Foreign exchange market and derivatives activity

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

I Background

This article presents a 'snapshot' of the foreign exchange market and derivatives in New Zealand. The view was developed from a survey of foreign exchange and derivatives market activity conducted in New Zealand by the Reserve Bank during April 1995. Eight New Zealand banks, representing an estimated 99 percent of the local market, participated in the survey, which was designed to gauge the size and structure of the foreign exchange and derivatives markets. This is the second time that New Zealand has participated in the survey, which is now conducted every three years. The April 1995 survey also included derivatives related to local currency interest rates, in contrast to previous surveys.

The results of the survey, together with the survey results for 25 other countries, were combined to form a global picture by the Bank of International Settlements (BIS).[1] Both the global data and the New Zealand data are compared with data from a similar survey conducted in 1992.

The article is presented in two sections. First, the results of the traditional foreign exchange market activity survey are given. These encompass a look at both the national and global survey results. Secondly, the data collected on the interest rate derivative markets is briefly outlined.

II Foreign exchange market activity survey

Total foreign exchange turnover

During April 1995, gross average daily turnover reported in New Zealand was US$8.1 billion. This compares with US$4.8 billion in April 1992. Gross turnover in the foreign exchange market reported by survey participants totalled US$136.9 billion (up from $96.4 billion in the 1992 survey). Adjusted for the double counting of transactions between reporting banks, net daily turnover was US$7.2 billion (compared to US$4.2 billion in 1992).

In the international context, net turnover in New Zealand is obviously small, representing 0.6 percent of the estimated net global[2] turnover of US$1,230 billion per business day. The New Zealand market ranked twentieth out of the twenty-six country participants (twenty-second in 1992), comparable in size to markets in Austria, Norway and Finland. Over half the global foreign exchange activity took place in just three countries - the United Kingdom, United States and Japan.

The rate of growth in activity increased from 12 percent per annum over 1989-1992 to 14 percent over 1992-1995. However, the depreciation of the US dollar against the major currencies in the three years to April 1995 was more pronounced than in the preceding three year period, which raised the reported US dollar value of non-dollar transactions. If calculated at constant dollar exchange rates, the rates of growth have been fairly steady throughout the period since 1989.

On a global basis, growth between 1992 and 1995 was almost twice as large in forwards as in spot transactions. Only 43 percent of the April 1995 turnover took place in the spot market, compared with 49 percent in April 1992. Within the group of forward transactions, foreign exchange swaps continued to overshadow outright forwards, by a ratio of 6 to 1.

III 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.

1 Central Bank Survey of Foreign Exchange Market Activity in April 1995: Preliminary Global Findings', Bank for International Settlements, Basle, October 1995.

2 Net of local and cross-border interbank double counting.

Table 1

Global foreign exchange market turnover
Average daily turnover by country

Ranking	Country	Net[1] turnover US$billion	Percent of total	Percent change in gross turnover compared to 1992
1	United Kingdom	464.5	29.5	60
2	United States	244.4	15.6	46
3	Japan	161.3	10.3	34
4	Singapore	105.4	6.7	43
5	Hong Kong	90.2	5.7	50
..	..	..	..	..
9	Australia	39.5	2.5	36
..	..	..	..	..
19	Norway	7.6	0.5	46
20	New Zealand	7.2	0.5	42
21	Finland	5.3	0.3	..
22	South Africa	5.0	0.3	47
..		..	..	..
25	Bahrain	2.6	0.2	..
26	Portugal	2.4	0.2	85
	TOTAL	1,572.2	100.0	46

1 Net of local interbank double counting.

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. Currency swaps are equivalent to two money market transactions (borrowing in one currency and lending in 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.

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 two 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. ET refers to option contracts on specific futures exchanges. Although the New Zealand Futures and Options Exchange has exchange traded options, the majority of the turnover is done 'Over-The-Counter'. ET options have strictly defined characteristics such as standard amounts and standard expiry dates.

IV Market segmentation by currency

During April 1995, the NZ dollar was involved in 56 percent of all total gross foreign exchange transactions reported by banks in the New Zealand market (this compares to 50 percent in the 1992 survey). Almost all of this business is conducted against the US dollar. For reasons of market depth and liquidity most transactions involving

Table 2

New Zealand foreign exchange market turnover
Average daily total market turnover (net) by currency pair

Currency pair	Turnover US$ million		%	
	1992	**1995**	**1992**	**1995**
NZ dollar/US dollar	1,736	3,740	41	52
NZ dollar/other	127	284	3	4
US dollar/deutschemark	849	934	20	13
US dollar/Australian dollar	666	881	16	12
US dollar/Japanese yen	416	852	10	12
US dollar/pound sterling	252	239	6	3
US dollar/other	81	184	2	3
All other	91	87	2	1
TOTAL	4,218	7,201	100	100

an exchange between New Zealand dollars and other foreign currencies are actually conducted through two back-to-back transactions against the US dollar. Total turnover involving the NZ dollar, including off-shore trading, is likely to be significantly higher than reported. A number of banks in, for example, London and New York trade the NZ dollar and transactions between them, and by them with their customers, are not captured in this survey. However, the deepest market in the NZ dollar is that provided by New Zealand institutions.

In the global markets, despite the artificial boost to the dollar value of non-US dollar currency trading resulting from the US dollar's depreciation, the proportion of trading involving the US dollar increased by 1 percent between 1992 and 1995, to 83[3] percent. In contrast, deutschemark trading decreased by 3 percent to 37 percent, reversing the tendency for the deutschemark to gain market share. There was also a decline in the weight of the sterling, down to 10 percent in 1995 from 14 percent in 1992. The Japanese yen was third, featuring in 24 percent of turnover (compared to 23 percent in 1992).

V Market segmentation by counterparty

In the New Zealand market, around 21 percent of gross foreign exchange transactions were between local dealers, 65 percent were with other dealers abroad[4], and 14 percent were with others not in the above two categories[5]. The turnover was weighted more heavily with overseas banks (dealers abroad), which mainly reflects the relatively small size of the domestic market and the heavy participation in the local market by offshore investors, particularly through the swaps market. The global picture was 33 percent, 48 percent and 19 percent for the respective categories described above.

VI Market segmentation by transaction type

As in April 1992, turnover activity in the New Zealand foreign exchange market in April 1995 was dominated by turnover in the swap and spot markets. Swap and spot turnover accounted for 51 percent and 43 percent of total turnover respectively, while outright forward and options turnover represented 5 percent and 1 percent.

3 The currency shares of turnover sum to 200 percent because each transaction involves two currencies.

4 In principle, "dealers" are defined as those either in the same country (local), or in another country (abroad), who participate in the co-ordinated survey. They will be mainly commercial or investment banks and security houses, who play a role as market markers or intermediaries, and other entities who are active dealers (eg, subsidiaries of insurance companies).

5 Including "other financial institutions" (not participating in the survey) and "non-financial customers" (mainly corporates and governments).

Table 3

New Zealand foreign exchange market turnover
Average daily spot market turnover (net) by currency pair

Currency pair	Turnover US$ million		%	
	1992	1995	1992	1995
NZ dollar/US dollar	439	1,181	22	38
NZ dollar/other	59	150	3	5
US dollar/deutschemark	721	684	36	22
US dollar/Japanese yen	320	551	16	18
US dollar/Australian dollar	170	299	9	9
US dollar/pound sterling	156	118	8	4
US dollar/other	27	80	1	2
All other	90	68	5	2
TOTAL	1,982	3,131	100	100

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

(a) Spot market structure

In 1995 the average daily turnover (net) in the New Zealand spot market was US$3.1 billion. In volume terms, spot market activity increased around 58 percent between 1992 and 1995. On a global basis, spot transactions accounted for 43 percent of total turnover, down from 49 percent in the 1992 survey. Reasons for the decline, or growth in spot market activity vary. General factors likely to impact on spot market activity include 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.

A feature of the New Zealand spot market is the resurgence of the NZ dollar which was involved in 43 percent of spot turnover in New Zealand, an increase from 25 percent in 1992, and a return to levels seen back in 1989.

The deutschemark and Japanese yen, against the USD, featured in 40 percent of transactions, down from 52 percent in April 1992. The New Zealand market, with Australia, is still regarded, to some extent, as a provider of liquidity to the global market during the period between the close of New York and the opening of Asian markets.

(b) Swap market

Net average daily turnover in the swap market in New Zealand was US$3.586 billion in 1995, compared to US$ 2.012 billion in 1992. Swap activity in New Zealand contributed to 51 percent of total market turnover compared to global swap activity featuring in 48 percent of total turnover. General factors likely to impact on swap market activity include 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.

The NZ dollar was involved in 65 percent of swap turnover in New Zealand, an increase from around 59 percent in 1992. On a volume basis, gross swap turnover involving the NZ dollar increased by around 96 percent between 1992 and 1995, after a decline of around 16 percent during the 1989-1992 period. Non-NZ dollar swap activity increased by around 52 percent.

Most of the activity in the swap market is short dated. Eighty six percent of swap related transactions are for maturities up to seven days. This feature is apparent in the amounts outstanding at the end of March 1995, which showed a relatively small amount outstanding relative to turnover (around 40 percent).

Table 4

New Zealand foreign exchange market turnover
Average daily swap market turnover (net) by currency pair

Currency pair	Turnover NZ$ million		%	
	1992	1995	1992	1995
NZ dollar/US dollar	1,156	2,283	57	64
NZ dollar/other	35	52	2	1
US dollar/Australian dollar	478	545	24	15
US dollar/deutschemark	114	221	6	6
US dollar/Japanese yen	92	287	5	8
US dollar/pound sterling	84	94	4	3
US dollar/other	52	104	2	3
TOTAL	2,012	3,586	100	100

Table 5

New Zealand foreign exchange market turnover
Average daily outright forward turnover (net) by currency pair

Currency pair	Turnover NZ$ million		%	
	1992	1995	1992	1995
NZ dollar/US dollar	117	211	61	55
NZ dollar/other	29	79	15	20
US dollar/Australian dollar	13	32	7	8
US dollar/deutschemark	13	28	7	7
US dollar/Japanese yen	12	14	6	4
US dollar/pound sterling	4	12	2	3
US dollar/other	3	11	1	3
TOTAL	191	387	100	100

(c) Outright forward market

Average daily turnover (net) in the outright forward market was US$0.387 billion in April 1995, compared to US$0.191 billion in 1992.

In terms of volume, turnover in the outright forward market in New Zealand increased by around 103 percent between 1992 and 1995, after experiencing a decline of around 21 percent between 1989 and 1992.

The NZ dollar was involved in 75 percent of forward market turnover in New Zealand. In volume terms NZ dollar turnover increased by around 98 percent. Turnover in outright forwards tends to be driven more from the financial activities of corporate customers than by interbank trading.

(d) Options market

During April 1995, the average daily turnover (net) of foreign currency options transactions (OTC) reported in

New Zealand totalled US$0.077 billion which compares to US$0.032 billion in 1992. In both cases turnover amounts to 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 there are some offshore banks that provide NZ dollar option related products. The NZ dollar was involved in 72 percent of options turnover in New Zealand in 1995, down from 84 percent in 1992.

Although option turnover was relatively small in proportion to total turnover, on a global basis, it continues to be a high growth area.

VII Interest rate derivative activity survey

Single-currency interest rate derivatives turnover

During April 1995, gross average daily turnover reported in New Zealand was US$1.021 billion. Gross turnover in the interest rate market reported by survey participants totalled US$17.353 billion. Adjusted for double counting of transactions between reporting banks, net daily turnover was US$0.942 billion.

In the international context, net NZ turnover represented 0.62 percent of the estimated global turnover of US$151 billion per business day. The turnover figures, which were collected on a trade location basis, indicate that London was the principal centre. Taking all centres together, cross-border deals accounted for about two-thirds of all transactions.

VIII Interest rate market definitions

Forward Rate Agreement (FRA)

A forward rate agreement is an interest rate forward contract in which the rate to be paid or received on a specific obligation for a set period of time, beginning at some time in the future, is determined at contract initiation.

Interest rate swap

An interest rate swap is an agreement to exchange periodic payments related to the interest rates on a single currency. It could be fixed for floating, or floating for floating based on different indices. This group includes those swaps whose notional principal is amortised according to a fixed schedule independent of interest rates.

Interest rate option

An interest rate option is the right without obligation to pay or receive an interest rate 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. 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.

IX Daily turnover by instrument types

Globally, in terms of instrument types, FRAs and interest rate swaps accounted for roughly equal shares (44 and 42 percent respectively) and interest rate options for some 14 percent. As indicated opposite, turnover in New Zealand market was dominated by interest rate futures, accounting for some 78 percent of total turnover. Most of these transactions are in the 90 day bank bill futures: there is almost no business done in the bond futures contracts offered by the New Zealand Futures and Options Exchange.

Table 6

New Zealand interest rate market turnover
Average daily turnover (net) by instrument types

Instrument type	Turnover NZ$ million	%
Forward rate agreements	81	9
Swaps	40	4
Futures	739	78
ET options	46	5
OTC options	36	4
TOTAL	942	100