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Sharemarket Performance and the New Zealand Dollar: Inside the Relationships

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Sharemarket Performance and the New Zealand Dollar: Inside the Relationships

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Abstract

New Zealand is often described as a small open economy with substantial foreign ownership of its assets. The economy is therefore sensitive to exchange rate movements and the sharemarket being the barometer of economic activities should be no exception. Further, exchange rates may also be endogenous to sharemarket fluctuations. This thesis analyses the relationship between the value of the New Zealand dollar vis a vis the currencies of its five largest trading partners and the New Zealand sharemarket performance between 1999 and mid-2005 using the vector autoregression (VAR) and vector error correction model (VECM) approaches. Findings from the research suggest the New Zealand sharemarket is robust to currency fluctuations in both the short- and long-term. The only exception to this is the New Zealand dollar–Australian dollar exchange rate (NZD/AUD), which has a negative short term effect on the sharemarket. The NZD/AUD is also the only exchange rate to depreciate following a positive shock to the sharemarket.

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List of Abbreviations:

Foreign Currencies

AUD.....	Australian Dollar
CAD	Canadian Dollar
DEM.....	German Deutschmark
EUR.....	Euro
GBP.....	Great British Pound Sterling
JPY.....	Japanese Yen
MYR.....	Malaysian ringgit
NZD.....	New Zealand Dollar
THB.....	Thailand Baht
TWI.....	Trade-weighted Index
USD.....	United States Dollar

Share Price code of the New Zealand Companies Researched

AMP.....	AMP Limited
APT.....	AMP NZ Office Trust
AIA.....	Auckland International Airport Limited
ANZ	Australia and New Zealand Banking Group Limited
AXA.....	AXA Asia Pacific Holdings Limited
BRY.....	BIL International Limited
CNZ.....	Capital Properties New Zealand Limited
CAH.....	Carter Holt Harvey Limited
CAV.....	Cavalier Corporation Limited
FPH.....	Fisher & Paykel Healthcare Corporation Limited
FBU.....	Fletcher Building Limited
HLG	Hallenstein Glasson Holdings Limited
HBY	Hellaby Holdings Limited
IFT	Infratil Limited
KIP	Kiwi Income Property Trust
LNN	Lion Nathan Limited
MFT.....	Mainfreight Limited
MHI	Michael Hill International Limited
NOG	New Zealand Oil & Gas Limited
NGC.....	Natural Gas Corporation Holdings Limited
NPX.....	Nuplex Industries Limited
POT.....	Port of Tauranga Limited (NS)
POA.....	Ports of Auckland Limited

PFI	Property For Industry Limited
RBD.....	Restaurant Brands New Zealand Limited
SAN.....	Sanford Limited
SKC.....	Sky City Entertainment Group Limited (NS)
STU.....	Steel & Tube Holdings Limited
TEL.....	Telecom Corporation of New Zealand Limited (NS)
TLS.....	Telstra Corporation Limited
TEN.....	Tenon Limited
THL.....	Tourism Holdings Limited
TPW.....	TrustPower Limited
WHS.....	Waste Management NZ Limited
WAM.....	The Warehouse Group Limited

Other Abbreviations

AIC.....	Akaike Information Criterion
BLUE.....	Best Linear Unbiased Estimator
DC 500.....	Department of Commerce Index of 500 stocks
EG.....	Engle and Granger (1987) test for cointegration
GARCH.....	Generalised autoregressive conditional heteroskedasticity.
GDP.....	Real gross domestic product
GIRF.....	Generalised Impulse Response Function
ECM.....	Error Correction Model
FASTER.....	stands for Fully Automated Screen Trading and Electronic Registration
FDI.....	Foreign Direct investment
FTSE	Financial Times Stock Exchange
JJ Test.....	Johansen (1988) and Johansen and Juselius (1990) cointegration test
LM.....	Breusch-Godfrey Lagrange Multiplier test
LR.....	Long run
MNC.....	Multinational corporation
Mid-Cap 30.....	New Zealand sharemarket index including constituents in the NZSX 50 minus the smallest ten companies (in terms of capitalisation) and those in the NZSX 10.
NASDAQ.....	National Association of Securities Dealers Automated Quotations.
NZ.....	New Zealand
NZSX-10.....	Sharemarket index comprising the ten largest companies listed in the New Zealand sharemarket.
NZSX-50.....	Sharemarket index comprising the 50 largest companies listed in the New Zealand sharemarket.

NZSX-All.....Sharemarket index comprising all companies listed in
 the New Zealand sharemarket.
 NZTE.....New Zealand Trade and Enterprise
 OCR.....Official cash rate
 OECD.....Organisation for Economic Cooperation and
 Development
 OIRF.....Orthogonalised Impulse Response Function
 RBNZ.....Reserve Bank of New Zealand
 S&P 500.....Standard & Poors 500 Index
 SBC.....Schwarz Bayesian Criterion
 SE.....Standard error
 SIC.....Schwarz Information Criterion
 SM.....Sharemarket
 SOE.....Small open economy
 SP.....Share price
 SR.....Short run
 US.....United States of America
 VAR.....Vector autoregression
 VECM.....Vector error correction model
 VOT.....Volume of Trade

Chapter One:

INTRODUCTION

“International companies now know that what happens to the currencies in which they tot up the costs, revenues and assets, affects their results as much as their success in making and selling products.”

- The Economist, April 4, 1987

1.1: Introduction

Economies are more interconnected today than ever before: exporters, importers and multinationals are continuously expanding operations into new and existing foreign markets. Further, technological advances are reducing barriers to international capital flows for shareholders and financial intermediaries.

Following such expansion necessitates foreign exchange turnover to increase, which may result in uncertain company and share price performances.

Costs, revenues and competitive environments for importers, exporters and multinationals are prone to exchange rates. Their values also influence overseas investment decisions and affects repayments on overseas borrowing. An appreciating domestic currency enhances investment returns to foreign investors, but dampens returns to domestic investment abroad. The notion of exchange rate pass-through also affects consumers directly and these all have flow-on effects throughout an economy. Hence, much of the economy's performance is a function of exchange rates.

Because few elements of business practice are untouched by exchange rate fluctuations, the subsequent company management of exchange rate exposure can significantly affect profitability, which is the main driver of company share price.

The sharemarket (SM) is an aggregate weighted index of overall corporate performance. Therefore its value is sensitive to exchange rate fluctuations. This causal inference is often identified as the Goods Market approach. The Portfolio Balance approach is another theory, suggesting the existence of a feedback mechanism from the SM to exchange rates.

Empirical results are scattered between these two theories, which are both likely to characterise an economy. It is of value however, to understand the intricacies of such relationships, and this is the researcher's intention. This research unravels answers to the following question:

***What relationships are there between the New
Zealand Sharemarket performance and currency
fluctuations?***

Employed methodologies include cointegration and vector error correction estimation, which provide insight into short- and long-run relationships. Further complementing this, are block Granger causality, weak exogeneity tests, and generalised impulse response functions.

Exchange rates included in the research are those comprising New Zealand's trade weighted index (TWI). These include the NZD/USD, NZD/AUD, NZD/JPY, NZD/GBP, and NZD/EUR (refer to the list of abbreviations, p.7). Specific SM indexes to be analysed include the NZSX10, MidCap30, NZSX50 and NZSXALL. Ninety day bank bill rates will be included into the analysis, for the arguments put forward in Section 3.3.2.

1.2: Thesis Outline

Following this chapter, Chapter Two describes theories on how companies can be exposed, and how the SM is integrated with exchange rates. The historical performance of both the New Zealand SM and New Zealand dollar (NZD) are also within this chapter. Following Chapter Two is a literature review contributing relevant empirical background and more theory. Chapter Three also justifies the methodology employed in this thesis, which is outlined in Chapter Four. Results are within Chapter Five, and the conclusion in Chapter Six. Before Chapter Two begins, the value of researching this area is justified.

1.3: Value of this Research

To examine links between New Zealand's currency and its SM is of interest to several groups. These include domestic and foreign investors-current and potential, as well as economists, investment analysts, general managers of New Zealand (NZ), members of the public sector and fellow researchers.

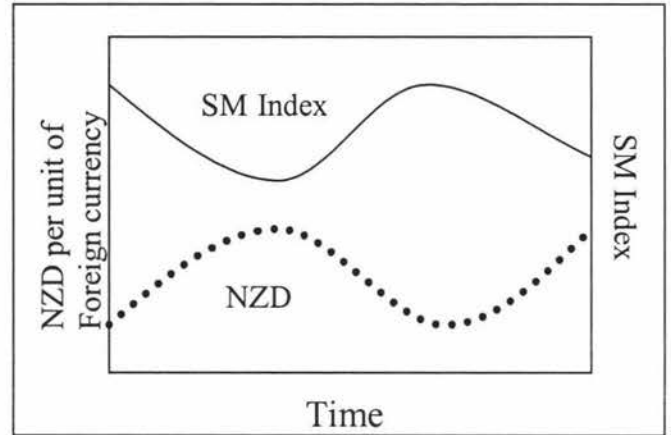
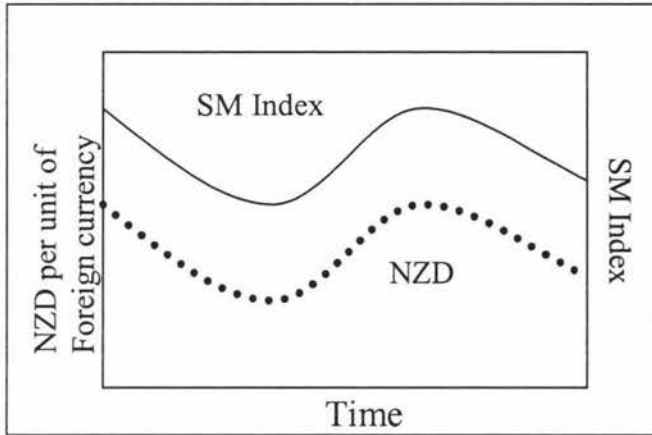
Results will give an estimate of how significant foreign currency fluctuations are to NZ's SM, and how significant fluctuations in the SM are to the NZD. To estimate the intricacies of how the SM and Foreign exchange markets have been integrated in the past, will uncover information regarding the exchange rate forces upon the SM performance in the future.

It was reported in early 2000 that 55 per cent of NZ's SM was foreign-owned (Newman and Briggs, 2000, p.62). By 2005, this proportion was

approximately 48 percent (Stuff, 2006b). Foreign investment is a function of both share price movements and exchange rate fluctuations.¹ Figures 1.1 and 1.2 below illustrate the favourable and unfavourable scenarios, from the perspective of foreign shareholders invested in New Zealand.

Figure 1.1: Favourable Scenario

Figure 1.2: Unfavourable Scenario



Foreign investment returns in NZ are thus catalysed when both the NZD and share prices are low, and characterised by a pro-cyclical relationship: share value increases if the NZD is appreciating, but drops while depreciating. The unfavourable scenario inverts this relationship, such that share prices are negatively associated with a strongly performing NZD. Hence, the unfavourable scenario is where the exchange rate works against any gains made by foreign investment.

Results of this thesis will give insight towards which foreign investment sources should reap above-normal yields, and which currency sources earn relatively unattractive returns. Results shall therefore provide information for international portfolio investors, of investment risk in the NZ SM.

¹ For simplicity, dividend yields are ignored in this thesis.

If it is found that the NZD/USD and NZ SM increase together, it means US-sourced investment could share a similar characteristic to Figure 1.1. Results could therefore promote further investment by NZ companies. In the case where the NZ SM shares a minimal relationship with a particular currency such as the NZD/JPY, it indicates investment in the NZ SM to be robust, which could eliminate some degree of currency risk for Japanese-based investment portfolios.

Currency exposure is among the many risks facing share price performance.² Nonetheless, it is a risk that investors desire to hedge in their international portfolios. Results from this analysis will provide information for foreign investors, in deciding whether to incorporate NZ-based SM investments into their portfolio mix.

The Reserve Bank of New Zealand Act 1989 makes the primary responsibility for the Reserve Bank Governor to control price stability by altering the official cash rate (OCR). In January 2006, the most recent update of the Policy Targets Agreement was signed on September 17 2002, stating that “in pursuing its price stability objective, the Bank shall implement monetary policy in a sustainable, consistent and transparent manner and shall seek to avoid unnecessary instability in output, interest rates and the exchange rate.”³

² These include credit and interest rate risk, taxation, and inflation, among others. For a good summary of each of these, along with these risks to investment, refer to Watson, C. (2004, p.29).

³ Quoted from Bollard, A., and Cullen, M. (2002). Policy Targets Agreement 2002. Cited from www.rbnz.co.nz. Retrieved January 19, 2006. A relevant description of the price stability target has been described as “...maintaining a stable level of prices, so that monetary policy can make its maximum contribution to sustainable economic growth, employment and development opportunities within the New Zealand economy.” Quoted from RBNZ. (March, 1998). The Reserve Bank of New Zealand Act 1989: Our Accountability to New Zealanders, p. 6. Cited from www.rbnz.co.nz. , Retrieved January 19, 2006.

Exchange rate forecasts have predicted the NZD to depreciate significantly in 2006. In January that year, the NZD/USD remained approximately US\$0.68. At the time, this exchange rate was forecast fall by around 15 per cent (to US\$0.58) by December 2006.⁴

Because the SM is an indicator of an economy's performance,⁵ it is important for the Reserve Bank to fully understand the dynamics between exchange rates, interest rates and SM performance. Tightening monetary policy in response to inflationary pressure will have more support for instance, if the NZD is currently depreciating, and findings suggest such depreciation to spur the economy via its SM (since interest rates generally appreciate a currency). On the other hand, if it is known the falling NZD dampens SM performance, there may be a new justification not to intervene, since inflationary pressures may naturally ease. This research contributes information to such matters.

For the arguments in Section 3.3.2, ninety-day bank bill rates are included in the analysis. These are a proxy for NZ interest rates overall. The Reserve Bank will therefore have more understanding on the effect interest rates have on the SM and exchange rates.

⁴ In January, 2006 both the Bank of New Zealand (BNZ) and Australia and New Zealand Banking Group (ANZ) forecast the NZD/USD exchange rate in December , 2006 to be US\$0.58. This BNZ forecast was sourced from: Alexander, T. (2006), BNZ Weekly Overview, January12. Cited from www.bnz.co.nz .Retrieved January 21, 2006. The ANZ forecast was sourced from: McDermott, *et al.* (2006, January 16). *Market Focus: New Zealand: Australia and New Zealand Banking Group*. Cited from www.anz.co.nz Retrieved January 21, 2006.

⁵ Empirical evidence linking the performance of the economy positively with the SM is vast. See for instance Goenewold (2004) finding this evidence for Australia, Fama (1990), Chen *et al.*, (1986), Schwert (1990), find this evidence for the US. and Cheung and Ng (1997) provide evidence for various countries.

Supporting the comments of Chen *et al.*(2004), most research has focused this topic on large economies/sharemarkets. This thesis provides insight towards SM and exchange rate interactions of small open economies.