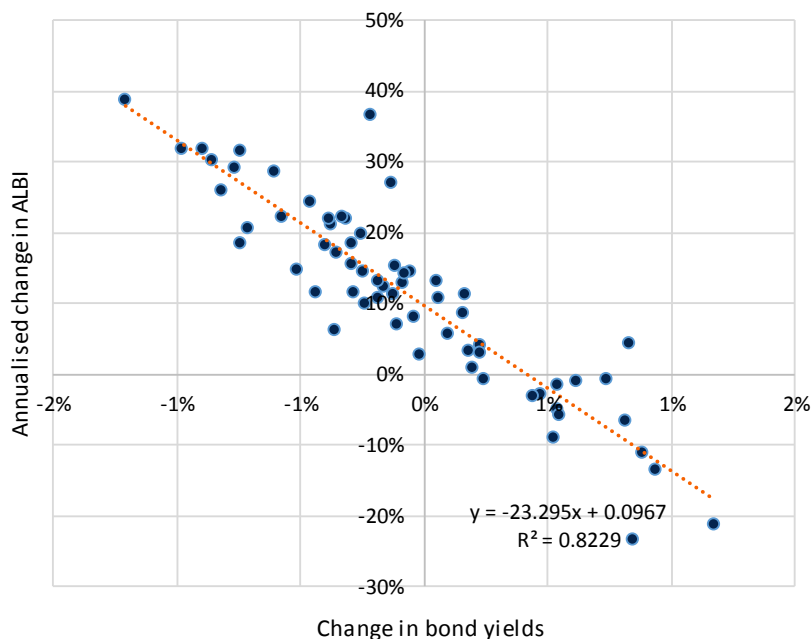
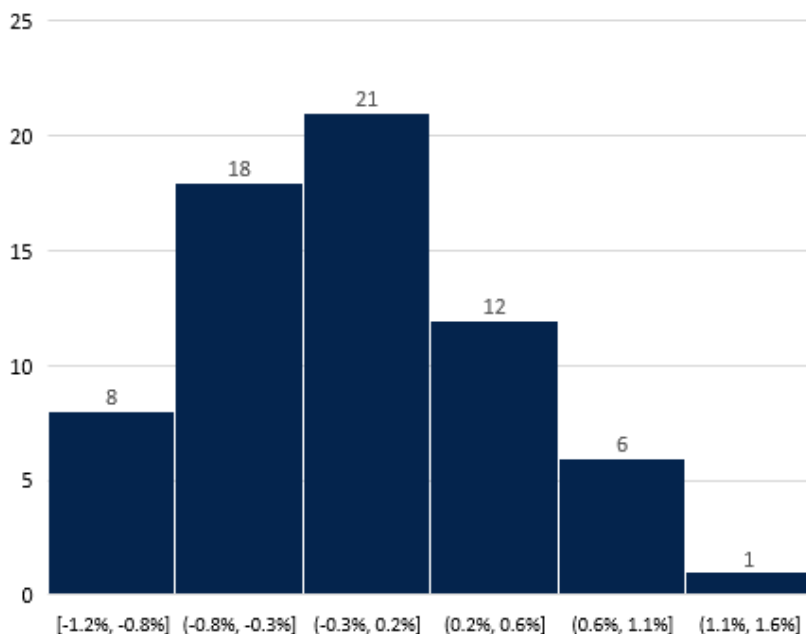


Fig 7: Quarterly change in bond yields (>10 years) since 1998



robust to this distinction. Thus, if you were an international equity investor, you would have done well to take note of imminent downgrade re-ratings events — particularly if S&P or Fitch were the agencies making the call.

Another study by the World Bank in 2002 (Kaminsky and Schmukler), used panel-regression analysis to indicate that the actions of ratings agencies not only affected the instrument being assessed, but also had spill over effects across financial markets and countries. Their study suggested that rating changes triggered more widespread market instability during times of turmoil with the implication that rating changes may act like a wake-up call or a signal that coordinates investors towards a bad equilibrium. Moreover, they found that ratings may contribute indirectly to financial market instability if the agencies provided additional information on the fundamentals of each country. When they divided their sample into vulnerable and non-vulnerable countries according to the ratings, they found that vulnerable economies were the ones that reacted more strongly to adverse world monetary shocks.

The event studies suggest that rating agencies act pro-cyclically, downgrading countries in bad times and upgrading them in good times. In this sense, ratings agencies might add instability to financial markets in emerging economies. The event-study results may explain why they found that the effects of upgrades and downgrades did not appear to be large in economic terms, though they were statistically significant. Ratings agencies provide bad news in bad times and good news in good times, just reinforcing investors' expectations. These types of news are not seen as very informative to investors, so markets usually do not react very strongly to them.

Looking at the immediate past experience of two emerging market economies that were downgraded, also offer some insight in what could be in the offing for the JSE.

The Russian stock market, as gauged by the Market Vectors Russia ETF (RSX), fell by 7.4% on 26 January 2015 when Standard & Poor's downgraded Russia's sovereign credit rating to "junk" level. In contrast, the iShares MSCI Brazil Capped ETF (EWZ) only fell by 0.34% at the close of trade on 9 September 2015 in reaction to the same news for Brazil. Brazilian stocks like Itau Unibanco (ITUB), Vale (VALE), and Ambev (ABEV) all fell at the close of trade on September 9. However, these initial reactions were rather contained, once again suggesting that the risk ratings downgrades were expected and discounted by investors.

Fig 8: Bond yield changes vs share price changes
Daily data since 1998

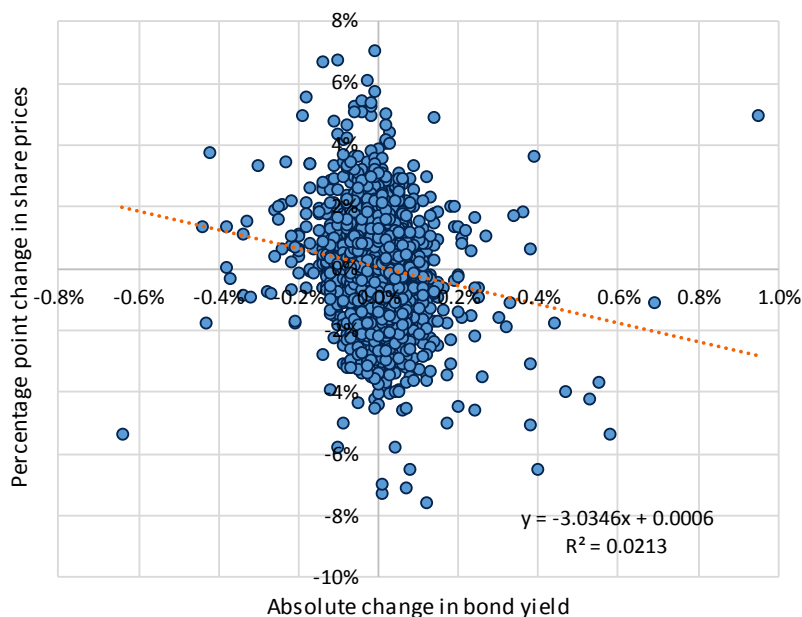
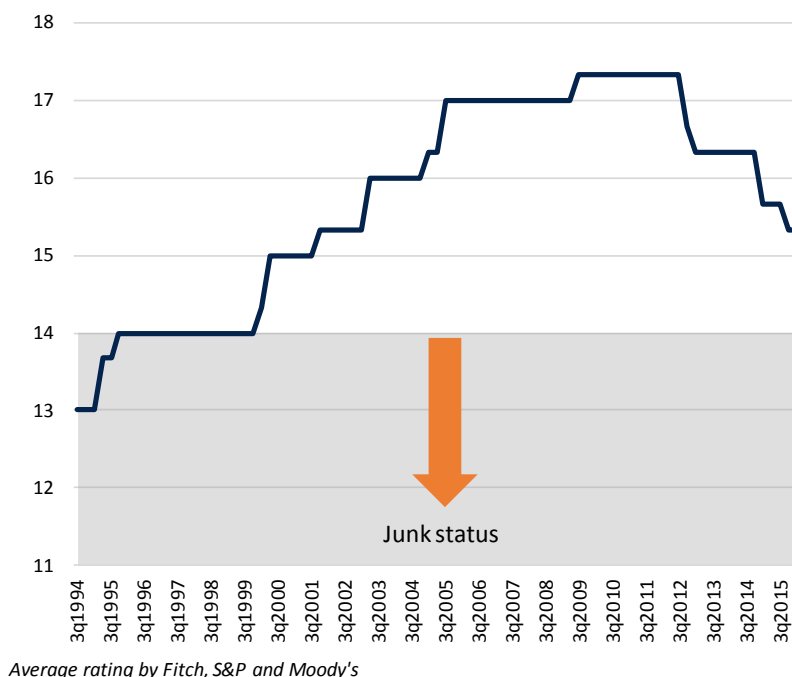


Fig 9: SA average risk rating - numeric scale



Average rating by Fitch, S&P and Moody's

Finally, an implication of prolonged weakness or structurally lower bond prices for funds having to be Regulation 28 compliant, is that rebalancing of portfolios might have to be performed. This could also lead to downward pressure on share prices which might need to be sold in order to reach the target ratios.

Statistically, it is interesting to note that the causality of stock market performances and bond yields run from the latter to the former, rather than the other way around. In other words, it is statistically more likely that bond yields affect share prices rather than the other way around.

Using cross sectional daily data between January 1998 and February 2016, shows that the correlation is not very strong. However, there is a noticeable inverse relationship between the two sets of variables which was used to calculate the potential effect of a bond yield increase: a 100bp rise in bond yields, will be associated with a 3% drop in share prices (see Figure 8).

Conclusion

A ratings downgrade to speculative grade by at least two of the major credit ratings agencies within the next twelve to eighteen months, seems highly probable. The Zuma low-growth-trap is just too entrenched and aggravated by the commodity slump and struggling developing country environment. Visionary leadership with a renewed focus on pro-growth policies will be needed to reverse South Africa's fortunes.

It would appear that, as far as the bond market is concerned, a ratings downgrade may, in large part, already be discounted. The direct and initial impact on the JSE equity market may therefore likewise be muted.

However, much higher inflation than is currently envisaged, holds a severe threat for the macro economy and could lift bond yields and interest rates much higher, causing more downward pressure on the rand. Such developments will also negatively affect the stock market. The growth outlook will decline even further and possibly lead to even lower credit risk ratings. This could potentially create a vicious spiral.
