

# 南非之匯率實證研究

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## 摘要

本文擬探討南非之匯率與利率等總體經濟變數間的因果關係，以及長期均衡關係及短期動態調整。計量方法上採用 Johansen 共整合分析以及誤差修正模型來檢驗，實證期間為 2000 年 12 月至 2010 年 11 月。依據本文實證結果，可得到以下的結論：一、Johansen 共整合分析顯示，物價指數上漲會使南非幣升值，而貨幣供給額與利率上升，皆會使南非幣貶值。二、VECM 分析因果關係可知，貨幣供給領先於匯率變動，利率與匯率互為因果，物價指數與匯率間無因果關係。故投資人可參考貨幣供給之變動，進而判斷匯率之走勢。

關鍵字：南非幣、匯率、單根檢定、共整合檢定、因果檢定

# **An Empirical Study of Exchange Rate in South Africa**

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## **ABSTRACT**

The aim of this paper is to examine the relationship between exchange rate and macroeconomic variables. A variety of time-series methodologies, unit root test, cointegration test, and causality test, error correction models, are applied to investigate the relationship. The empirical results of this study are summarized as follows:

First, the empirical results of Johansen's cointegration showed that the cointegration of exchange rate, M2, CPI and interest rate, which implied there is a long-run equilibrium relationship among these variables. The increasing of price will make South Africa's currency appreciate, but the increasing of money supply and interest rate will make it depreciate.

Second, according to the results of the error correction model it is unidirectional running from M2 to exchange rate. There is bi-directional causality between interest rate and exchange rate, but there is no causality between CPI and exchange rate.

**Keywords : exchange rate, unit root test, cointegration, causality**

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## 參考文獻

1. Andrea, S. (2007), "The Real Equilibrium South African rand/US Dollar Exchange Rate: A Comparison of Alternative Measures." 2007 International Advances in Economic Research.
2. Bachman, D., Jongmoo, J., Kopecky, K. J. (1996), "Common Factors in International Stock Prices: Evidence from a Cointegration Study," International Review of Financial Analysis, 5(1), 39-53.
3. Banerjee, A., Dolado, J., Gallbraith, J. W., Hendry, D. F. (1993), Cointegration, Error-Correction, and The Econometric Analysis of Non-stationary Data. Oxford University Press, New York.
4. Bhundia, A., Gottschalk, J., (2003), "Sources of Nominal Exchange Rate Fluctuations in South Africa," International Monetary Fund Working Paper P/03/252, 20.
5. Bilson, J. F. O. (1978), "Rational Expectations and the Exchange rate", in J. Frenkel and H. Johnson, eds., "The Economics of Exchange rates," Addison-Wesley Press.
6. Botha, I., Pretorius, M. (2009), "Forecasting the Exchange Rate in South Africa: A Comparative Analysis Challenging the Random Walk Model," African Journal of Business Management, 3 (9), 340-349.
7. Caporale, G. M., Gil-Alana, L. A. (2010), "Testing PPP for the South African Rand/US Dollar Exchange Rate at Different Frequencies," Economics and Finance Working Paper, Brunel University, 10-11.

8. Claudio , R. (2008), "Exchange Rate Volatility and Trade In South Africa," Working Paper, World Bank.
9. Dickey,D.A. , Fuller,W.A. (1979), "Distribution of Estimators for Autoregressive Time Series with a Unit Root,"*Journal of the American Statistical Association*, 74, 427-431.
10. Dickey, D.A., Fuller, W. A. (1981). Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root. *Econometrica*, 49, 1057-1072.
11. Dornbush, R. (1976) , "Exchange Rate Expectations and Monetary Policy," *Journal of Political Economics*, 84, 1161–1176.
12. Engel, R. F., Granger, C. W. (1987),"Cointegration and Error Eorrection Representation, Estimation and Testing," *Econometrica*, 55, 251-276.
13. Faulkner, D.,Makrelov, K. (2008), "Determinants of the equilibrium exchange rate for South Africa's manufacturing sector and implications for competitiveness," Working Paper.
14. Frankel, J. A. (2007), "On The Rand:Determinants of The South African Exchange Rate," *South African Journal of Economics*, 75, 425–441.
15. Frankel, J. A. (1979), "On The Mark: A Theory of Floating Exchange Rate Based on Real Interest Differentials," *American Economic Review*, 69, 611-622.
16. Frenkel, J. A. (1976), "A Monetary Approach to the Exchange Rates:"Doctrinal Aspects and Empirical Evidence,"*Scandinavian Journal of Economics*, 78, 200-224.
17. Granger, C. W. J. (1969). "Investigating Causal Relation by Econometric Models and Cross-Spectral Methods," *Econometrica*, 37(3), 424-438.

18. Granger, C. W. J., Newbold, P. (1974), "Spurious Regressions in Econometrics," *Journal of Econometrics*, 2, 111-120.
19. Johansen, S. (1988), "Statistical Analysis of Cointegration Vectors," *Journal of Economic Dynamics and Control*, 12, 231-254
20. Karoro, T. D., Aziakpono, M. J., Cattaneo, N. (2005), "Exchange Rate Pass-through to Import Prices in South Africa: Is there Asymmetry?" Rhodes University, Working Paper, 79.
21. Lawrence, R. (2007), "Trade Flows and The Exchange Rate In South Africa School of Economics," Working Paper.
22. Mtonga, E. (2007), "The Real Exchange Rate of the Rand and Competitiveness of South Africa's Trade," MPRA Paper No. 1192
23. Nell, K. (2000), "Imported Inflation in South Africa: An Empirical Study," University of Kent, Studies in Economics Series 0005
24. Pretorius, A., de Beer, J. (2002), "Can Some of South Africa's Recent Exchange Rate Volatility Be Attributed to Contagion?" 2002 Annual Forum at Glenburn Lodge, Muldersdrift.
25. Schwert, G. W. (1989), "Stock Returns and Real Activity: A Century of Evidence," *Journal of Finance*, 45(4), 1237-1257.
26. Takaendesha, P. (2006), "The Behaviour and Fundamental Determinants of The Real Exchange Rate in South Africa," Unpublished MA Thesis. Rhodes University.