

# Identifying a Taylor rule with unemployment in South Africa

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## OBJECTIVES

We make use of a modified Taylor rule to investigate whether:

- 1) The Taylor rule accurately describes the SARB's reaction function in setting interest rates
- 2) The SARB takes into account labour market conditions when making their policy rate decisions

## KEY RESULTS

- The SARB's policy rate decisions closely fit to a Taylor rule, especially when making use of inflation expectations, suggesting that the SARB is forward looking in setting policy rates
- Business and trade union expectations are of more significance in the Taylor rule specifications, which imply that the SARB considers these two groups' expectations in making their interest rate decisions
- Our Taylor rule that has the unemployment gap as an explanatory variable indicates that the SARB takes the deviation of the unemployment rate from its natural rate into account when making its policy rate decisions
- The labour force participation rate (LFPR) gap, which is the deviation of the LFPR from its long-run average, presents itself as an alternative measure to the output gap used in the simple Taylor rule

## METHODOLOGY

- We estimate simple regressions following *Kendall and Ng (2013)* to estimate a "classic" Taylor rule using:
  - 1) the output gap
  - 2) an unemployment gap, and
  - 3) a labour force participation rate gap
- We make use of quarterly data that captures the official inflation targeting period (2002Q3 – 2015Q3)

## TAYLOR RULE ESTIMATIONS USING INFLATION EXPECTATIONS

Specification	Inflation expectations (t)	Inflation expectations (t+1)	Analysts inflation expectations (t+1)	Businesses inflation expectations (t+1)	Trade unions inflation expectations (t+1)
Output gap (2010 prices)	0.609 (0.20)***	0.751 (0.21)***	0.344 (0.25)	0.879 (0.22)***	0.860 (0.21)***
Deviation: Current-year inflation expectations	1.069 (0.16)***				
Deviation: Year-ahead inflation expectations		1.561 (0.26)***			
Deviation: Year-ahead inflation expectations (Analysts)			1.716 (0.46)***		
Deviation: Year-ahead inflation expectations (Businesses)				1.300 (0.23)***	
Deviation: Year-ahead inflation expectations (Trade unions)					1.134 (0.19)***
Constant term	5.661 (0.38)***	4.902 (0.53)***	5.747 (0.60)***	4.851 (0.56)***	5.364 (0.46)***
<b>R<sup>2</sup></b>	<b>0.53</b>	<b>0.47</b>	<b>0.29</b>	<b>0.45</b>	<b>0.47</b>
<b>No. of observations</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>

Significance levels: \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

Note: Figures in brackets represent standard errors

## TAYLOR RULE ESTIMATIONS USING UNEMPLOYMENT GAP MEASURES

Specification	Taylor rule using the unemployment gap	Taylor rule using the labour force participation rate
Deviation: Headline inflation from target	0.754 (0.17)***	0.415 (0.14)***
Deviation: Unemployment rate from natural rate*	-0.363 (0.16)**	
Deviation: Labour force participation rate from long-term average		0.471 (0.23)**
Constant term	8.626 (0.47)***	7.835 (0.32)***
<b>R<sup>2</sup></b>	<b>0.53</b>	<b>0.35</b>
<b>No. of observations</b>	<b>83</b>	<b>63</b>

Significance levels: \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

Note: Figures in brackets represent standard errors

\* The unemployment deviation could be capturing movements in the LFPR

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