

# Survey of Foreign Exchange Market Activity

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*In this article, Ian Jupp presents the main results of a survey of foreign exchange activity in New Zealand and compares key features of the local market with the international market.*

## Executive Summary

This article presents a 'slice of time' view of the foreign exchange market in New Zealand. The view was developed from a foreign exchange survey conducted in New Zealand by the Reserve Bank during April 1992. The results of this survey, together with the survey results of twenty-five other countries, were combined to form a global picture by the Bank for International Settlements (BIS)<sup>1</sup>. Global data is compared to data from a similar survey conducted in 1989. A rough feel for developments in the New Zealand market over the same time frame is obtained by comparing the survey data with less detailed foreign exchange turnover information which is supplied to the Reserve Bank on a regular basis.

The highlights are outlined below.

- Average daily net turnover in the New Zealand foreign exchange market was US\$ 4 billion representing 0.5 percent of the estimated net global turnover of US\$ 880 billion.
- Total gross turnover in New Zealand declined by around 19 percent between 1989 and 1992. Global turnover increased by 35 percent over the same period.
- NZ Dollar related turnover in the local market decreased by around a quarter to 44 percent of total turnover. A large part of that decrease was explained by a 48 percent decrease in spot NZ Dollar turnover.
- Non-NZ Dollar swap activity, which increased by 8 percent, was the only market segment recording growth. The fall in New Zealand turnover may have been due to a decline in the volatility of the NZ Dollar and a reduction in the number of interbank market participants.

<sup>1</sup> 'Central Bank Survey of Foreign Exchange Market Activity in April 1992', Bank for International Settlements, Basle, March 1993.

## Introduction

During April 1992, eleven New Zealand banks, representing an estimated 99 percent of the local market, participated in a survey of foreign exchange turnover. The survey was conducted as part of a global survey, involving 26 countries, which was coordinated by the Bank for International Settlements. The aim of the survey was to gauge the size and structure of foreign exchange markets from the trading activity recorded over one month.

A similar survey was conducted by the BIS in April 1989. This allowed the two sets of global data to be compared over time. Unfortunately, the 1992 survey was the first survey in which New Zealand participated. However, a rough feel for developments in the New Zealand market over the same time frame can be obtained by comparing the April 1992 survey with the less detailed foreign exchange turnover information which is supplied to the Reserve Bank on a regular basis. The main purpose of this article is to present the main results of the New Zealand survey and to compare the local market with the international market.

## Total Foreign Exchange Turnover

During April 1992, gross average daily turnover reported in New Zealand was US\$ 4.820 billion. Adjusted for the double counting of transactions between reporting banks, net turnover was US\$ 4.218 billion. Total net foreign exchange turnover exceeded goods and service trade flows across the border by a factor of around fifty.

In the international context, net turnover in New Zealand is obviously small, representing 0.5 percent of the estimated net global<sup>2</sup> turnover of US\$ 880 billion per business day. The New Zealand market ranked twenty-second out of the twenty-six country participants, comparable in size to markets in Austria, Bahrain and South Africa. Over half of the global foreign exchange activity took place in just 3 countries - the United Kingdom, United States and Japan.

Total gross turnover on a global basis increased by around 35 percent between April 1989 and April 1992. A large part of that increase is explained by a 53 percent increase in trading activity in the largest world market, the United Kingdom, which accounted for 27 percent of total global turnover. In contrast to the large growth in the world market, total gross turnover in New Zealand declined by around 19 percent between 1989 and 1992. Australia also reported a decline, with gross turnover falling by 4.1 percent over the same period.

There was an increase in concentration in the New Zealand market between 1989 and 1992 as a higher proportion of total gross turnover was transacted by fewer banks. The five largest banks accounted for around 80 percent of total turnover in 1992 compared to around 65 percent in 1989.

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<sup>2</sup> Net of local and cross-border interbank double counting.

## **Foreign Exchange Market Definitions**

### **Spot Transaction**

A 'Spot' transaction refers to the sale of one currency for another where settlement is made within two working days of the agreement to transact being entered into. A spot transaction entails a single outright (ie once and for all) exchange of currency amounts.

### **Swap Transaction**

A foreign currency swap is an agreement to exchange two currencies on one date and to reverse the transaction on a future date. A swap creates a mismatch in currency flows for a period of time without creating a net exchange in currencies. Currency swaps are equivalent to two money market transactions (borrowing in one currency and lending another) and are mainly used to manage cross currency cash flows. The swap market is often a more efficient way of borrowing or lending currency amounts than accessing the relevant currency money markets. The maturity of most swap transactions is quite short. In New Zealand, 75 percent of swap transactions have a maturity of less than seven days.

### **Outright Forward Transaction**

Outright forward transactions are similar to spot transactions in the way they involve the outright exchange of two currency amounts. The difference is in the actual timing of the exchange of currency amounts. In a spot transaction the exchange is made within 2 business days. In a forward transaction the exchange of currencies is made more than two business days in the future.

### **Currency Option**

A currency option is the right without obligation to buy or sell one currency against another at a specified price during a specified period. Options may be classified as either 'Over-The-Counter' (OTC) or 'Exchange Traded' (ET). OTC refers to options written by banks and other institutions often to meet the exact needs of the option buyer. In New Zealand, during the survey period, activity was totally in OTC options. In the global market, trade was predominantly (84 percent) in OTC options. ET refers to option contracts on specific Futures Exchanges located in the world's major financial centres. These contracts have strictly defined characteristics such as standard amounts and standard expiry dates.

## Global Foreign Exchange Market Turnover Average Daily Turnover By Country

Ranking	Country	Net <sup>3</sup> Turnover US\$Billion	% of Total	% Change in Gross Turnover Compared to 1989
1	United Kingdom	300.2	26.6	53.0
2	United States	192.3	17.0	38.3
3	Japan	126.1	11.2	8.2
4	Singapore	75.9	6.7	38.6
5	Switzerland	68.1	6.0	16.5
..	..	..	..	..
9	Australia	29.8	2.7	-4.1
..	..	..	..	..
21	Austria	4.4	0.4	N/A
22	New Zealand	4.2	0.4	-19.0
23	Bahrain	3.5	0.3	8.3
24	South Africa	3.5	0.3	N/A
	TOTAL	1,130.3	100.0	35.4

### Market Segmentation By Currency

During April 1992, the NZ Dollar was involved in 44 percent of all foreign exchange transactions (net) reported by banks in the New Zealand market. Total turnover involving the NZ Dollar, including off-shore trading, is likely to be significantly higher than reported. However, no information was reported by banks outside of New Zealand on NZ Dollar related transactions because the volume of NZ Dollar turnover was judged to be immaterial on a global basis. Total NZ Dollar turnover declined by around 25 percent between 1989 and 1992.

By contrast, turnover in New Zealand in third currencies - in particular the Deutsche Mark, Australian Dollar and the Japanese Yen against the US Dollar - declined by around 11 percent, but increased to 56 percent of the total market compared to about 50 percent in 1989.

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<sup>3</sup> Net of local interbank double counting.

## New Zealand Foreign Exchange Market Turnover Average Daily Total Market Turnover (Net) By Currency Pair

Currency Pair	Turnover US\$ Billion	%
NZ Dollar/US Dollar	1.736	41
NZ Dollar/Other	0.127	3
US Dollar/Deutsche Mark	0.849	20
US Dollar/Australian Dollar	0.666	16
US Dollar/Japanese Yen	0.416	10
US Dollar/Pound Sterling	0.252	6
US Dollar/Other	0.081	2
All Other	0.091	2
<b>TOTAL</b>	<b>4.218</b>	<b>100</b>

In the global markets, the US Dollar was the most highly traded currency, involved in over 80 percent of net turnover. The Deutsche Mark was the next highest involved in nearly 40 percent of net turnover while the Japanese Yen was third featuring in 23 percent of turnover.<sup>4</sup> The gross share of activity in the US Dollar and Japanese Yen declined by 7 percent and 3 percent respectively between 1989 and 1992, while the Deutsche Mark increased its share by 11 percent.

### Market Segmentation by Counterparty

In the New Zealand market, around 76 percent of foreign exchange transactions, were between banks, 10 percent were between banks and other financial institutions,<sup>5</sup> and 13 percent were between banks and 'customers'<sup>6</sup>. The New Zealand breakdown was similar to the global picture. The major exception was a higher-than-average ratio of transactions with overseas banks, which mainly reflects the relatively small size of the domestic market and the greater reliance on offshore markets to disperse market risk.

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<sup>4</sup> The currency shares of turnover sum to 200 per cent because each transaction involves two currencies.

<sup>5</sup> All financial institutions which did not participate in the survey including non-participating banks.

<sup>6</sup> All other institutions, organisations and individuals.

### % of Turnover Conducted With

Country	Other Banks		Other Financial Institutions	Customers	Futures and Options <sup>7</sup>
	Local	Abroad			
United Kingdom	38	43	11	6	2
United States	41	28	13	10	10
Japan	41	37	5	15	4
Australia	32	48	N/A	15	3
Austria	21	62	14	4	0
New Zealand	25	51	10	13	0
Global	34	45	7	10	4

### Market Segmentation by Transaction Type

Turnover activity in the New Zealand foreign exchange market in April 1992 was dominated by turnover in the swap and spot markets. Swap and spot turnover accounted for 48 percent and 47 percent of total turnover, respectively, while outright forward and option turnover represented 5 percent and 1 percent.

The segmentation of the New Zealand market according to transaction type was roughly in line with the global picture.

#### % of Total Net Turnover

Country	Spot	Swap	Forward	Options	Futures
United Kingdom	49.3	40.9	6.6	2.3	0.9
United States	49.2	30.5	7.1	10.1	3.1
Japan	37.8	50.0	7.4	4.7	0.0
Australia	42.1	50.8	4.0	2.5	0.6
Austria <sup>8</sup>	11.5	1.1	0.0	0.0	
New Zealand	47.0	47.7	4.5	0.8	0.0
Global	47.8	40.4	6.2	4.0	0.8

#### % Growth in Gross Turnover 1989-1992

Country	Total	Spot	Swap	Forward	Options
United Kingdom	53.0	19.8	N/A	N/A	183.2
United States	38.3	11.1	77.3	81.7	102.7
Japan	8.2	3.6	7.5	16.6	71.0
Australia	-4.1	-34.6	51.7	-27.5	47.0
Austria	N/A	N/A	N/A	N/A	
New Zealand <sup>8</sup>	-19.0	-29.0	-9.0	-21.0	N/A
Global	35.4	13.2	56.4	59.9	124.4

<sup>7</sup> Excludes OTC options traded with other banks.

<sup>8</sup> Estimates derived from turnover information supplied to the Reserve Bank daily.

(a) Spot Market Structure

The average daily turnover (net) in the New Zealand spot market was US\$1.982 billion. Spot market activity declined by around 29 percent between 1989 and 1992 with transactions involving the NZ Dollar falling by 48 percent. A decline in the spot market turnover was also recorded by other countries such as Australia (-34.6 percent), Belgium (-3.9 percent), Norway (-38.9 percent) and Bahrain (-25.0 percent). On average, however, spot market activity in the global market increased by 13 percent. Reasons for the decline, or growth in spot market activity varied from country to country. General factors likely to impact on spot market activity are: currency volatility, regulatory changes (ie exchange controls), banking system stability, growth in foreign trade and the maturity and depth of derivative markets as an alternative to the spot market.

In New Zealand's situation, the decline in the volatility of the NZ Dollar and the decline in the number of interbank market participants between April 1989 and April 1992 may have been significant factors.

The increase in concentration in the New Zealand spot market was the most marked of all the market segments. The five largest banks accounted for around 90 percent of gross spot turnover in 1992 compared to around 70 percent in 1989.

### New Zealand Foreign Exchange Market Turnover Average Daily Spot Market Turnover (Net) By Currency Pair

Currency Pair	Turnover US\$ Billion	%
NZ Dollar/US Dollar	0.439	22
NZ Dollar/Other	0.059	3
US Dollar/Deutsche Mark	0.721	36
US Dollar/Japanese Yen	0.320	16
US Dollar/Australian Dollar	0.170	9
US Dollar Pound Sterling	0.156	8
US Dollar/Other	0.027	1
All Other	0.090	5
TOTAL	1.982	100

A feature of the New Zealand spot market is the relatively small share of the NZ Dollar which was involved in 25 percent of spot turnover in New Zealand, a decline from around 38 percent in 1989. The currency pair with the highest turnover was the US Dollar/Deutsche Mark which featured in 36 percent of transactions.

The New Zealand market, with Australia, provides liquidity to the global market during the period between the close of New York and the opening of Asian markets. This niche market role contributes to the relatively high turnover in the US Dollar/Deutsche Mark reported in New Zealand.

(b) Swap Market

Net average daily turnover in the swap market in New Zealand was US\$ 2.012 billion. Swap activity in New Zealand declined by around 9 percent between 1989 and 1992 compared with the rise in global swap turnover of around 56 percent over the same period. General factors likely to impact on swap market activity are: the volume of cross-currency flows in foreign exchange (spot and forward) and capital markets, regulations and other restrictions on activity in domestic money markets, and expected and actual movements in interest rates.

**New Zealand Foreign Exchange Market Turnover  
Average daily Swap Market Turnover (Net) By Currency Pair**

<b>Currency Pair</b>	<b>Turnover US\$ Billion</b>	<b>percent</b>
NZ Dollar/US Dollar	1.156	57
NZ Dollar/Other	0.035	2
US Dollar/Australian Dollar	0.478	24
US Dollar/Deutsche Mark	0.114	6
US Dollar/Japanese Yen	0.092	5
US Dollar Pound Sterling	0.084	4
US Dollar/Other	0.052	2
<b>TOTAL</b>	<b>2.012</b>	<b>100</b>

The NZ Dollar was involved in 59 percent of swap turnover in New Zealand, a decline from around 65 percent in 1989. On a volume basis, gross swap turnover involving the NZ Dollar declined by around 16 percent between 1989 and 1992. In contrast non-NZ Dollar swap activity increased by around 8 percent.

The proportion of transactions between local banks was greater in the swap market than in the spot market, possibly reflecting the greater proportion of NZ Dollar business to total business in the swap market.

(c) Outright Forward Market

Average daily turnover (net) in the outright forward market was US\$0.191 billion.

In terms of volume, turnover in the outright forward market in New Zealand declined by around 21 percent between 1989 and 1992 compared to the 60 percent rise in global volumes. Australia reported a 27.5 percent fall in turnover.



Currency Pair	Turnover US\$ Billion	percent
NZ Dollar/US Dollar	1.117	61
NZ Dollar/Other	0.029	15
US Dollar/Australian Dollar	0.013	7
US Dollar/Deutsche Mark	0.013	7
US Dollar Pound Sterling	0.012	6
US Dollar/Japanese Yen	0.004	2
US Dollar/Other	0.003	1
TOTAL	2.011	100

The NZ Dollar was involved in 76 percent of forward market turnover in New Zealand, an increase from around 70 percent in 1989. In volume terms, however, forward NZ Dollar turnover declined by around 12 percent. Turnover in outright forwards tends to be driven more from the financial activities of customers than by interbank trading.

(d) Options Market

During April 1992, the average daily turnover (net) of foreign currency options transactions (OTC) reported in New Zealand totalled US\$0.032 billion, less than 1 percent of total reported turnover. However, the full extent of options activity in New Zealand may not have been fully represented by the survey results as some domestically based banks operate from options books based in other countries. The NZ Dollar was involved in 84 percent of options turnover in New Zealand.

Although option turnover was relatively small in proportion to total turnover, on a global basis, it was a high growth area as trading increased by 124 percent between 1989 and 1992.

