

# RESERVE ASSETS RATIO SYSTEM

## INTRODUCTION

Recently, two changes to the reserve assets ratio scheme affecting trading banks have been implemented. One of the changes, the movement to a single ratio for both time and demand deposits, is a simplification with few economic consequences. The other change involved the penal borrowing arrangements and is of a more fundamental nature. This article outlines these changes and the reasons behind them.<sup>1</sup>

### I. The Single Ratio

The reserve assets ratio system is designed to exert some degree of control over the operations of trading banks. It does this by varying the ratio of reserves to deposits that each bank is required to keep. Reserves are defined as government securities, bank notes, and deposits held at the Reserve Bank.

Up until August 1980, two separate ratios were used, one for demand deposits, and one for time deposits. For example, in January 1980 each trading bank was required to hold as reserve assets an amount equal to 38 percent of its demand deposits and 22.5 percent of its time deposits. The deposit levels used are the average of the weekly deposit figures for the previous calendar month. These averages were \$1,729.2 million for demand deposits and \$3,328.4 million for time deposits in December 1979 and, given the above ratios, the average reserve asset requirement for January 1980 was \$1,406.0 million, for the banking system as a whole. A regular table in the *Bulletin* shows reserve asset ratios and required holdings over the last two years.

The rationale behind the dual ratios was basically twofold:

- (a) it was felt that the two types of deposits behave differently in that time deposits are generally more stable than demand deposits. Consequently it was considered that in principle the ratios on demand deposits should be set at a higher level than those on time deposits reflecting the greater risk to trading banks of unexpected calls on their cash reserves;
- (b) trading banks were encouraged to compete for time deposits, since an increase in time deposits at the expense of demand deposits would help reduce liquidity in the hands of the public.

In 1973, when the reserve asset ratio system was introduced the trading banks operated under interest rate restrictions common to most financial institutions, which meant that competition for deposits was mainly by way of improved services and advertising rather than variation of interest rates. Having a lower ratio attached to time deposits (a lower ratio allowing a greater proportion of the bank's assets to be allocated to higher earning lending activity) was felt to be an incentive for banks to attempt to attract time deposits.

However interest rate controls were removed in March 1976, allowing trading banks to compete for time deposits by offering more attractive interest rates. Trading banks increased their time deposit liabilities from \$599.5 million to \$3,229.1 million, an increase of nearly 440 percent from March 1973 to March 1980 compared to the increase in demand deposits from \$922.4 million to \$1,656.1 million, an increase of only 80 percent. Time deposits now account for about 65 percent of total trading bank deposits.

The increase in the proportion of time to demand deposits, together with increased interest rate competition and an increased willingness of banks to break time deposits, has significantly reduced the importance of a higher ratio on demand deposits as a safeguard for banks. Total reserves are clearly adequate to meet depositors requirements.

The rationale for a dual ratio system has now largely disappeared. A single ratio was therefore introduced as from August this year as a simplification. It might also be noted that no other group of financial institutions has dual ratios imposed on it.

### II. The Penal Borrowing Arrangements

The reserve asset ratios define the level of required reserve asset holdings each month. The actual monthly requirement is set before the month begins to give the banks adequate notice. The requirement is based on forecasts of reserve asset movements, and is therefore subject to a degree of uncertainty. In establishing the requirement the Reserve Bank allows for the uncertainties by working on a margin of 'free' reserves, i.e. by setting reserve requirements lower than the reserve level which is forecast for the month. This free reserve margin is raised or lowered from time to time as a policy measure to ease or increase policy pressure on banks' operations respectively.

Because of the uncertainties inherent in banking, trading banks generally want to maintain a buffer of reserves between their required reserve asset holdings and their actual holdings. If the buffer is small (i.e. the level of free reserves are low), then the greater is the likelihood that unforeseen demands on trading banks' reserves will reduce their reserve asset holdings below the required level. This might happen if, for example, payments for imports were greater than expected, since to pay for the foreign exchange that banks purchase from the Reserve Bank, they must run down their deposits at the Reserve Bank and/or sell government securities to the Reserve Bank. In either case, there is a loss of reserve assets.

In the event of a shortfall in required reserve asset holdings, the trading banks with deficits are required to borrow money from the Reserve Bank at a penal rate of interest and deposit the funds so obtained in non-interest bearing deposits at the Reserve Bank.<sup>2</sup>

1. For a full description of reserve asset ratio policy in New Zealand, see *Monetary Policy and the New Zealand Financial System*, R. S. Deane and P. W. E. Nicholl (eds.), Reserve Bank of New Zealand, 1979, especially chapter 16.

2. If an individual bank was in danger of falling short of its requirement in the circumstances where the system as a whole would meet the requirement, the 'deficit' bank could meet its requirement by borrowing inter-bank.

The penal nature of these borrowings is to encourage the banks to change their operational policies to conserve reserve assets when policy is tight, for example by decreasing their lending growth. By reducing the allowance of free reserves used in setting monthly ratios, it is possible to place the banks in a situation of greater risk of having to borrow from the Reserve Bank in order to fulfil their reserve asset requirements. Conversely, when monetary policy is neutral or more relaxed, the free reserves margin is higher, reducing the risk of penal borrowing and making the banks more willing to expand private sector lending.

During the early years of the operation of the reserve assets ratio system, conditions were such that the effectiveness of the system as a method of control over trading bank behaviour was not really tested. However, more recently the authorities have on occasions sought to exert strong pressure on the banking system to reduce its rate of growth of lending to the private sector. Consequently the level of free reserves used in setting the ratios has been reduced to low levels (\$50 million, and for a period in 1979 the target level was zero).

It became apparent that on those occasions when the banking system was in danger of falling short of the required reserve asset holdings in a particular month the banks preferred to seek alternative sources of reserve assets rather than borrow from the Reserve Bank. The alternative source was often the purchase of government securities (a reserve asset) from a member of the public or a non-bank institution, in exchange for a bank deposit of some form, usually a Transferable Certificate of Deposit. The consequent increase in demand for the government securities pushed their prices up, increasing the TCD and large deposit interest rates, thus creating an upward pressure on deposit interest rates. While this was appropriate and desirable when the aim of policy was to tighten monetary conditions, the upward pressure was sometimes intense and short-lived. Such short-term fluctuations in interest rates are not desirable as they create uncertainty in financial markets.

Obviously this source of reserve assets (private sector holdings of government securities) was not a cost-free one: the trading banks would have been paying an interest rate on their TCDs higher than they would have earned on the government securities, resulting in a net interest cost of a few percentage points. However, this source of reserve assets involved a considerable cost-saving compared with the alternative source, borrowing from the Reserve Bank. The net cost of such borrowings, because of the requirement that the borrowings be deposited in non-interest bearing deposits at the Reserve Bank, amounted to 13 percent (given a 13 percent penal borrowing rate). For short periods banks were therefore prepared to compete very hard for deposits and this had a destabilising influence on financial markets.

Largely for these reasons, the penal borrowing system has been altered. The new system should allow the authorities to operate the reserve asset ratio system

more effectively by initially reducing, but making progressive, the economic costs previously associated with a reserve asset deficiency.

In the new system introduced in July 1980 there are two major changes, and some less significant ones:

- (a) First, the trading banks will be able to redeposit borrowings resulting from a reserve asset shortfall in special interest bearing accounts at the Reserve Bank. The rate of interest earned on such deposits will be set so that the net cost of borrowing from the Reserve Bank is related to the net cost of acquiring reserve assets from the private sector. This should make it less costly for the banks to borrow from the Reserve Bank, thus reducing the occasional intense pressure on market interest rates that the previous borrowing conditions entailed.
- (b) Secondly, the penalty element (the borrowing rate less the special deposit rate) will be graduated according to the level of borrowing, by reducing the special deposit interest rate as borrowing increases (proceeds of each additional 'tranche' of borrowing — each tranche being the equivalent of 1 percent of average deposits for each bank — over and above the first will earn 1 percent less than proceeds of the preceding tranche). This means that successive borrowing requirements are more costly.
- (c) In accordance with the new system, the Reserve Bank lending rate was raised slightly to 14 percent, in line with general increases in interest rates over the preceding few months. (This rate had been at 13 percent since the end of January 1979.) The special deposit rate has been initially set at 7 percent for the first borrowing tranche.
- (d) Finally, an administrative change has been made in the timing of borrowing arrangements. Previously banks had to borrow in order to make up a reserve asset shortfall in the month of the shortfall plus the first ten working days of the following month (to prevent a possible excessive borrowing requirement on the last day of the month of the shortfall). Under the new system banks will be able to borrow in the subsequent month only but will be able to borrow throughout that month. This has the advantage of being administratively simple, and allows the banks to know their borrowing requirements before they have to borrow.

## CONCLUSION

The reserve assets ratio system is an important component in implementing government's monetary policy. The changes in the system outlined above should make it, firstly, easier to administer and, secondly, more effective in achieving the aim of influencing the behaviour of trading banks in a more stable and consistent manner.

**RESERVE BANK OF NEW ZEALAND**  
**Liabilities and Assets**

(NZ\$ millions)

Year and Month	LIABILITIES							ASSETS								
	DEMAND DEPOSITS				O'SEAS ASSETS <sup>4</sup>			ADVANCES IN N.Z.					All Other Assets in N.Z.			
	Note Issue	State	Marketing Organs	<sup>1</sup> Banks	Other	All Other L'abilities <sup>2</sup>	Gold	SDRs.	<sup>3</sup> Short Term	Investments	Investments in N.Z.	State		Marketing Organs	Other Advan. & Disc.	Export Credits
Weekly Average																
1967 <sup>4</sup>	163.8	34.7	3.0	39.1	106.7	46.2	0.4	...	71.1	16.1	70.7	84.0	113.8	25.9	...	11.5
1968 <sup>4</sup>	162.1	51.1	5.0	35.4	102.6	48.4	0.7	...	108.6	24.2	61.5	45.4	139.1	7.6	...	17.5
1969	173.9	74.2	4.5	36.3	60.2	40.8	1.0	...	72.0	44.9	69.2	13.2	150.8	24.0	...	14.8
1970	182.9	74.1	4.1	44.7	36.9	59.9	0.8	16.4	57.5	51.5	74.7	7.4	148.3	28.8	0.9	16.3
1971	201.8	80.1	3.4	32.3	15.9	76.4	0.7	20.6	86.2	60.3	65.3	5.7	135.9	11.7	7.4	16.1
1972	223.9	195.8	3.6	38.0	18.8	124.6	0.7	49.7	193.4	121.3	39.6	0.2	156.0	2.0	9.5	32.4
1973 <sup>4</sup>	262.3	276.4	17.9	31.5	63.8	308.9	0.7	52.0	240.1	315.0	82.8	0.2	205.6	3.4	9.2	51.8
1974 <sup>4</sup>	305.8	154.7	21.1	25.0	165.1	328.8	0.7	27.7	72.4	258.4	256.2	54.8	248.1	9.1	10.8	62.3
1975 <sup>4</sup>	343.5	136.3	16.8	26.6	350.3	309.4	0.7	3.0	108.1	139.9	322.0	164.8	340.1	19.7	18.7	66.0
1976 <sup>4</sup>	382.8	145.0	22.4	12.4	466.7	357.5	0.7	9.9	178.8	53.4	583.3	93.9	369.6	13.8	22.7	60.7
1977	414.9	164.9	33.4	11.4	538.1	455.6	0.7	25.8	166.7	55.7	796.9	113.3	377.1	6.2	28.2	47.8
1978 <sup>4</sup>	447.4	198.7	13.8	4.6	507.1	509.0	0.7	51.2	242.9	53.3	496.8	256.5	426.8	94.9	28.5	47.1
1979	492.5	219.6	46.7	2.4	438.3	576.4	0.7	38.3	213.4	9.3	668.4	129.5	525.3	87.9	34.0	68.1
As At —																
1978																
Mar. 29	438.6	650.8	9.3	27.6	518.5	513.3	0.7	48.0	430.0	58.0	475.6	67.4	473.1	510.9	27.9	66.6
Apr. 26	435.9	166.2	9.9	0.1	512.5	675.0	0.7	48.3	440.9	57.7	344.3	71.3	471.1	293.2	28.6	43.3
May 31	429.4	109.7	8.3	--	499.3	606.5	0.7	54.7	378.0	57.8	464.9	165.6	440.4	25.2	30.3	35.5
June 28	432.9	163.0	10.3	11.3	494.0	516.5	0.7	54.7	352.0	57.9	466.5	158.7	462.7	7.8	29.0	38.1
July 26	428.4	147.7	8.6	--	483.7	506.9	0.7	54.5	341.0	52.8	413.3	226.7	416.5	5.6	29.3	34.9
Aug. 30	437.3	131.2	13.2	1.7	458.4	494.9	0.7	46.8	234.0	51.9	440.6	318.3	370.9	6.9	28.6	38.0
Sept. 27	442.7	132.4	14.5	0.3	471.7	503.3	0.7	62.8	147.3	52.3	519.6	221.4	365.5	119.5	27.7	48.3
Oct. 25	468.0	123.8	9.1	--	495.4	509.6	0.7	62.8	146.0	52.4	548.1	257.4	387.2	73.6	28.6	49.3
Nov. 29	467.3	150.0	8.4	--	532.8	511.2	0.7	55.5	80.0	52.6	609.7	327.6	445.0	15.1	30.0	55.5
Dec. 27	619.4	245.9	10.6	--	562.5	534.0	0.7	56.2	98.5	19.2	472.1	515.7	519.1	195.3	28.3	67.3
1979																
Jan. 31	477.0	184.2	9.2	--	512.8	559.9	0.7	71.5	296.4	8.3	650.7	49.9	544.0	12.8	29.5	79.3
Feb. 28	475.9	177.7	9.7	--	414.5	552.6	0.7	48.5	184.6	9.2	538.6	159.0	570.6	13.7	28.3	77.2
Mar. 28	477.4	482.0	8.7	--	411.5	561.4	0.7	48.5	222.8	8.9	561.1	17.8	570.0	411.0	28.8	71.3
Apr. 24	492.2	317.8	19.9	--	429.5	566.6	0.7	48.4	252.8	8.9	434.5	102.8	570.3	258.7	30.0	119.1
May 30	480.9	393.5	40.1	0.2	418.8	551.0	0.7	39.8	295.4	8.9	848.4	0.3	579.8	18.7	30.6	61.8
June 27	481.8	167.4	52.8	--	414.7	554.7	0.7	39.8	167.8	8.9	776.5	17.7	549.3	9.0	33.6	68.1
July 25	475.1	193.9	58.8	--	405.2	596.5	0.7	41.9	171.5	9.4	684.3	180.2	526.6	8.6	36.2	70.4
Aug. 29	481.7	175.3	67.0	--	351.0	585.5	0.7	19.0	189.0	9.3	732.2	160.6	459.5	8.6	38.2	43.5
Sept. 26	486.6	176.4	68.4	--	356.1	577.2	0.7	19.0	142.1	9.4	606.6	177.7	467.3	154.9	38.5	48.5
Oct. 31	494.7	110.1	77.5	--	634.1	610.0	0.7	19.4	202.9	9.4	828.4	170.7	495.0	86.9	38.4	74.5
Nov. 28	504.1	133.1	84.8	--	436.5	616.2	0.7	19.4	244.9	9.4	737.0	102.4	535.7	19.5	40.2	65.5
Dec. 26	657.8	196.4	82.1	--	446.0	635.3	0.7	13.1	161.1	9.7	671.9	362.7	635.1	0.6	39.6	123.3
1980																
Jan. 30	514.2	140.6	82.0	--	371.0	662.6	0.7	45.5	131.1	9.6	766.8	28.3	635.1	9.3	37.6	110.2
Feb. 27	514.8	149.1	85.5	0.1	351.7	760.2	0.7	39.1	253.6	9.7	649.5	93.6	650.7	8.7	37.1	118.7
Mar. 26	513.8	629.8	90.8	--	361.5	755.2	0.7	39.2	302.2	9.5	573.9	--	652.7	644.8	38.0	90.2
Apr. 30	523.3	333.4	90.9	--	333.8	804.6	0.7	37.4	176.5	9.7	762.7	5.5	676.8	321.0	43.6	52.3
May 28	522.7	226.1	69.0	--	302.7	718.9	0.7	31.8	143.3	9.7	756.2	33.5	723.0	39.8	48.1	53.3
June 25	513.8	229.1	65.0	--	386.3	721.6	0.7	23.9	67.2	9.4	493.7	486.2	725.1	1.3	49.9	58.2

<sup>1</sup> Includes balances in special fund accounts and wool retention accounts.<sup>2</sup> Includes capital accounts, reserves, miscellaneous liabilities in New Zealand, overseas liabilities, Special Drawing Rights and trading bank time deposits at Reserve Bank.<sup>3</sup> Current account balances and short-term bills.<sup>4</sup> The New Zealand dollar was devalued by 19.45 percent on 21 November 1967 and revalued by 3.25 percent on 9 July 1973. Since that date adjustments to the value of the New Zealand dollar against the basket of overseas currencies have been as follows. — 10th September 1973, revaluation of 10 percent, 25th September 1974, devaluation of 6.2 percent; 10th August 1975, devaluation of 15 percent, 30th November 1976, devaluation of 2.73 percent, 20th December 1976, revaluation of 2 percent; 21st June 1979, devaluation of 5 percent.