etm analytics
MAKING SENSE OF IT ALL

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South Africa's Low Energy Economy

Eskom's crisis is an example of the chronic asset mismanagement that we believe can spark a wave of forced reforms and privatisations in the coming years that potentially offers a highly optimistic longer term perspective on growth and recovery.

In the interim however, Eskom is a failed entity that at best imposes deep constraints on growth, and at worst could be the catalyst for economic catastrophe, especially in the (still relatively unlikely) event of total grid failure.

Based on a scenario analysis we estimate a real GDP growth cap of 1.6% in 2015. However in our plausible "Low Road" scenario GDP would be forced to contract by 1%.

The only meaningful way for SA to grow in the medium term would be to keep finding marginal efficiencies by reorienting the GDP mix away from industry toward retail and services. In many ways the electricity constraints are forcing this trend toward a lower quality growth mix of capital consumption.

Outlook and Strategy

- A deepening Eskom crisis could conceivably lead to a junk grade credit rating, aided by broader risk-off in a tightening global dollar liquidity cycle.
- SA will become heavily diesel-reliant in 2015, and the benefits of lower oil prices will be largely offset if indeed major shortages do arise.
- It would have been difficult for SA to achieve 2% growth in 2015 regardless of energy shortages, so our core scenario growth cap of 1.6% practically may matter little.
- The deep failures of state-owned enterprises like Eskom hold the potential to spark emergency deregulation of key sectors. We reiterate our constructive view toward private and listed equity opportunities in local water and energy plays.
- Near term infrastructure risks nonetheless mean heavy exposure to core basic state services is an unambiguous liability going into 2015.

Public Sector Wage Dilemma

South Africa's public sector wage negotiations have been billed as a bellwether for governments' appetite to keep its budget promises.

Government has no easy options. We expect a slowing in hiring, above inflation wage settlements, and therefore a continued gutting of capital and non-wage operating budgets and still higher deficits.

While this may be the only way to avoid widespread strike action, it perpetuates a staff-heavy, capital-light government with plunging rates of productivity. So strikes or not, the public sector will become more sclerotic in 2015 and drain further dynamism out of the economy.

Eskom Supply Scenarios *Seasonally Adjusted*	Week to Dec 7 '14	2014	Dec '14-Feb '15	H1 2015	H2 2015
Installed capacity (Core)	43490	43490	43490	43490	44212
Installed capacity (Low Road)				*43490*	*43851*
Installed capacity (High Road)				*43851*	*44545*
Required Maintenance (Core)	-11632	-10000	-9500	-11000	-11000
Required maintenance (Low Road)				*-11500*	*-11500*
Required maintenance (High Road)				*-10500*	*-10500*
Required Eskom Grid Risk Buffer ≈	-2000	-2000	-2000	-2000	-2000
Eskom Supply (Core)	29858	31490	31990	30490	31212
Eskom Supply (Low Road)				*29990*	*30351*
Eskom Supply (High Road)				*31351*	*32045*
IPP Supply (Core)	1669	1669	1752	2003	2170
IPP Supply (Low Road)				*1836*	*2003*
IPP Supply (High Road)				*2003*	*2337*
Total Supply (Core)	31527	33159	33742	32493	33382
Total Supply (Low Road)				*31826*	*32354*
Total Supply (High Road)				*33354*	*34382*
Low Quality GDP Growth Cap (Core)				1.6%	
Low Quality GDP Growth Cap (Low Road)				*-1.0%*	
Low Quality GDP Growth Cap (High Road)				*4.5%*	
High Quality GDP Growth Cap (Core)				-2.7%	
High Quality GDP Growth Cap (Loe Road)				*-5.2%*	
High Quality GDP Growth Cap (High Road)				*0.1%*	

Source: Eskom; ETM Analytics

Structural Growth Impediment

The energy crisis of early December 2014 has bought into sharp focus South Africa's structural risks. We attempt to estimate the GDP growth cap placed on South Africa's economy as a result of the lack of capacity by outlining three 2015 scenarios.

Three Eskom scenarios

Core scenario:

- 720MW capacity added by Q3 2015 (one Medupi turbine)
- Required maintenance is 10% higher than 2014
- Independent power production rises by 25% in 2015 in line with recent trends

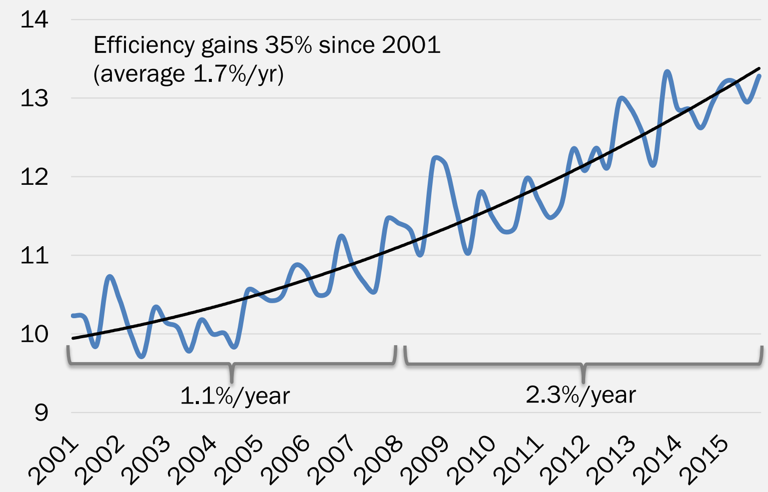
Low/High Road:

- 720/1060MW capacity added by end-2015 (Medupi/Medupi+Ingula)
- Required maintenance is 15%/5% higher than 2014
- Independent power production rises by 15%/30% in 2015

Based on historical data we estimate electricity efficiency of the SA economy to have increased on average 1.1% per year from 2000-2007 (through technological efficiency and shifting the GDP mix toward services and retail) and 2.3% per year from 2007-2014 (through accelerated technology adoption and a faster shift in the GDP mix away from heavy industry).

Average energy efficiency gains in GDP of 2.3%/year since 2008

Energy Efficiency Masks Low Quality Growth
Real GDP (2005 prices) per gWh electricity used



Source: Bloomberg, ETM Analytics

A structural rebalancing of the SA economy would require a reduction in energy efficiency of GDP as consumption and debt is retrenched in favour of savings and industrial investment. Energy efficiency growth has been strong in recent years of manufacturing and mining decline and lost output due to strike activity, as well as endogenously from energy constraints and soaring prices.

Energy shortages have created forced energy efficiency

The energy shortages therefore drive forced efficiency by blocking energy-intensive investment and activity and freeing up resources for low energy intensive sectors. This represents a significant qualitative decline in the GDP mix, as capital consumption replaces capital accumulating investment.

Under the current "low quality" GDP trajectory, the real GDP growth cap under our core scenario due to electricity capacity problems is +1.6%. Assuming a restructuring of the economy toward a higher quality GDP mix implying 2% per year more energy-intensive use, the "high quality" growth cap under the core scenario is -2.7% (i.e. GDP would have to contract by 2.7%). The Low Road GDP growth cap is -1% while the High Road cap is 4.5%.

Core scenario sees a growth cap in 2015 of 1.6%

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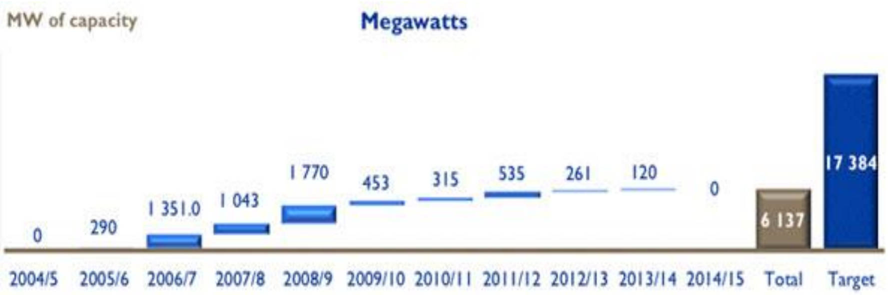
Source: Eskom; ETM Analytics

Core scenario total electricity supply will be lower in 2015 vs 2014

In the week of intense loadshedding to December 7, 2014, national demand for Eskom-generated power exceeded safe levels of supply by around 2200 MW because of a massive 30% supply deficit on installed capacity arising from chronic maintenance and repair backlogs. (note: demand is ALREADY constrained by large industrial users subsidised by the state to NOT consume energy).

2014/15 is the first year in which Eskom has not added capacity to the grid. Medupi's first unit, aside from its consistent delays, will only offer the grid 720 MW sometime in 2015. Ingula is set to contribute a paltry 333 MW by h2 2015. In context of planned maintenance in excess of 5000 MW every week over the next three months and potentially beyond, and unplanned outages which could stay consistently at 6000 MW as the capital stock ages further, the deficit remains extreme. SA now finds itself being compared to the likes of Nepal, Zimbabwe and Bangladesh who have also faced load shedding or grid failure.

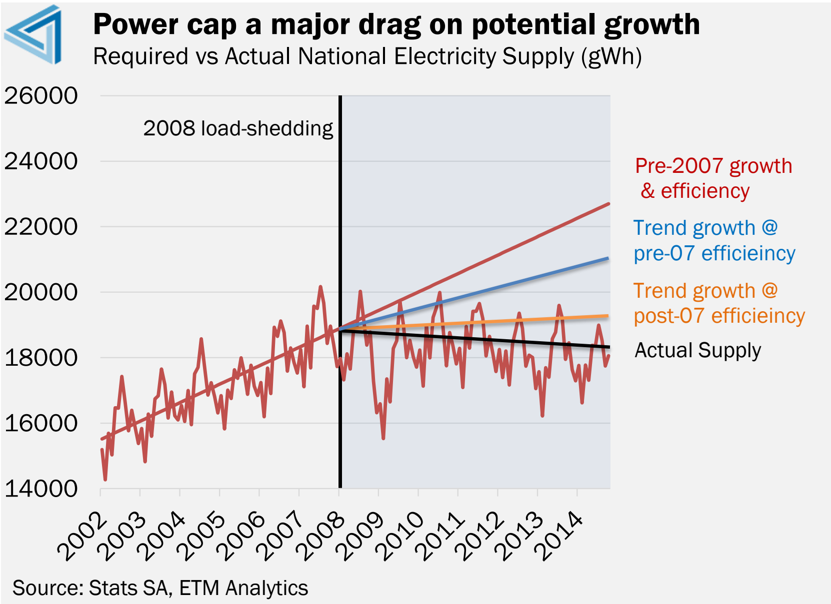
2014/15 is the first year in which Eskom has not added capacity



Lost Opportunity

For GDP to have grown at historical trend of 3% since 2008 (actual 1.7%) and for pre-2008 energy efficiency gains in GDP to have been maintained, electricity supply would need to be 15% higher today. This represents a R550 billion structural impediment to growth in today's terms. Stated another way, for the South African economy to have undergone industrial intensification since 2008 to the point where is lost just 1%/year energy efficiency in GDP while maintaining trend growth, electricity production would need to be 30% higher than it is today.

SA has a 15% structural loss of GDP since 2008



High growth and industrialisation is impossible under current supply

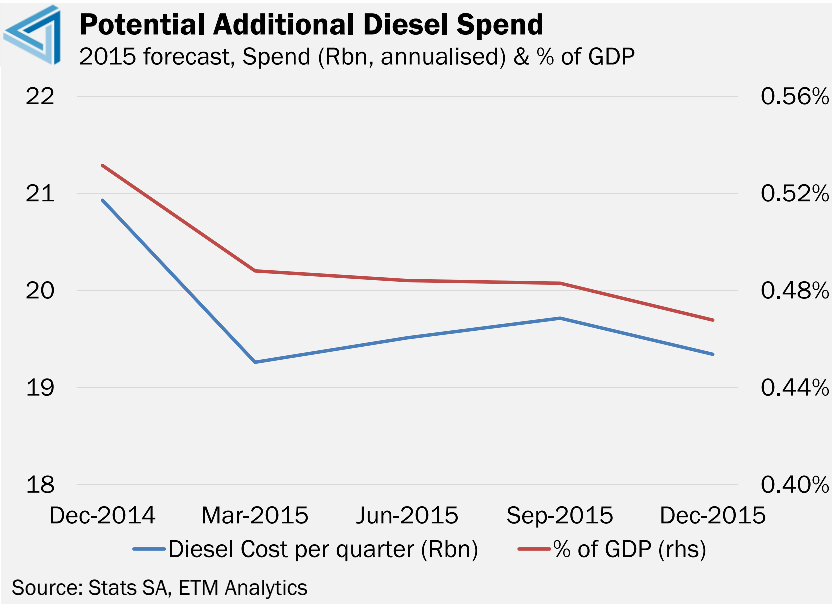
Taken together, the foregoing analysis indicates that South Africa a) will struggle to achieve growth in excess of 1% in 2015, b) has already sacrificed around 15% of structural potential since 2008, c), will have to keep sacrificing structural growth quality (and at a faster pace) for weaker quality cyclical growth, d) is at real risk of a recession in 2015, and e) will become a much heavier user of diesel power.

SA at real risk of a recession in 2015

Generator Generation

Not only are more and more companies and households being forced into diesel generation, but Eskom itself is running its diesel-powered open-cycle gas turbine (OCGT) plants at much higher capacity than originally planned. We estimate in order to mitigate potential blackouts and achieve desired growth, households and companies can produce 1% of total needs through own-generation, requiring an extra 1.5 billion litres of fuel in 2015. Eskom meanwhile is expected to need an additional 1 billion litres of fuel to run the OCGT plants (it burned a massive 140 million litres in November 2014 alone). Taken together this is expected to cost around 0.5% of GDP excluding the costs of procuring, installing and maintaining diesel generators, which could increase this cost to 1.0-1.5% of GDP.

Diesel power costs could soar to 1.5% of GDP in 2015



Additional annualised fuel spend of R20 billion will divert around 0.5% of GDP into energy costs

While this would mitigate power shortages' impact on growth, it would entail a redistribution of around 1% of GDP from other expenditure toward diesel and associated generator costs. These may create added efficiencies on the conventional power grid, but the cost does still weigh on potential GDP.

Moreover, many energy intensive industries cannot operate on diesel generation competitively, so their losses from Eskom shortages remain acute.

We expect that private firms haven't fully come to terms with the severity of the power crisis. Demand for generators and the much needed fuel will spike over the coming 12-24 months. Unless government liberalises its diesel pricing model to be demand-responsive, fuel shortages are a real risk, which would pose added drags on potential GDP. To be clear, the current diesel pricing model is mostly based on global price moves, but soaring domestic demand and global supply-led price cuts is a dangerous cocktail for diesel shortages. There is anecdotal evidence which suggests these shortages have already arrived, providing another structural impediment to economic growth.

Fuel shortages have become an imminent risk

Ratings Implication: Severe

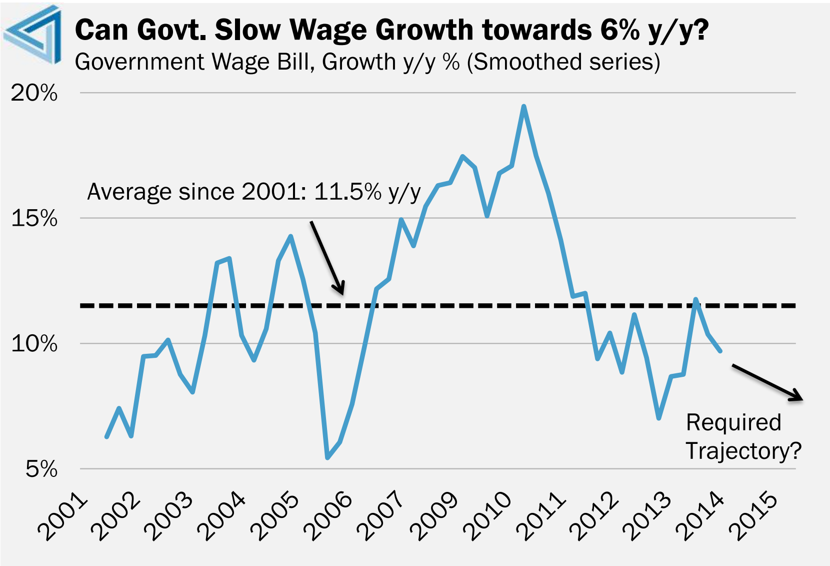
While a complete grid failure appears unlikely at this stage, rolling blackouts will impose a huge cost on the economy. The running costs of a failing grid will also become increasingly costly and this will affect profitability, income growth, and hence tax revenues. Prices for Eskom electricity are set to keep soaring into next year. Fuel shortages are an imminent risk. Estimates suggest that on average 1MW hour of diesel-generated power costs Eskom 300% more than the average revenue it receives. The funding gap will grow into 2015, making another bailout or raised government guarantee an increasing likelihood.

Power shortages will spill into weak tax revenue growth

Public Sector Wages

Since 2001 the public wage bill has increased at an average rate of 11.5% y/y, highlighting the magnitude of task that government will encounter in reducing wage growth towards headline inflation (roughly half of that average), as required by ratings agencies in order to sustain a semblance of fiscal confidence.

A sharp reduction in wage growth is required by the ratings agencies



Source: Stats SA; Quantec; ETM Analytics

Government has four choices:

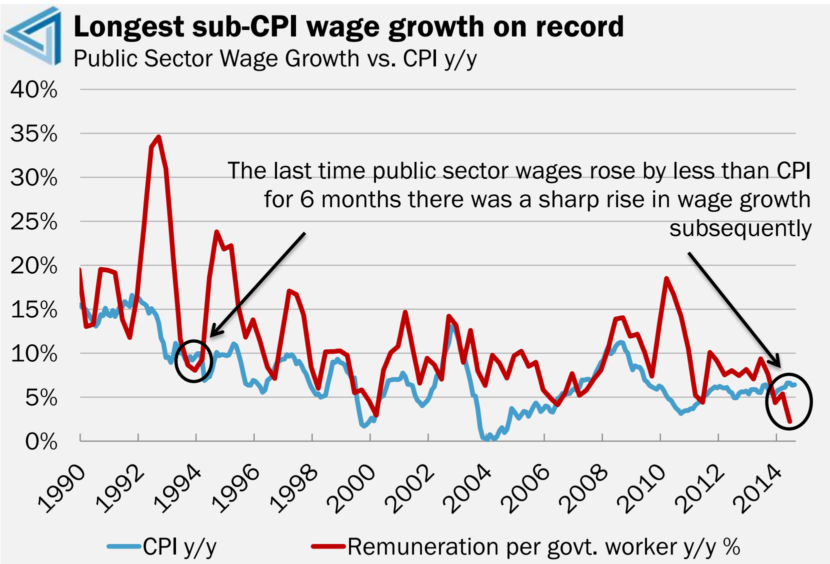
1. Keep hiring and freeze nominal unit wages,
2. Freeze headcount and slow growth in unit wages,
3. Reduce headcount and give larger wage increases,
4. Keep hiring and don't slow unit growth (status quo)

No easy choices

Remuneration per employee

From December 2013 to March 2014 year-on-year growth in remuneration per employee has been lower than CPI inflation. While this could suggest government has the ability to push through below CPI unit wage increases over the coming quarters, these 4 months mark the longest period of sub-CPI wage growth on record. Frustration within the public sector is surely growing.

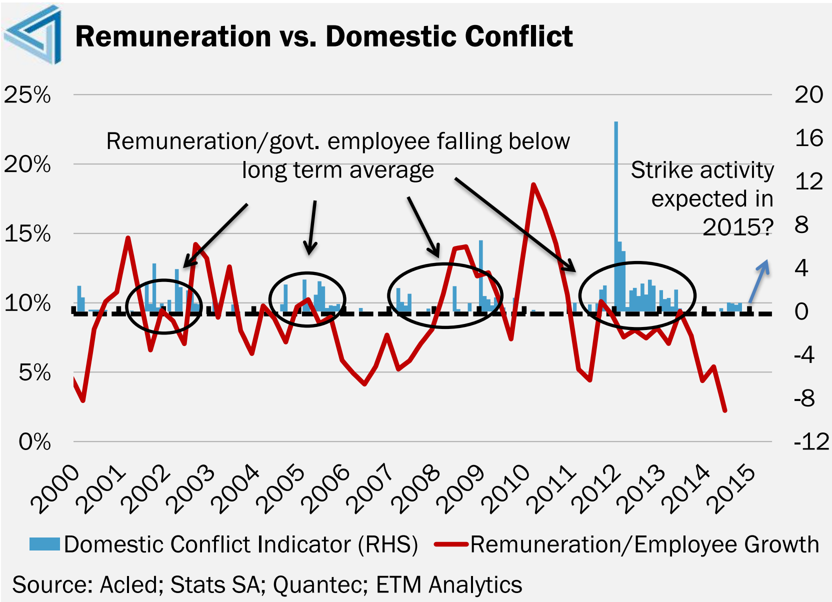
Frustration building after a period of below-inflation unit wage growth



Source: Bloomberg; ETM Analytics

Conflict data from the Acled (armed conflict location and data event project) database indicates there may be a relationship between periods of below average y/y wage growth and riots and protests in South Africa. Can we expect a rise in domestic strike activity in 2015? Numerous analysts have forecast a domestic economic rebound on the back of an expected reduction in strike activity. This could be wishful thinking.

Low real wage growth can spark strikes and social unrest



Source: Acled; Stats SA; Quantec; ETM Analytics

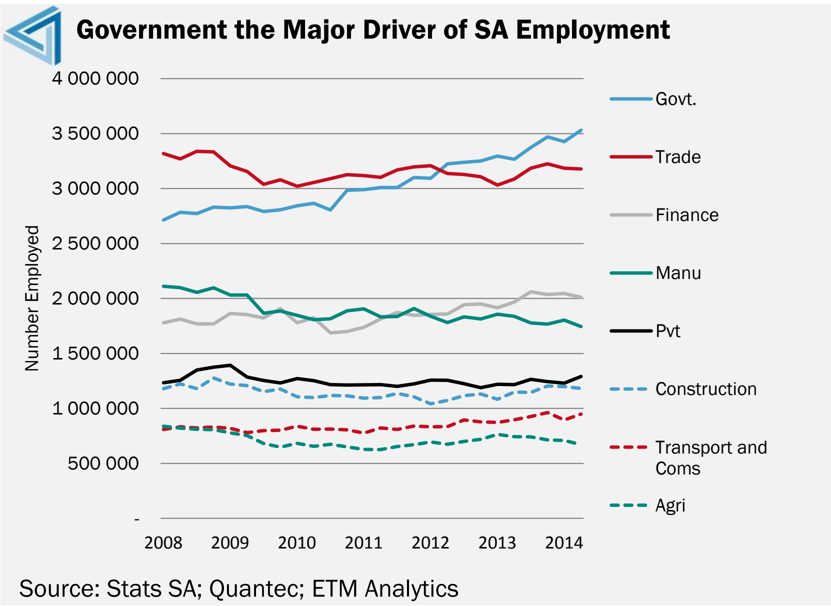
Headcount

A reduction or even freeze in headcount will be nearly impossible to achieve. The state continues to favour tax-funded job creation as its primary economic policy objective, neglecting capital maintenance and non-wage spending. The inevitable result is a highly inefficient public sector with falling unit productivity rates.

A headcount reduction or freeze is fraught with political difficulty

The state has become the largest employer, and hiring was up almost 5% y/y in June 2014 (well above the post 2010 average of 3.2% y/y). A headcount reduction will be met with defiant protest. A headcount freeze may make the employment data look even worse and undermine the established system of patronage – it is difficult to stop a gravy train with this much momentum.

Without government hiring, employment will begin to look weak



Source: Stats SA; Quantec; ETM Analytics

Budget Implications

The public sector is unlikely to accept below inflation wage increases again, while a headcount freeze in government will place severe pressure on a tight domestic labour market and is politically difficult.

Reports released last week showed that public sector wage negotiations got off to a rocky start. The Public Servants Association's (PSA) general manager Manie de Clercq said that the "core demands are for a 15% across the board increase" while government is trying to pass a 5% y/y increase for the next three years. De Clercq said after the initial negotiations that "The employer's [government's] offer is malicious and insulting." This doesn't bode well for future negotiations, unrest and economic growth into 2015.

Wage negotiations off to a rocky start

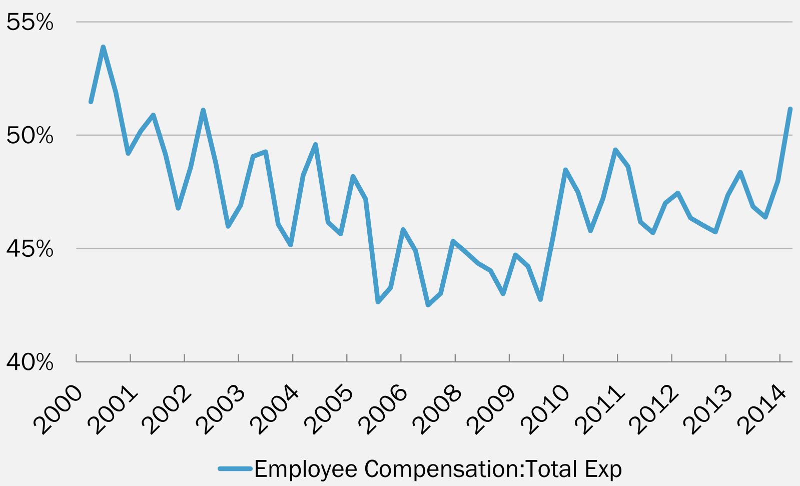
The most likely scenario for now is a moderation in the annual growth in public sector headcount to around 3%, and inflation+2% average wage settlements. Assuming a 5% CPI inflation rate and a focus on ultra-low wage new hiring, wage bill growth could be kept just below 8%, with spending growth cuts being shouldered by capital maintenance and the non-labour operational budgets (consultants, contractors, suppliers, goods, services etc). This would perpetuate the trend of government becoming labour-heavy and capital-light, reducing unit productivity and continuing the trend of the decay of state infrastructure in favour of keeping the gravy train chugging along for now.

8% public sector wage bill growth is a likely middle ground

Already employee compensation as a proportion of government expenditure rose up to its highest levels since 2002 in Q2 2014, indicative of the emphasis that government places on wage and employment growth, over that of capital accumulation and investment.

This is not an easy trend to reverse when tax revenue growth falls

Wages rising as a % of Govt. Expenditure



Source: Stats SA; SARB; Quantec; ETM Analytics

Outlook and Strategy

1. The Eskom power crisis and a chronically over-staffed public sector will have deeper negative fiscal consequences in 2015. In ISJ Volume 26 we forecast that the budget deficit would widen to -4.4% in 2015/2016. We reiterate this view. Revenue collection is cyclically elevated but faces slowing economic growth and disinflation, while spending growth remains sticky in the coming fiscal year.

Risk of the deficit being larger than -4% in 2015/16

2. The Eskom crisis poses the more acute downgrade risk because of its systemic importance. Ordinarily the move from investment grade to junk is highly politicised and often requires a global risk event to cross the threshold. But in South Africa's case, a deepening Eskom malaise would be enough of a crisis to spark a junk grade rating, aided by a broader EM fallout in the tightening global dollar liquidity cycle.

Junk grade rating toward the back end of 2015 is a fast-rising risk

3. SA will become heavily diesel-reliant over the coming years until more meaningful energy reforms enacted and more hard capacity is developed. Rising diesel demand and regulated diesel pricing raises the very real threat of system-wide fuel shortages until market-based pricing is introduced. This is going to place strain on diesel-reliant businesses and the logistics sector. In other words, the benefits of lower oil prices will be largely offset if indeed major shortages do arise.

South Africa will lose some of the benefits of lower oil prices due to fuel shortage risk

4. Outside of heightened Eskom power constraints in 2015, we expect SA growth to improve in h1 2015 on the back of lower petrol prices, generally softer consumer inflation, and easing of margin pressure as global commodity prices offer producers cost side relief. Toward the latter half of 2015 however we see the global cycle weighing on the domestic business cycle. It would have been difficult for SA to achieve 2% growth in 2015 regardless of electricity supply shortages, so our core scenario growth cap of 1.6% practically may matter little.

1.6% growth cap may not be practically relevant in 2015

5. The deep failures of state-owned enterprises like Eskom make for woeful short term prognoses. But to the extent that systemic failure on this scale sparks emergency privatisation and deregulation of the energy sector, there is a potentially fundamentally bullish story unfolding as South Africa transitions toward a more meritocratic, free market system. Such a transition will be volatile and may entail more pain, and is certainly not guaranteed, but reform out of necessity seems to offer the clearest line of sight toward more functional utilities and better executed infrastructure development. If this holds then we reiterate our constructive view toward basic water, sanitation and energy companies and expect a wave of private and listed equity opportunities to emerge on the back of this trend over the coming 3-7 years.

We maintain a constructive view on water and energy sector investment opportunities

6. The near term infrastructure risks are nonetheless acute. Water supply is under threat in much the same way and for much the same reasons as electricity. Heavy exposure to these core basic state services is an unambiguous liability going into 2015.

Reduce heavy exposures to state energy and water provision

Published by ETM Analytics (Pty) Ltd

Research

Russell Lamberti, Chief Strategist
russell@etmanalytics.com

Sean McCalgan, Head of Real-Time Research
sean@etmanalytics.com

Rob Price, Market Strategist
rob@etmanalytics.com

Editor

Russell Lamberti, Chief Strategist
russell@etmanalytics.com

ETM Analytics (Pty) Ltd:

Tel: +27 11 875 8556
Web: www.etmanalytics.com
Block 5, Killarney
Fourways Golf Park, Roos Street
Fourways, Johannesburg
South Africa, 2055