

AN ANALYSIS OF THE MONEY MARKET LINKAGES BETWEEN SOUTH AFRICA AND SELECTED MAJOR WORLD ECONOMIES

By

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Paper presented at the Biennial Conference of the Economic Society of South Africa, September 7-9, 2009,
Port Elizabeth, South Africa

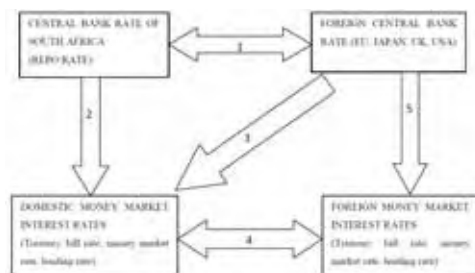
OUTLINE

- INTRODUCTION
- LITERATURE REVIEW
- METHODOLOGY
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- CONCLUSION

1. INTRODUCTION

- Globalisation and the increase in international capital flows have increased the financial links among countries, within a sub-region and also across continents
- Implications of money market linkages:
 - Independent monetary policy hampered
 - Increase susceptibility to adverse external shocks
 - Portfolio diversification
- It is therefore crucial to examine the extent of the linkages btw the major world economies and a growing emerging market economy like South Africa.

Figure 1: Schematic of linkages



OBJECTIVES OF STUDY

- To analyse the extent to which the SARB repo rate is linked to the central bank rates of SA's major trading partners – LINK 1
- To compare the response of the money market in SA to the SARB's repo rate with the response of the money market to the central bank rates of other countries – LINK 2 & 3
- To examine the long run relationship between the SA money market and the money markets of its major trading partners – LINK 4

LITERATURE REVIEW

- Underlying forces driving linkages:
 - Arbitrage opportunities
 - Policy convergence
 - Common shocks
 - Financial Liberalisation

EMPIRICAL REVIEW

- **DEVELOPED COUNTRIES:**
 - Majority of empirical research focused on US, Germany and major European nations (cf. Ciampolini & Rohde, 2000; Bremmes *et al.*, 2001; Ehrmann & Fratzscher, 2002; Ehrmann *et al.*, 2005; Figueira *et al.*, 2005)
 - Karfakis and Moschos (1990) - evidence of unidirectional interest rate linkages from Germany to the other EMS countries, supporting the notion of the dominant role of Germany, based on Granger causality tests.
 - Many studies confirmed a dominant role for the US in driving money market interest rate linkages - Katsimbris and Miller (1993); Ahmad & Sarver (1994); Barassi *et al.* (2000); Bremmes *et al.* (2001)
- **DEVELOPING/EMERGING ECONOMIES:**
 - Key Asian studies - Phylaktis (1999); Anoruo *et al.* (2002) - both found evidence of linkages within the Asian region
 - Aziakpono (2006, 2008) analysed the links between interest rates of South Africa and the other SACU countries - dominant role for South Africa observed.
 - Nielsen *et al.* (2005) tested the level of financial integration for the CMA countries in Southern Africa - Namibia and Swaziland strongly integrated with South Africa
 - Sander and Kleimeier (2006) examined interest rate pass-through in the CMA region - leading role for South Africa found
 - Aziakpono *et al.* (2008) examined the extent of integration within the banking sector in the SADC region - strong integration within CMA and then with SACU countries
- **NO STUDY HAS BEEN PREVIOUSLY CONDUCTED ON THE LINKS BETWEEN SOUTH AFRICA'S MONEY MARKET AND MAJOR WORLD ECONOMIES - THIS STUDY FILLS THAT GAP**

METHODOLOGY

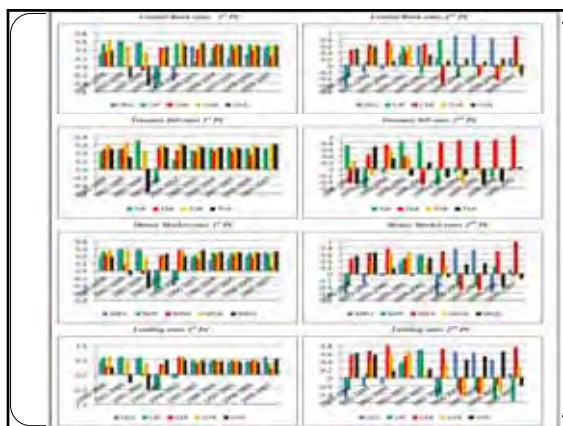
- Principal Component Analysis
- Cointegration Tests:
 - Johansen Maximum Likelihood Test
 - Engle-Granger 2-Step
 - Cointegration Regression Durbin-Watson (CRDW)
 - ECM based test
- Stationarity test on Interest Rate Spread

Countries and Variables

- Japan, EU, South Africa, UK, USA
- Central Bank Rates, Money Market Rates, Treasury Bill Rates, Lending Rates.
- Monthly data from: 1990 - 2007
 - Nine Year Rolling Window

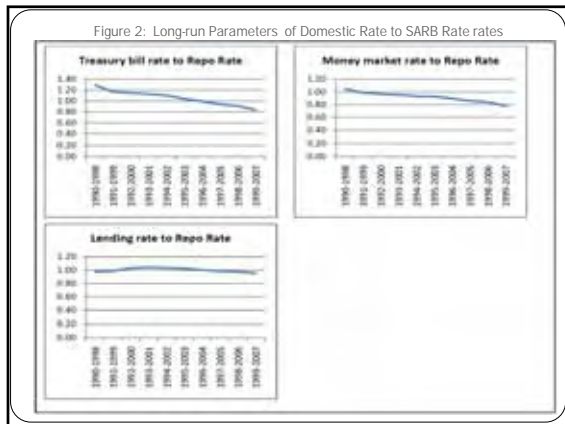
EMPIRICAL RESULTS: PCA

- 2 significant PCs for most of the rolling windows for all interest rates.
- South Africa moving on its own in most periods, accounts mostly for the 2nd significant PC
- Increased integration when PCA is repeated without South Africa.
- PCA therefore shows no significant and consistent linkages between South Africa and EU, UK, US and Japan for any of the interest rates examined



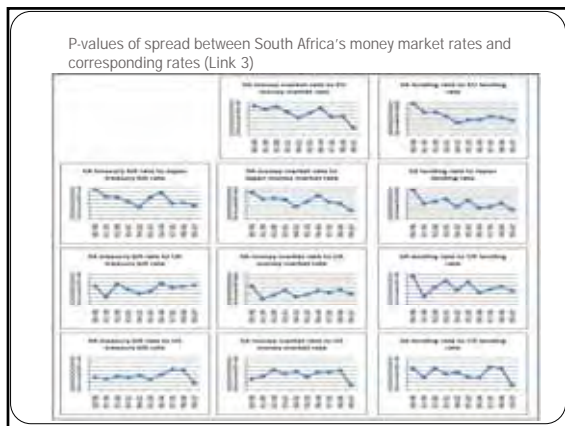
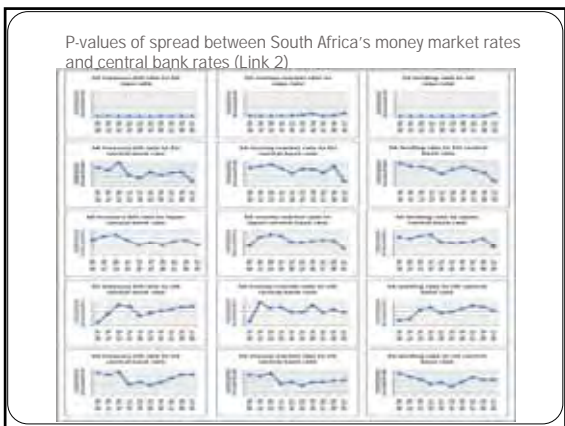
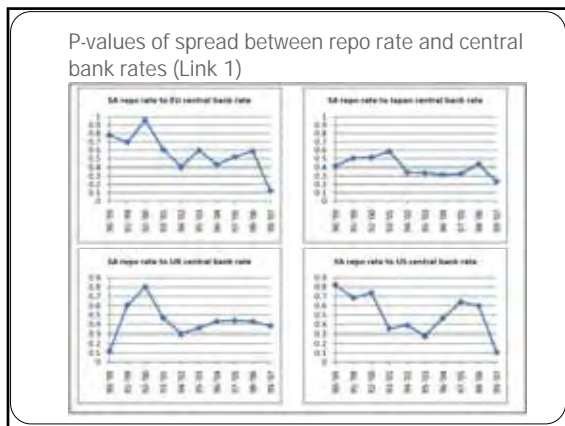
2. Cointegration Results

- **Link 1: Btw Repo Rate and other Central Bank Rates:**
 - No cointegration found btw repo rate and central bank rates of other countries
- **Link 2: Btw Domestic Rates and Central Bank Rates**
 - Strong domestic link observed, no linkages with other central bank rates
- **Link 3: Btw SA's money market interest rates and corresponding rates of the other countries**
 - No cointegration is found btw all three domestic interest rates and the corresponding rates of the EU, Japan, UK and US



3. Stationarity test on Spread

- No evidence of linkage btw repo rate and other central bank rate
- Strong linkage present btw domestic interest rates and repo rate.
- No linkage btw domestic interest rates and other central bank rates.
- No linkage present btw domestic interest rates and corresponding rates of other countries
- Some linkages found btw domestic interest rates and corresponding rates of other countries, except Japan, once risk premium is accounted for – RISK PREMIUM THEREFORE A KEY FACTOR



CONCLUSIONS

- For the first objective of analysing the extent to which monetary policy in South Africa is dependent on the central bank rates of the EU, Japan, UK and US, all three tests conclusively found no long-run linkages.
- The link btw the Treasury bill, money market and lending rates of South Africa with all central bank rates revealed a strong degree of response to the repo rate of South Africa, but do not respond to any of the other countries.
- South Africa's money market interest rates do not move closely with the corresponding interest rates of the other countries.