Lesetja Kganyago: Role of the forecast in monetary policy decision making at the South African Reserve Bank

Address by Mr Lesetja Kganyago, Governor of the South African Reserve Bank, at the Sake24 Economist of the Year Presentation, Johannesburg, 18 June 2015.

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Good evening ladies and gentlemen. It is an honour for me to be the keynote speaker at this event, which recognises economists for their forecasting abilities. Those of you here this evening will understand better than most the difficulties involved with forecasting: that it is not an exact science, and at times it is more akin to being an informed "best guess". Forecasting is difficult. Inevitably we are dealing with an unknown and unknowable future. But whether we are policy makers or making long term investment decisions, we have to take a view of the future.

As monetary policy makers, our time horizons are long. Our policy instruments act with a lag, with interest rate decisions taken today only having their full impact on inflation in about 18 to 24 months time. In my remarks to you this evening, I will expand on the role of the forecast in monetary policy decision making at the Bank. We recently announced that in the interest of increased transparency, we will publish the assumptions underlying our forecasts as of the July MPC meeting. Although it is not my intention to reveal the assumptions this evening, I will make some general comments about the importance of these assumptions, and the process we adopt in arriving at them.

Although the inflation and growth forecasts are an integral part of the monetary policy-making process, it is important not to overstate their role. We do not, and should not, mechanistically use the forecast when making decisions. A great deal of subjective judgement goes into the process. Models are simplified approximations of reality; they are not reality. But they do provide a useful basis for discussion of the policy stance.

Contrary to what some people believe, inflation targeting is not a simple framework that requires a predictable or mechanistic reaction to deviations of expected inflation from the target. A flexible inflation targeting regime, for example, allows for temporary deviations of inflation from the target. How far and for what period such expected deviations can be tolerated depends on prevailing circumstances, the expected trajectory of inflation, as well as on our assessment of the risks to the forecast. So deviations under conditions of weak growth may entail different outcomes than deviations under conditions of strong domestic demand. Similarly, a given inflation trajectory can elicit different policy responses at different times depending on how the MPC members assess the risks to the forecast. A forecast with a strong upside risk could see a very different policy response to one with a strong downside risk.

Such considerations make it difficult for us to give a simple answer to the often asked question as to what period of time are we prepared to tolerate a deviation of (forecast) inflation from the target. The answer is generally, that it depends. It depends on how confident we are that inflation will return to the target; on how we see the risks; on the state of the economy; on how comfortably to within the target range inflation is expected to return, and how sustained this is expected to be; and how well anchored we judge inflation expectations to be. If inflation expectations are not well anchored, even short term deviations of inflation from target could cause inflation to accelerate away from the target. Conversely, well anchored inflation expectations could allow for a more extended deviation of inflation from the target.

So our tolerance of deviations from the target depends on our assessment of these various factors. Past history may be a guide to our reaction function, but it would be important to control for these various factors. These factors would also play an important role in

determining the strength and amplitude of the interest rate cycle. The need for well thought-through judgement complements the different kind of rigor provided by model-based assessments.

Forecast error can come about for various reasons, including model specification uncertainty; structural changes in the economy or unexpected events that are not adequately accounted for in the model; or faulty exogenous assumptions that are put into the model. These exogenous assumptions play an important role in determining the forecast. If the assumptions are not credible, the value of the forecasts deteriorates. The exogenous assumptions of the Bank's core model include the international oil price; international commodity prices; global inflation and global growth; government consumption expenditure growth; administered price increases; the real effective exchange rate; and the policy interest rate. Some assumptions are generally more important than others, and some may be of greater interest at different times, depending on the extent of their current and expected movements. For example, the oil price assumptions would be of greater interest at times when real oil price trends change direction, such as recently experienced.

The assumptions of the model can have a significant impact on the longer term forecast trajectory, as we have to take a view of the behaviour of these variables over a two to three year time horizon. Given the importance of the assumptions, a lot of time is spent deciding on them, and these discussions are an integral part of the MPC process. In fact, it is through the assumptions that the MPC members take ownership of the forecast, by making the final decision about the assumptions. To briefly describe the process: the modelling team, in conjunction with the various units in the Bank, will analyse the relevant data, and bring proposals to a meeting with the MPC members. Each assumption is then discussed and the reasons interrogated, and where deemed appropriate, the MPC members may require a change in the assumptions. Of course it is possible that MPC members may have differing views. Under such circumstances the majority view will prevail, but such differences will ultimately be reflected in the balance of risks to the forecast.

Our assumptions are benchmarked against various external forecasts. For example, our assumption of world growth is based to a large extent on our trading partner growth forecasts generated by the IMF. These forecasts are then used to derive a global growth assumption weighted by the shares of these countries in South Africa's international trade. Our assumption of government consumption expenditure is based on National Treasury budget projections.

The international oil price assumption is more challenging. Some central banks simply use the prevailing futures prices, while recognising the shortcomings of this approach. Apart from trying to get an understanding of the oil market dynamics, we also look at the forecasts of various oil analysts and institutions in order to get an idea of the consensus view, and we benchmark our decision against that. However,the divergence between the highest and lowest forecasts is often quite wide, particularly during periods of oil price volatility, reflecting the high degree of uncertainty in the market.

Often the assumptions change marginally or not at all. But the challenge emerges when we have to take a view on variables during periods of high volatility. For example, between 2011 and 2014, the international oil price was relatively stable, and our assumptions changed marginally, if at all, from meeting to meeting. During the second half of 2014, very few analysts expected prices to fall as much as they did. Indeed, during June of that year, geopolitical risks were posing an upside risk to these prices. As prices began to decline from August, we initially had incremental downward adjustments to the near-term oil price assumption, but the longer term assumptions were relatively unchanged. By January it became clear that oil prices were likely to remain lower for longer, resulting in a more substantial downward revision over the entire forecast period. However, we did not believe that the price would remain at the levels of around US$45 per barrel, and we also assumed an upward trend over the forecast period. To date our assumptions have been more or less

in line with actual outcomes. But changes in supply and demand conditions in international oil markets could require adjustments to these assumptions, with implications for the longer term inflation forecast.

A similar situation, but in the opposite direction, faced the MPC during the 2006-08 period of rising oil prices. At that time the market price continually surprised on the upside, (ultimately reaching around US$150 per barrel), until the global financial crisis took the oil price on the downside of the roller coaster ride to levels of around US$35 per barrel. Under such conditions, it is always difficult to know whether prevailing trends will persist over the forecast period, or if prices will stabilise or indeed decline. But we have to take a view, and whatever we decide could have a marked bearing on the inflation trajectory, given the 5,7 per cent weight of petrol in the CPI basket.

The other important and volatile assumption in the model is the exchange rate. Again, we have to try and look through short term volatility and focus on longer term trends. In order to take account of movements between the currencies of South Africa's major trading partners, (for example the recent sharp depreciation of the euro against the US dollar), we focus on the effective or trade-weighted exchange rate. Given the difficulties in forecasting the exchange rate, we make a simplifying assumption of a constant real exchange rate over the forecast period. This implies a change in the nominal effective exchange rate in line with South Africa's inflation differentials against its trading partners. We generally set the starting point at the prevailing index level, unless the MPC assesses this level is to be significantly out of line, in which case it may be set at a level deemed to be more appropriate. The focus of our discussions then becomes assigning the balance of risks to this forecast. We also look very carefully at different exchange rate scenarios, to get an idea of the sensitivity of the forecast to various alternative exchange rate outcomes.

Administered prices, apart from petrol, are generally fairly predictable, particularly where multi-year price determinations exist, as in the case of electricity tariffs. However, the recent application by Eskom for a significant tariff review has increased the upside risk to the forecast. While we would not be surprised if some of the Eskom request is acceded to, the quantum and timing is uncertain. Given these uncertainties, the MPC decided to assign a higher upside risk to the forecast, and wait for the outcome of the Nersa decision, due at the end of June, before changing the electricity price assumption. But in the meantime, we have analysed the impact of a number of scenarios on the inflation forecast. A scenario where the full 25 percent increase is granted to Eskom would increase inflation over a year by about 0,5 percentage points.

Perhaps the most contentious assumption is that of the policy interest rate. There is no unanimity among central banks as to how to deal with this issue. Broadly, there are four different approaches. The first approach is to assume an unchanged policy rate over the forecast period. While this allows us to assess the implications for inflation of an unchanged policy stance, it has the drawback that it is unrealistic during periods of regular changes to the policy rate. The second approach allows for an endogenously determined interest rate path- one that would be consistent with achieving the inflation target over the forecast period.

A third approach would be to incorporate the MPC's subjective view of the interest rate path over the forecast period. This approach is also used as a means to provide forward guidance to the market, and has been adopted for some time in some countries including New Zealand, Norway and Sweden. However, there is some risk that the public interprets this as an unconditional commitment to a particular interest rate path. A look at the so-called Fed "dots" (which represent the expectations of individual FOMC members of future policy rates) reveals a fairly wide dispersion of views among FOMC members, but also shows how these views can change from meeting to meeting. Similarly, the New Zealand experience with publishing a forward path shows how significantly the expected path can change between meetings. This has led Charles Goodhart to argue that forward guidance of this nature may be more useful over short periods than over longer time horizons.

The fourth approach is to adopt an exogenous market-based interest rate path. This path is also subject to change, and therefore prone to some of the same problems as the previous alternative. The benefit of approaches that do not assume a constant interest rate is that they give some sense of the effect of policy on inflation.

Our current approach is to assume a constant interest rate path in our core model, but the MPC is provided with alternative forecasts based on a market-based interest rate path. Furthermore, we have developed a General Equilibrium Model, which generates an endogenous interest rate path, and the results are also presented to the MPC at each meeting. However, only the forecasts of our core model are published.

At this stage, we continue with the practice of assuming an unchanged path, and providing qualitative guidance to the market. This includes specifying the risks to the forecasts, and signalling, when appropriate, our view of the interest rate cycle. It is important to emphasise that any signal, whether quantitative or qualitative, should not be seen as an unconditional commitment to specific actions. The use of a non-constant interest rate assumption remains a subject of discussion in many central banks, and we will continue to work on the utility of moving to such an approach.

Our forecasts are continually changing, at times marginally, at other times more markedly. This should not be surprising: the underlying assumptions often change in unpredictable ways, sometimes significantly, and this requires a change in our assumptions. We also benchmark our forecasts against forecasts of other institutions and analysts, and as seen in the various regular consensus surveys, those forecasts are subject to change as well. Once a year, we undertake an assessment of our forecasts, including a comparison of the accuracy of our forecasts relative to those of financial market analysts. Generally our forecasts have compared favourably on this basis, and the results are published once a year in a box in the Monetary Policy Review.

Our inflation forecasts this year have been subject to quite significant changes, mainly due to changing assumptions of some of the underlying variables, For example, our inflation forecast for 2015 changed from 3,8 per cent in January, to 4,8 per cent in March. Factors that were central to these revisions included the unexpected increase in the Road Accident Fund levy in the petrol price; changes in the international oil price; and the impact of the drought on spot prices of maize and wheat and their possible implications for food prices later in the year.

As set out in the May MPC statement, our latest forecasts suggest that inflation will average 4,9 per cent in 2015, 6,1 per cent in 2016 and 5,7 per cent in 2017, with a peak of around 6,8 per cent in the first quarter of next year. While the headline forecast deteriorated only somewhat compared to that of the March MPC meeting, the upside risks to the forecast were assessed to have deteriorated quite markedly. And should these risks transpire, we could see a more significant change in the forecast by the next meeting. Further depreciation of the exchange rate, an expected increase in electricity tariffs, and higher-than-expected wage settlements, have the potential to worsen the inflation outlook. Moderating downside risk arose primarily from risks to GDP growth. Our latest forecast is for growth of 2,1 per cent and 2,2 per cent in 2015 and 2016 respectively, rising to 2,7 per cent in 2017. This growth forecast assumes an easing of the electricity supply constraint by 2017. Hopefully there is not too much downside risk to this assumption!

In conclusion, given the inherent difficulties with forecasting, the best we can do is to ensure that we continue to develop our suite of models, and keep up with the latest international advances and trends. Although we can continually increase the sophistication of our models, a model will never be a perfect representation of the economy, and the assumptions will always be subject to change. And given the risks to the forecasts, policy decisions will inevitably require a degree of subjective judgement. I would not want to forecast the winner of this competition, but I wish all of the finalists the best of luck and heartiest congratulations to the winner.

Thank you.