

THE EFFECT OF OVERSEAS EXCHANGE TRANSACTIONS ON DOMESTIC MONETARY CONDITIONS

INTRODUCTION

New Zealand has a very large volume of economic transactions with the rest of world each year encompassing the sale and purchase of goods, the provision or use of services, and the borrowing or lending of capital funds. These transactions typically involve for the New Zealand party to the transaction the buying or selling of foreign currency as the New Zealand dollar is seldom used as a means of settling transactions between New Zealand and the rest of the world. Most transactions with the rest of the world therefore affect domestic monetary conditions when the transfer takes place to or from New Zealand dollars to Australian dollars or pounds sterling, or whatever foreign currency is involved.

This article first sets out a basic framework with which the effects of overseas exchange flows on New Zealand monetary conditions can be described. A series of simplified examples are then used to illustrate the impact that various types of overseas transactions can have on domestic monetary conditions.

BASIC FRAMEWORK

The basic channels through which overseas exchange transactions affect the domestic monetary system are described by way of an illustrative example. Only 'first round' effects are considered. There will be subsequent reactions by the public, private and financial sectors to the effects of foreign exchange inflows and outflows on liquidity, interest rates, etc. These 'second round' effects are beyond the scope of the examples used in the article.

The following simplifications are initially made (though some will be relaxed later in some of the examples). For convenience, the simplifications are in terms of inflows of foreign exchange; outflows of course, have the reverse effects:

- (i) any external payment received by a New Zealand resident is promptly converted into New Zealand currency by selling it to a trading bank (i.e. the New Zealand private non-bank sector does not hold (or increase its holdings of) foreign currency assets;
- (ii) inflows received by the private sector are held as 'bank'¹ deposits and are not used to reduce an existing bank overdraft;
- (iii) inflows received by the public sector result in its borrowing less domestically (probably from the Reserve Bank, which is the government's residual financier in the New Zealand financial system);
- (iv) trading banks act simply as middlemen and any foreign currency they buy is immediately on-sold to the Reserve Bank (i.e. the trading banks do not invest in foreign currency assets other than holding working balances overseas).

- (v) The country operates a fixed exchange rate system. Under fixed exchange rates, the authorities peg the exchange rate by offering, in effect, to buy or sell New Zealand dollars in unlimited amounts (by using the official reserves) at a predetermined rate. Each foreign exchange transaction therefore ends up causing a corresponding change in the reserves in these examples. In practice, inflows and outflows largely cancel out leaving only the balance to be financed by the authorities.

The example takes the case of a New Zealand exporter receiving payment from an overseas customer. The customer will, we assume, make payment in sterling drawn from his UK bank account. The New Zealand exporter's bank, on receipt of the sterling, credits the exporter's account for its equivalent value in New Zealand dollars. It then sells the sterling to the Reserve Bank. This increases the trading bank's reserve assets. Initially the increase would be in the trading bank's current account at the Reserve Bank. As this current account earns no interest and banks endeavour to be fully invested at all times, it is assumed in this example that the bank immediately invests the proceeds in a Treasury bill. This alters the form in which reserve assets are held, but does not change the level. The transaction has the effect in the Reserve Bank's books of transferring the deposit liability from the trading bank to the government as the proceeds of the sale of the Treasury bill are placed in the Public Account.

Assuming that the value of the transaction was £50 and the exchange rate is fixed at £1 = NZ\$2, the effects of this transaction on the New Zealand banking system and the overseas exchange transactions statistics (given our simplifying assumptions) are:

Financial System	Liabilities	Assets
<i>Trading banks:</i>		
1. Private sector deposits	+ 100	
2. Treasury bill holdings		+ 100
<i>Reserve Bank:</i>		
3. Overseas assets		+ 100
4. Public account balance	+ 100	
<i>Overseas Exchange Transactions:</i>		
5. Current account exports	+ 100	
6. Capital account	no change	
7. Change in reserves	+ 100	

Item 1 (private sector bank deposits) is the major category in the money supply in New Zealand so that the overseas export receipt has led to an increase in the domestic money supply. Item 2 (banks' holdings of Treasury bills) is part of the reserve assets of a New Zealand trading bank so that the overseas export receipt has also led to an increase in the banking system's reserve assets. Item 3 (Reserve Bank overseas assets) is a major part of the country's official overseas reserves and the export receipt has also led to an increase in these reserves.

1. In this article the 'banking system' is used as a description of all the institutions included in the Reserve Bank's 'Money Supply and Selected Liquid Assets' (M3) series.

Domestic Credit Expansion

Changes in M3 can also be accounted for as the sum of domestic credit expansion (D.C.E.), the external effect as measured by the change in the net overseas assets of the banking system (including the Reserve Bank but excluding Treasury-held overseas assets and liabilities) and a residual consisting primarily of the change in the net non-deposit liabilities of the M3 institutions. This is what is done in the counterpart table to the M3 statistics published regularly in the *Bulletin* as 'Claims of Monetary Institutions by Sector'.

It is this framework that will be used in the examples below. Assuming that the residual element remains unaltered (and it is relatively stable over time), any change in M3 can be subdivided into:

- a domestic influence (D.C.E.); and
- an external influence.

Recasting the above example in this form gives:

	<i>Effects on Monetary Conditions</i>
<i>D.C.E.:</i>	
Trading banks' claims on Government (reserve assets)	+ 100
Reserve Bank: claims on Government	- 100
	0
<i>External</i>	
Reserve Bank net overseas assets	+ 100
<i>Change in M3:</i>	+ 100

In the examples at the end of the article, the impact of various transactions on the overseas exchange transaction (O.E.T.) statistics will also be set out. For the above illustrative example this impact is:

	<i>Impact on O.E.T. Accounts</i>
<i>Current Account</i>	
Exports	+ 100
<i>Capital Account</i>	No effect
<i>Change in reserves:</i>	+ 100

Using the framework set out above, the effect on M3 and the banking system's reserves of a number of illustrative external transactions is shown in the accompanying table. The same assumptions as in the initial example apply unless a specific change to an assumption is made (e.g. in example 2). The first example is the illustrative one used above.

The examples illustrate a number of points:

- (a) A private capital inflow also has the same effect on trading bank reserves and official overseas reserves as an export receipt (compare examples 1 and 2). While the immediate effect of an export receipt and a private capital inflow are the same, the private capital inflow usually has a future liability of some sort attached to it which will require an outflow of foreign exchange in due course.

- (b) The impact on domestic monetary conditions differs depending on whether the New Zealand party to an international transaction is the Government or someone in the private sector. (Compare examples 5 and 6.) The different monetary consequences arise because the Government banks with the Reserve Bank. The impact on the O.E.T. accounts are the same however (except for classification differences), as is the effect on the country's foreign exchange reserves.
- (c) A comparison of examples 1 and 2 shows that a private sector inflow of foreign exchange can either increase M3 or reduce D.C.E. depending on whether the funds are used to increase an asset (a bank deposit) or reduce a liability (a bank loan).
- (d) With the definition of the banking system used in the M3 statistical series, the Government component of domestic credit is affected by overseas borrowing. Official borrowing (or investment) carried out by Treasury to finance a private sector O.E.T. deficit has the statistical effect of reducing D.C.E. granted to the Government. In New Zealand, official overseas capital transactions are split between the Reserve Bank and the Treasury. For the purposes of these statistics, the Treasury is not treated as part of the 'banking system' whereas the Reserve Bank is. The statistical effect on this distinction can be seen in the differential effects on D.C.E. in examples 8 and 9. This statistical effect on D.C.E. does not carry over to M3. Any alteration to the Government domestic credit figure arising from overseas financing is offset by an opposite alteration in the net overseas position of the banking system, i.e. the external impact on M3 cancels out the domestic impact. This can be seen by comparing again examples 8 and 9.

EXCHANGE RATES

The examples assumed the country operated a fixed exchange rate system. Under a floating exchange rate system, the authorities would allow the exchange rate to find its own level. In the initial example, either the exporter or the trading bank (if they purchased the foreign exchange from the exporter) would sell the foreign exchange on the market.

If assumptions 1 and 4 from above are retained (i.e. neither the exporter nor the bank hold the foreign currency) and the authorities are not using the reserves to support the exchange rate, the foreign currency must be sold bank to a non-resident. The exchange rate would move so as to ensure that this occurred.

The current New Zealand exchange rate system is not a fixed rate system in the generally understood sense. It is a system of managed flexibility i.e. the rate is adjusted in a flexible manner on the basis of supply and demand conditions and other relevant factors. But the authorities specify a rate and even though this rate is varied quite frequently (by small amounts each time), at any point of time the authorities stand prepared to buy or sell any amount of foreign exchange required or offered at the going rate. The mechanics of the 'first round' effects between overseas currency flows and the New Zealand domestic financial system have not been altered, therefore, by the switch from a fixed rate system to one of 'managed flexibility'. These mechanics are as set out in the examples based on a fixed exchange rate system.

FOREIGN CURRENCY TRANSACTIONS

While most external transactions between New Zealand residents and the rest of the world, end up with the 'New Zealanders' part of the transaction settled in New Zealand dollars, there can be exceptions. For example, an individual resident in New Zealand may receive dividends on Australian shares he owns, and reinvest them with an Australian trading bank. Such a transaction would have no impact on the New Zealand banking system, or on the overseas exchange transactions statistics. An example that effects the latter but not the former could be a New Zealand trading company receiving insurance proceeds from an overseas insurance company for damaged plant and using the proceeds to replace the plant from overseas without repatriating the funds. While this transaction would have no direct effect on the New Zealand banking system, in the overseas exchange transactions statistics it would appear twice (if it was known) as a private capital inflow (the insurance proceeds) and as an import of goods (the purchase of plant) — thus having no effect on the level of reserves.

The Government may also enter into external transactions that have no effect on the domestic private sector banking system. The most common example would be the Government borrowing foreign currency from abroad in order to boost Treasury-held overseas reserves. (See example 7). Such borrowing does not affect the private sector balance of payments on either

current or capital account. The domestic money supply and banking system's reserves are unaffected also.

CONCLUSION

The framework described in this article can be used to show the effects of various external transactions on domestic monetary conditions. It can be seen that these effects depend on who is carrying out the transaction, the private or the public sector, and can be influenced by the way a current account item is financed.

There are some important limitations to the approach used in the article. First, the statistical relationships do not say very much about cause and effect. Second, the approach is a static one and measures 'first round' balance sheet effects only. Other consequences will follow from external transactions. For example, in the first example in the table (export receipts) the level of financial assets held by the private sector has risen. This will probably affect expenditure. The level of bank reserves has also risen, which will probably affect banks' willingness to lend. There will also probably be interest rate effects (in this case, downward pressure on interest rates is likely) which in turn may affect demand for bank lending etc. These second round effects of an external transaction are complex and cannot be captured in a simple statistical framework. Following such paths takes one into the realm of the model-builders.

Transaction	Effects on Monetary Conditions	Changes in OET Accounts
1. Export of goods by the private sector (worth NZ\$100 for immediate payment)	<i>D.C.E.:</i>	<i>Current Account:</i>
	Trading banks: claims on Government (reserve assets) + 100	Exports + 100
	Reserve Bank: claims on Government ¹ - 100	<i>Capital Account:</i> No effect
	0	<i>Reserves:</i> + 100
	<i>External:</i>	
	Reserve Bank net overseas assets + 100	
	<i>Change in M3:</i> + 100	
2. The same transaction as 1, but the exporter reduces his bank overdraft with the proceeds	<i>D.C.E.:</i>	As for 1.
	Trading bank private sector lending - 100	
	Trading bank claims on Government (reserve assets) + 100	
	Reserve Bank claims on Government - 100	
	- 100	
	<i>External:</i>	
	Reserve Bank net overseas assets + 100	
	<i>Change in M3:</i> 0	
3. The same transaction as 1, but the exporter sells on deferred payment and borrows from a New Zealand bank to finance the period until the payment is received	<i>D.C.E.:</i>	No effect until proceeds received ²
	Trading bank private sector lending + 100	
	+ 100	
	<i>External:</i> No effect	
	<i>Change in M3:</i> + 100	
4. The same transaction as 3, but the trading bank finances the deferred payment by way of an export bill	<i>D.C.E.:</i> No effect	<i>Current Account:</i>
	<i>External:</i>	Exports + 100
	Trading banks' overseas assets + 100	<i>Capital Account:</i> No effect
	+ 100	<i>Reserves:</i> ³ + 100
	<i>Change in M3:</i> + 100	
5. Import of goods (worth NZ\$100) by the private sector for immediate payment	<i>D.C.E.:</i>	<i>Current Account:</i>
	Trading bank claims on Government ⁴ - 100	Imports (increase —) - 100
	Reserve Bank claims on Government ⁴ + 100	<i>Capital Account:</i> No effect
	0	<i>Reserves:</i> - 100
	<i>External:</i>	
	Reserve Bank net overseas assets - 100	
	<i>Change in M3:</i> - 100	
6. The same transaction as 5, but the importer is the Government, i.e. banks with the Reserve Bank	<i>D.C.E.:</i>	As for 5.
	Reserve Bank claims on Government ¹ + 100	
	<i>External:</i>	
	Reserve Bank net overseas assets - 100	
	- 100	
	<i>Change in M3:</i> 0	

7. Government borrows NZ\$100 on a foreign bond market and increases Treasury-held overseas reserves	<i>D.C.E.:</i>	No change	<i>Current Account:</i>	No effect
	<i>External:</i>	No change	<i>Capital Account:</i>	
			Public sector borrowing	+ 100
			Reserves:	+ 100
	<i>Change in M3:</i>	0		
8. The same transaction as 7, but Treasury sells the foreign currency proceeds to the Reserve Bank	<i>D.C.E.:</i>		As for 7.	
	Reserve Bank claims on Government ¹	- 100		
		- 100		
	<i>External:</i>			
	Reserve Bank net overseas assets	+ 100		
	<i>Change in M3:</i>	0		
9. Reserve Bank borrows NZ\$100 from the I.M.F. and increases Bank-held overseas reserves	<i>D.C.E.:</i>	No effect	As for 7.	
	<i>External:</i>			
	Reserve Bank net overseas assets	No change		
		0		
	<i>Change in M3:</i>	0		
10. A New Zealand trading company borrows overseas and repatriates the proceeds through the banking system	<i>D.C.E.:</i>		<i>Current Account:</i>	No effect
	Trading bank claims on Government (reserve assets)	+ 100	<i>Capital Account:</i>	
	Reserve Bank claims on Government ¹	- 100	Private sector receipts	+ 100
		0		
	<i>External:</i>			
	Reserve Bank net overseas assets	+ 100		
		+ 100		
	<i>Change in M3:</i>	+ 100		
11. A New Zealand finance company borrows overseas and repatriates the proceeds through the banking system	<i>D.C.E.:</i>	As for 9	As for 9.	
	<i>External:</i>			
	Reserve Bank net overseas assets	+ 100		
	Finance company net overseas assets	- 100		
		0		
	<i>Change in M3:</i> ⁵	0		

1. Net lending by the Reserve Bank to the Government equals advances by the Bank to the State plus investment by the Bank in Government securities less credit balances in the Public Account. With this treatment, the effect on D.C.E. is the same whether the State increases an overdraft or reduces a deposit with the Reserve Bank.

2. In the balance of payments accounts (i.e. those prepared by the Department of Statistics on a physical flow basis) exports would increase by \$100 with the balancing entry being a private capital outflow.

3. Trading banks' holdings of net overseas assets are counted as part of New Zealand's official overseas reserves.

4. The chain of transactions is the reverse of those assumed in the initial example. In effect, the trading bank buys the foreign exchange from the Reserve Bank (and on-sells it to the importer) by selling a Treasury bill to the Reserve Bank.

5. While the level of trading bank deposits will have increased, the increased deposit is held by another financial institution (the finance company) and such inter-institution deposits are netted out of M3.