The information content of the yield spread about future inflation in South Africa

by

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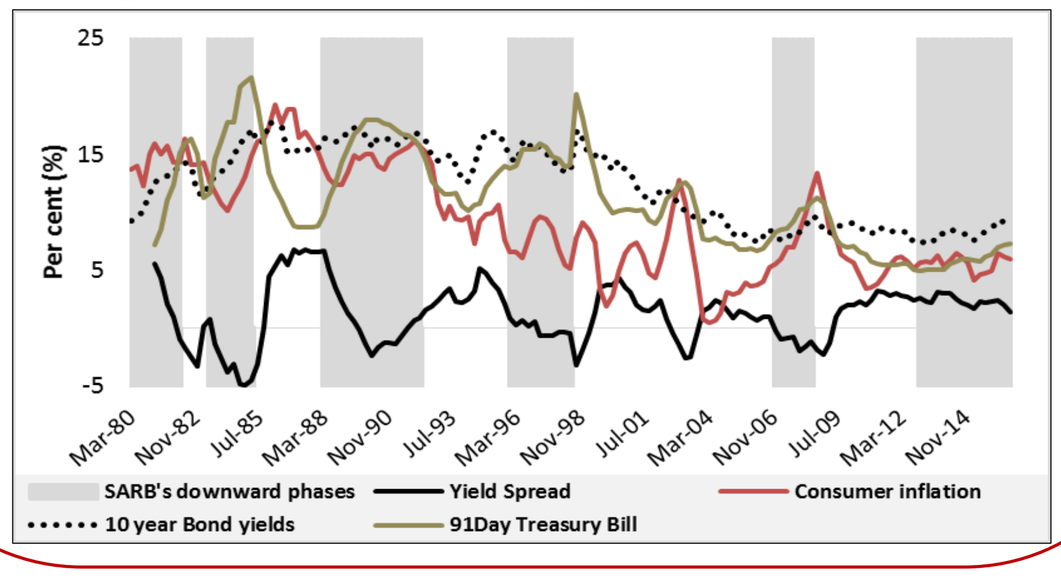
1. Introduction

❖ This study was conducted to assess whether the yield spread is a useful predictor for future inflation in South Africa

❖The analysis also aims to reveal if the monetary policy regime shift in February 2000 affected the relationship between the yield spread and future inflation

❖Given that SA has highly liquid bond markets and generally highly developed financial markets, this warrants the yield spread analysis as is the case in developed countries such as Europe and the United States.



2. Methods

Data Source

❖SA quarterly data on inflation rates, government's 91-day Treasury bills and 10-year government bonds are used over the period 1980-2016

❖Analysis was then done for the full sample period (1991Q1 – 2016Q1) and for two sub periods (1991Q1-1999Q4) and (2000Q1-2016Q1)

Econometric Model

❖The analysis uses the Mishkin methodology to derive inflation-change forecasting equation.

❖This methodology is popular in yield curve studies owing to its simplicity and robustness

❖The derivation of the Mishkin methodology is founded on two building blocks

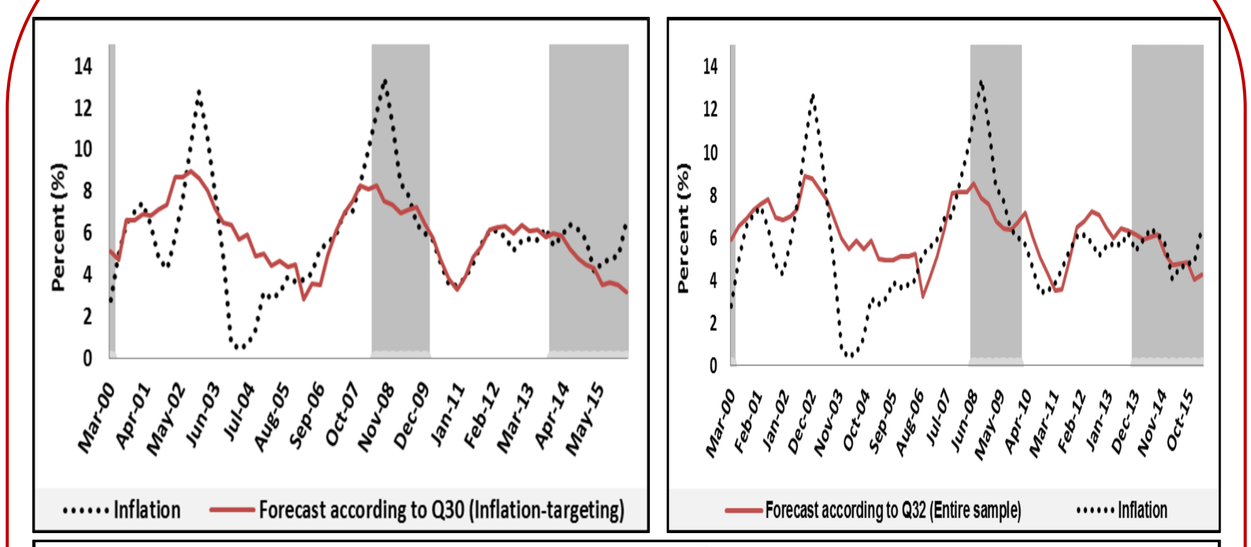
- ❖The Fisher Equation : examines the link between real interest rates, nominal interest rates and expected inflation
- ❖Expectations hypothesis theory: at any point in time, the shape of yield curve reflects markets expectations about current and future short-term interest rates

❖The inflation forecasting equation is a regression of the change in the future m-period inflation rate from the n-period inflation rate on the slope of the yield curve

$$\pi_t^m - \pi_t^n = \propto_{m,n} + \beta_{m,n}[i_t^m - i_t^n] + \varepsilon_t^{m,n}$$

3. Results

Fitted yield spread and consumer inflation



Comparing the Entire period and Iinflation targeting period							
Spread		Horizon (in Quarters)					
		4	8	12	24	30	32
2000Q1-2016Q1	Beta	0.23	0.12	0.10	0.21	0.57	0.67
	t-stat	0.88	0.66	0.48	**1.80*** **	**4.08***	**3.01***
	Adjusted R-squared	0.40	0.38	0.38	0.40	0.53	0.53
	AIC	4.35	4.37	4.48	4.35	4.19	4.09
	SIC	4.45	4.47	4.42	4.45	4.13	4.20
1991Q1-2016Q1	Beta	0.08	0.12	0.18	-0.07	0.49	0.72
	t-stat	0.24	0.59	0.93	-0.30	**2.37****	**3.09***
	Adjusted R-squared	0.27	0.31	0.23	0.01	0.12	0.26
	AIC	5.04	5.04	5.08	4.82	4.67	4.62
	SIC	5.12	5.12	5.03	4.91	4.76	4.56

Note: *,** and *** denotes significance at 1%, 5% and 10% critical level respectively

Findings

❖The slope of the yield curve is useful in forecasting the future path of inflation, particularly in the long-term (24 quarters ahead for SA)

- ❖This therefore implies that the yield spread is not optimal in forecasting the near-term inflation (i.e. 23 quarters or less)

❖Examining sub periods separated by the adoption, in 2000, of inflation targeting

- ❖We find that the monetary regime shift strengthened the relationship between the yield spread and future inflation

4. Conclusions

Summary Conclusions

❖Using SA data we find strong evidence that the yield spread contains information on the future path of inflation

❖The results of the regime shift in 2000 suggest that long term interest rates are well anchored in SA

- ❖It then follows that monetary policy decisions have strong impact on inflation expectations and thus on long-term borrowing costs

Recommendations

❖This yield curve analysis therefore offers policy makers another tool to forecast long term inflation.

❖Given that well-anchored inflation expectations reduce the inflation risk premium on long term interest rates, policy makers can influence the long end of the yield curve and thus support fiscal and financial sector sustainability using the yield spread

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