AN INTRODUCTION TO

THE OPTIMUM EXCHANGE RATE SYSTEM

by Leigh Harkness

Prepared for the Economics Society of Australia
24th Conference of Economists
Adelaide, South Australia
24-27 September 1995

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Abstract

The optimum exchange rate system is made up of two parts:

.	a foreign reserve based banking system that ties bank lending to each bank's net holdings of foreign reserves; and

.	incentives for the banks to set the exchange rate at a level that will achieve desired economic objectives.

The first part of the system regulates bank lending to avoid any excessive demand from this source that may cause national demand to exceed supply. It ensures balance of payments stability regardless of the exchange rate.

The second part uses a system of management by objectives to set the exchange rate at levels that would achieve desirable objectives such as full employment with low inflation.

The system has market determined variable exchange rates and allows international transactions to impinge on the money supply. This makes it inherently different from both the fixed and floating exchange rate systems. In addition to full employment and balance of payment stability, it is expected to provide more stable exchange rates than the floating exchange rate system, provide lower interest rates and allow national income to rise more rapidly.

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September 1995

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1. Introduction

This is the third paper in a series of three. The first paper considered how the growth of bank credit raised national expenditure above national income and caused current account deficits. It noted that when exports increased the money supply, this increase did not cause current account deficits. Also, it explained why interest rate policy has been ineffective and how it has increased current account deficits and raised the rate of inflation.

The second paper considered the floating exchange rate system and how international capital flows distorted the exchange rate. International capital inflow was seen to inflate exchange rates making countries internationally uncompetitive and reducing the level of national income. That paper also explained how the floating exchange rate system sterilised the money supply from the effects of international transactions and thereby hindered export growth from contributing to economic growth.

This paper proposes an alternative monetary and exchange rate system, called the Optimum Exchange Rate System, that overcomes these problems. It allows the market to set the exchange rate at an optimum level, so as to achieve the nation's economic objectives.

1.1 Overview of the Optimum Exchange Rate System

The optimum exchange rate system is an integrated system for managing both the exchange rate and other monetary variables.

.	Unlike the fixed exchange rate system and like the floating exchange rate system, the optimum exchange rate system has a market determined variable exchange rate.

.	Like the fixed exchange rate system and unlike the floating exchange rate system, it allows foreign exchange transactions to impinge upon the money supply.

.	Unlike both the fixed and the floating exchange rate systems, it governs the total money supply by managing all sources of monetary growth, both international and domestic.

The system is made up of two parts:

.	a foreign reserve based banking system that ties bank lending to each bank's net holdings of foreign reserves; and

.	incentives for the banks to set the exchange rate at a level that would achieve the nation's economic objectives.

The optimum exchange rate system uses interest rates to regulate international capital flows. Also, it opens up a range of other mechanisms for implementing monetary policy, thereby making it possible to simultaneously achieve multiple economic objectives.

2.   The Foreign Reserve Based Banking System

To explain the first part of the system in isolation from the second part, it is necessary to assume that the economy has a fixed exchange rate system. This assumption is removed when considering the second part of the system which determines the exchange rate.

The first part of the system regulates the level of bank lending to meet economic objectives. It differs from capital adequacy and prime asset requirements which regulate the prudential aspects of bank lending. As shown in the first paper, the lending activities of non-bank financial institutions do not need to be regulated as their lending does not contribute to the growth of the money supply.

The foreign reserve based banking system requires commercial banks to hold foreign reserves. These reserves can be held directly by the commercial banks or indirectly through accounts with the central bank.

The amount banks are permitted to increase their net lending is then regulated according to the net growth of these foreign reserve holdings. For example, Australian banks may be authorised to increase their net lending by, say, A$10 for every US$1 increase in their net foreign reserves.

When banks increase their lending, they are likely to raise national expenditure, including expenditure on imports. Increased imports would reduce banks' foreign reserve holdings and constrain them from further lending until their foreign reserves were replenished. Therefore, an economy with such a system could not excessively increase bank lending and deplete its foreign reserves.

The system allows two basic sources of monetary growth; international transactions and bank credit. Money created from international transactions, such as exports or foreign capital inflow, would raise foreign reserves. Such money, when spent on imports, would reduce the money supply and foreign reserves. Once spent on imports, they could not cause foreign reserves to decline any further. Therefore, such money would not threaten the external stability of the economy. They would not deplete foreign reserves.

Under the foreign reserve banking guidelines, money created from bank credit would only be created when foreign reserves increased. So they, too, could not threaten the foreign reserves.

2.1   Consolidated Effect

To illustrate the effect of these guidelines on bank lending, we will consider the effect of a rise in foreign reserves. Assume that the balance sheet shown in Case 1a is the consolidated balance sheet of the banking system of an economy and that its banks are initially constrained by their foreign reserves from any further growth in lending.

Case 1a

Assets	A$B	Liabilities & Equity	A$B
Government Securities	15	Customers' Deposits	100
Foreign Reserves	10		
(US$7B)			
Loans Outstanding	85	Capital	10
Total	110	Total	110

We will assume that the guideline on bank lending is that lending may increase by ten domestic dollars (A$10) for every one United States dollar (US$1) increase in foreign reserves.   The banks initially hold the equivalent of US$7 billion of foreign exchange and has loans outstanding totalling $100 billion. Government securities are treated as loans. Note that the exchange rate is assumed to be A$1 equal to US$0.70.

Now assume that an increase in exports raises foreign reserve holdings by A$5 billion or US$3.5 billion. This is shown in Case 1b.

Case 1b

Assets	A$B	Liabilities & Equity	A$B
Government Securities	15	Customers' Deposits	105
Foreign Reserves	15		
(US$10.5B)			
Loans Outstanding	85	Capital	10
Total	115	Total	115

With an additional US$3.5 billion in foreign reserves, the banks would be authorised to lend A$35 billion. We will assume that the banks initially increase their lending by A$5 billion. This is shown in Case 1c.

Case 1c

Assets	A$B	Liabilities & Equity	A$B
Government Securities	15	Customers' Deposits	110
Foreign Reserves	15		
(US$10.5B)			
Loans Outstanding	90	Capital	10
Total	120	Total	120

This lending, together with the increased income from exports, is assumed to generate extra imports of $5 billion, after which the consolidated balance sheet of the banking system would be as shown in Case 1d.

Case 1d

Assets	A$B	Liabilities & Equity	A$B
Government Securities	15	Customers' Deposits	105
Foreign Reserves	10		
(US$7B)			
Loans Outstanding	90	Capital	10
Total	115	Total	115

In Case 1d, the foreign reserves have fallen back to US$10 billion. At this level of foreign reserves, the banks are constrained from any further increase in net lending until the foreign reserves rise to over US$10.5 billion. Hence the system constrains bank lending and ensures that the balance of payments are in surplus and so do not deplete foreign reserves.

The system would ensure that the banks' assets would include a growing amount of foreign reserves. Those reserves would grow in proportion to the growth of bank lending.

The ratio of foreign reserves to total loans in the above case is less than the marginal rate of US$1 to A$10. This is because it is assumed that the banking system existed before the policy was implemented and so they had loans outstanding at that time that were not matched with foreign reserves. It is necessary to apply the foreign exchange ratio on a marginal basis rather than an aggregate basis, otherwise banks lending would be excessively constrained following the introduction of the system, possibly for years, until banks had accumulated the required levels of foreign reserves.

2.2   Effect on Individual Banks

The foreign reserve based banking system requires each bank to hold its own foreign reserves and to regulate its lending according to the growth of those reserves. Some banks may not deal extensively in international transactions so it is possible that they may not directly suffer any loss of foreign reserves when they increase their lending. Therefore, inter-bank settlements need to be made in foreign exchange. In this way, each bank receives feedback through its foreign reserve holdings of the effect of its lending.

Although the system can allow commercial banks to hold foreign reserves in their own right, they may be a need to hold some foreign exchange with the central bank, or a clearing house, to facilitate inter-bank settlements. The central bank would also have the right to be paid in foreign exchange when banks purchase currency. Similarly, when the commercial banks return currency to the central bank, they should be able to claim the refund in foreign exchange.

Also, the system enables those banks that attract the most deposits to accumulate foreign reserves and engage in more lending. Thus, it promotes competition between the banks for deposits.

2.3   Interest Rates and International Capital Flows

The foreign reserve based banking system allows economies to lend according to the growth of their foreign reserves, regardless of whether those reserves were accumulated as export income or foreign investment. However, it does preclude banks from borrowing to increase their foreign reserves as their lending ratio is applied to the net foreign reserves, not the gross foreign reserves of the bank. The net foreign reserves are the banks' holdings of secure foreign monetary assets less their foreign liabilities.

If a country were attractive to international investment, the inflow of foreign capital would increase the banks' foreign reserves and so increase their capacity to lend. If the banks' capacity to lend exceeded the demand for loans, banks could lower interest rates. This would increase lending and also reduce the amount of foreign investment.

If a country had surplus foreign reserves without capital inflow, it could lower interest rates and so encourage more domestic investment as well as encourage investment overseas. Hence the system allocates financial resources efficiently.

The market would vary interest rates when necessary to meet the requirements of the economy. These are likely to be small changes adjusting for the needs of the economy. At equilibrium, these interest rates are unlikely to be significantly different to world interest rates.

There would be no need for high penalising interest rates. Governments would not need to regulate interest rates to implement monetary policy. The foreign reserve based banking system regulates the growth of the money supply to achieve a balance between

international payments and receipts. Government action on interest rates would be superfluous and undermine the operation of the optimum exchange rate system.

2.4   Current Account Deficits and Foreign Debt

The system does not preclude current account deficits. It is possible for a country in need of foreign investment to attract that investment and so spend more than it earns. But unlike the floating exchange rate system, that investment will not reduce the incomes of exporters and import competing industries. It can only increase national income.

Nor does the system prevent a country accumulating some foreign debt. However, any debt accumulated under the system would be serviced at close to world market interest rates. It would not be at the high interest rates inflicted on economies as an instrument of monetary policy. Hence they would inflict less of a burden upon the economy.

When that debt was repaid, the country's banking system would have the foreign reserves to convert the payment to foreign currency. Hence, such debt does not threaten international confidence in that economy nor the exchange rate of its currency.

2.5   Deriving the Ratio of Net Foreign Reserves to Lending

The ratio of net foreign reserves to the growth in lending should be used to establish a level of foreign reserves in the banking system that would enable the economy to withstand any crisis. The formula used to derive the ratio is:

$$R = \frac{L}{D} - 1$$

> where *R*   is the appropriate ratio of bank lending to the growth of net foreign reserves;
> *L*   is the money supply; and
> *D*   is the desired level of foreign reserves.

For example, let us assume that the government of an country considered that the desired level of foreign reserves was the equivalent to six months imports. Also, assume that the economy's money supply is $100 billion and its imports are $20 billion per annum. The desired level of foreign reserves would be then be $10 billion. Hence, the ratio of foreign reserves to bank lending would be 1:9.

The foreign reserves side of the ratio needs to be converted into terms of a foreign currency or a basket of foreign currencies, otherwise, banks could devalue the domestic currency to raise their lending capacity. Let us assume, therefore, that the country wishes to tie its foreign reserve requirement to Special Drawing Rights (SDR's) and that the exchange rate of the currency is $2 to one SDR. The bank lending ratio then would be $18 of loans for the equivalent of one SDR of net foreign reserves.

The central bank is free to vary the lending ratio at any time. It can choose to initially apply a low ratio to build up foreign reserves in the banking system and later adopt a more reasonable ratio once the foreign reserves were established. As the ratio is applied on a marginal basis, or to the growth of bank lending, such changes are not a problem. The central bank may vary the ratio at any time.

3.   The Optimum Exchange Rate

The foreign reserve based banking system regulates the money supply of an economy to ensure that it does not have any balance of payments problems. It ensures that the economy has balance of payments stability at any exchange rate.

The second part of the optimum exchange rate system varies the exchange rate to achieve an optimum rate. If conditions in the economy change and so alter the optimum rate, the market will modify the exchange rate to that new rate.

The relationship between the exchange rate, trade and national income at equilibrium at various exchange rates is presented in Figure 1. The equilibrium level of national income and expenditure is given by the $E=Y$ line. Equilibrium is achieved when exports equal imports. This is along the $M=X$ line. Full employment is achieved when national income is at Yf. If the exchange
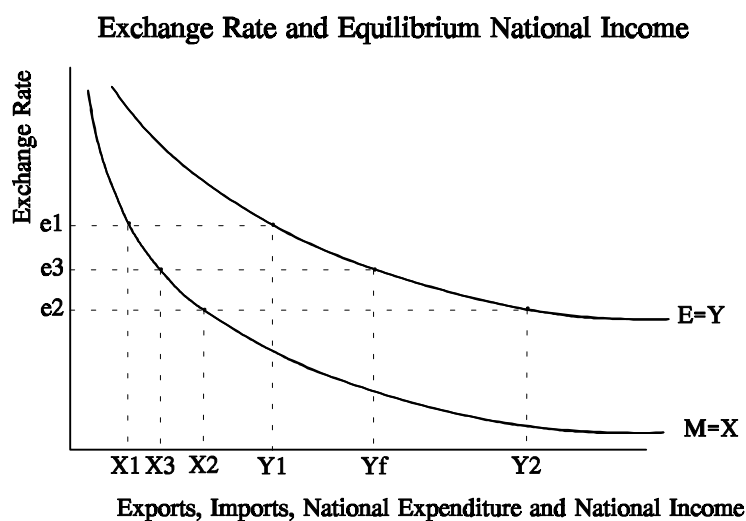
Exchange Rate and Equilibrium National Income

Exchange Rate

e1
e3
e2

E=Y

M=X

X1 X3 X2   Y1   Yf   Y2

Exports, Imports, National Expenditure and National Income

Figure 1

were $e1$, exports would be at $X1$ and equilibrium national income at $Y1$. At $Y1$, national income would be insufficient to provide full employment.

If the exchange rate were at $e2$, exports would be high at $X2$ and equilibrium national income would be high, also, at $Y2$. The economy would have over full employment which may raise the rate of inflation.

If the exchange rate were at $e3$, exports and imports would be at equilibrium at $X3$ and the equilibrium nation income would be at the full employment level.

The second part of the optimum exchange rate system establishes incentives for banks to set the exchange rate at a rate that would achieve outcomes at equilibrium such as full

employment. That is, to establish exchange rates that best facilitates the attainment of the nation's economic objects.

3.1   Incentives for the Optimum Exchange Rate

The optimum exchange rate system establishes incentives in the market place to bring market objectives into line with the government objectives. For example, we will assume that the government's objective is achieve full employment (say, less than 2 per cent unemployed) with low rates of inflation (say, less than 2 per cent per annum).

To achieve these objectives, the central bank may permit the banks to increase their total lending by, say, A$10 for each US$1 increase in their net foreign reserves, provided that the unemployment rate and the inflation rate were both below 2 per cent. If the rate of unemployment or inflation exceeded 2 per cent, then the amount that banks may increase their lending per US$1 increase in net foreign reserves would be reduced by A$1 for each one per cent, or part thereof, that unemployment or inflation exceeds 2 per cent. Therefore, if unemployment were at 5 per cent and inflation 4 per cent, the banks would be authorised to lend only A$5 per US$1 increase in their net foreign reserves.

When government objectives were not met, this policy would reduce the ratio of the banks' high income earning assets relative to their low income earning reserve assets. Such an outcome would reduce the banks' potential profits. Hence, in an effort to maximise profits, banks would set the exchange rate at the level that will achieve the government's objectives.

The banks' power in the foreign exchange market would ensure that the exchange rate that they set would become the market rate. Non-bank foreign exchange dealers would be able to compete with banks. However, their competition is likely to be limited to shaving margins between buying and selling rates. They would not have the resources to set the mid rate.

The banks' power in the market comes from their ability to convert foreign exchange directly into domestic currency without having to find a buyer. Also, they would hold large foreign reserves which would enable them to provide foreign exchange without having to find a supplier.

Banks would not need to collude with each other to set the exchange rate. Exporters and importers would be seeking the best rates on the market. Also, banks would be free to speculate on the market, selling foreign exchange if they considered the exchange rate were too low, and buying foreign exchange if they consider the exchange rate were too high. These activities would lead to the establishment of a standard market rate.

The effect of the rate of unemployment and inflation upon the profits of the banks are so significant that banks would be willing to invest in strong economics departments to evaluate the economic implications of their lending policies. Such investments are likely to produce economists of a high calibre in the private sector competing with each other.

Hence, it is possible that countries adopting such a system would develop a number of economic research centres focussed on addressing the nation's economic problems. Such research is likely to improve our understanding of the economy and thereby contribute further to the attainment of the nation's economic objectives.

The example presented here is only one possible scenario for such a system. There are likely to be many policies and incentives that may be used to encourage the foreign exchange market to set the exchange rate at an optimum level. Also, different economies would have different institutional arrangements. Such differences may necessitate unique arrangements.

Nor should the objectives of full employment and low inflation be considered as the only targets for the exchange rate. Some economies may not have accurate employment statistics. They may consider other objectives such as a high rate of economic or export growth to be the target for the exchange rate. The optimum exchange rate system is open and can be directed at achieving a range of economic objectives.

3.2   Stability of the Exchange Rate

Under the optimum exchange rate system, the market determines exchange rate. However, that exchange rate is likely to be much more stable than the exchange rate derived under the floating exchange rate system. Under the optimum exchange rate system, the banks vary the exchange rate only to bring it closer to the rate that would achieve the objectives determined by government. Once the optimum exchange rate was established, the exchange rate would be unlikely to vary significantly in the short term. If the weather or other factors require a change in the optimum exchange rate, the market would respond quickly. Even so, such changes are likely to be small and infrequent.

The banks' holdings of foreign reserves not only provide a mechanism for regulating the growth of lending but they give the banks the resources necessary to defend the exchange rate that they set. It is this capacity that provides stability to the whole system.

3.3   Hot Money and Speculation

Under the floating exchange rate system, large short term international capital flows, or hot money, destabilised exchange rates. Under the optimum exchange rate system, any hot money entering the country would add to the foreign reserves of the banking system and increase the money supply. Similarly, any hot money leaving the country would be paid out of foreign reserves and reduce the money supply. The optimum exchange rate system ensures that hot money has no effect upon the exchange rate.

The stability of the exchange rate under the optimum exchange rate system is likely to reduce the amount of hot money flowing into a country. An economy using the system may find some hot money entering during periods of instability in other economies. However, as more countries adopt the system, the level of instability on foreign exchange

markets would decline. This is likely to reduce the amount of currency speculation and so reduce the amount of hot money on foreign exchange markets.

Any speculator wishing to speculate on the exchange rate market would be speculating against the banks. The banks have continuous information on both the level of domestic and international economic activity and have the ability to change the exchange rate whenever they wish. Speculators are unlikely to successfully speculate on the foreign exchange market unless they have better information than the banks.

Under the fixed exchange rate system, banks were amongst the largest speculators and would advise their customers to speculate, also. In that system, speculators were speculating against the central bank. Under the optimum exchange rate system, banks could only speculate against themselves and other foreign exchange dealers. Any anticipation of a change in the exchange rate is likely to clause banks to immediately change the exchange rate. Therefore, there would be very little opportunity for speculation.

4.   The Operation of the Complete System

The complete optimum exchange rate system, comprising the foreign reserve based banking system and the incentives to motivate banks to set the exchange rate at the optimum level, establishes conditions in an economy that enable it to readily attain its economic objectives. For example, consider the economy presented in Figure 2. Its exchange rate is initially at *e1* and its national income is at *Y1*. Imports and exports are equal at *X1*. The economy suffers unemployment as its national income is below that necessary to provide full employment.

The economy is then assumed to adopt the optimum exchange rate system with incentives to achieve full employment. Immediately, the foreign exchange market would devalue the currency. It would set the exchange rate at its best estimate of *e2*, the rate at which the economy at equilibrium would attain full employment.

As soon as the exchange rate falls, income from existing exports would rise in terms of domestic currency. In addition, the economy would be able to increase its export volume as the lower exchange rate would make its products more internationally competitive. Exports would rise from *X1* towards *X2*.

Initially, imports would decline along the import schedule *M1-M1* from the point *a* to *b*. The fall in spending on imports means spending on domestic products would have increased from the interval *a-p* to the interval *b-q*. This increased income from domestic products, together with the increased export income, raises national income to the point *r*. At that level of income the demand for imports would rise, shifting the import schedule to the right.

Exchange Rate and Equilibrium National Income
under the Optimum Exchange Rate

[Figure: A graph with "Exchange Rate" on the vertical axis and "Exports, Imports, National Expenditure and National Income" on the horizontal axis. Curves labeled M1, M2, E=Y, M=X are shown. Points labeled a, b, c, p, q, r are marked. Horizontal dashed lines at e1 and e2. Vertical reference lines at X1, X2, Y1, Yf.]

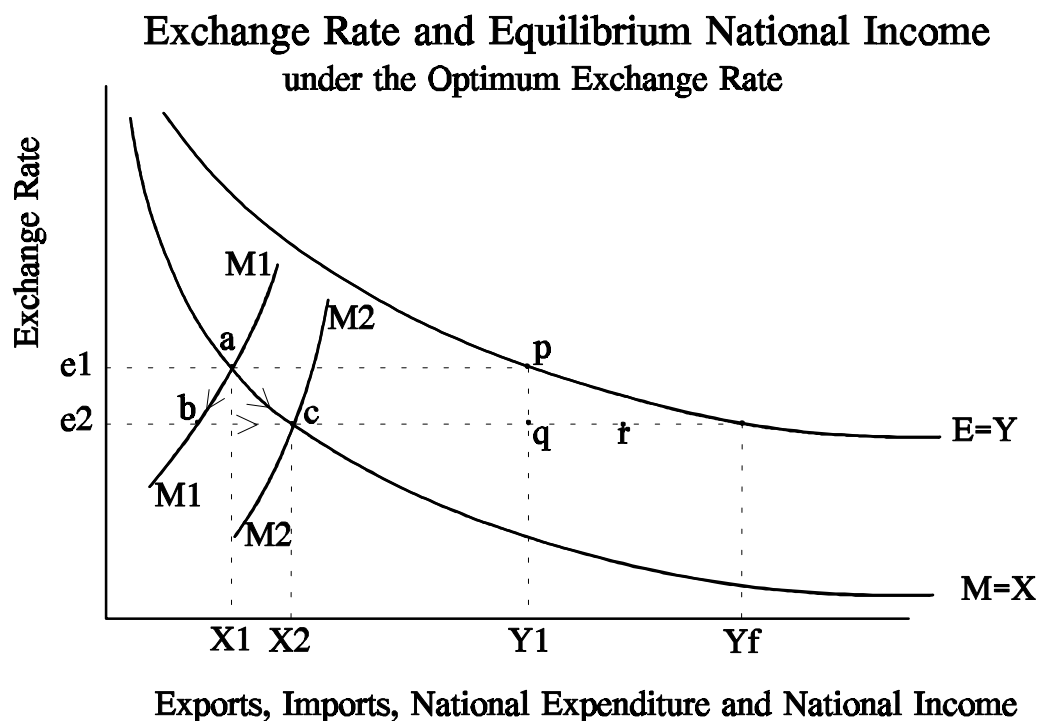Exports, Imports, National Expenditure and National Income

Figure 2

While exports exceed imports, the foreign reserves of the banking system would rise and banks would be able to expand their lending. This together with the rising export income and the increased spending on domestic products would raise national income to the full employment level at *Yf*.

At that income, the imports schedule would have moved to *M2-M2* and imports and exports would be equal at the point *c*. At this point, there would be no growth in foreign reserves. If banks tried to expand their lending, they would increase national expenditure above national income and cause a current account deficit. That deficit would deplete the banks' foreign reserves and constrain them from any further growth in lending until those reserves were replenished. When national income was at *Yf*, the economy would be at equilibrium with full employment and with exports and imports equal at *X2*.

During the period of monetary expansion, national income would be rising, also. Hence the monetary growth is unlikely to cause any significant rise in inflation. Once full employment was reached, the system constrains monetary growth and so it would constrain inflation.

This does not mean that bank lending would cease to grow in a real economy. Industries may increase their investment and reduce their labour requirements. Also, the natural population growth will increase the labour force. These and other factors continually increase the required money supply and the level of national income necessary to provide full employment. Even so, the optimum exchange rate system is able to continually adjust

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the exchange rate, national income and the money supply to ensure that it attains and maintains the country's economic objectives.

4.1   Interest Rates and International Capital Flows

As we have seen, international capital flows distorted the exchange rate under the floating exchange rate system. Under the optimum exchange rate system, this distortion is removed. However, such flows do affect interest rates. This is shown in Figure 3 which represents the finance market of a country using the optimum exchange rate system. The demand for loans is represented by the Lending line. The supply of foreign capital is given by the *K1-K1* line. Interest rates are assumed to be initially at r1 and lending and loan repayments are equal at L1.

The supply of foreign capital is then assumed to rise to *K2-K2*. The additional capital raises the foreign reserves of the banking system and allows them to increase lending. However, the demand for loans is being met at the current interest rate *r1*. Therefore, the market would start to lower interest rates. As interest rates fall, lending increases and the borrowers that took out

Figure 3

loans when interest rates were at *r1* are would be able then to repay their loans more rapidly, approaching the level *P*. Loan repayments reduce national expenditure below national income and this causes imports to decline and foreign reserves to rise. Hence the banks gain even more funds to lend. This drives interest rates down further. In the long term, interest rates would fall to *r2*. At that interest rate, the issue of new loans and the repayment of old loans would be equal at *L2*. Note that at interest rate *r2*, foreign investment has declined to zero.
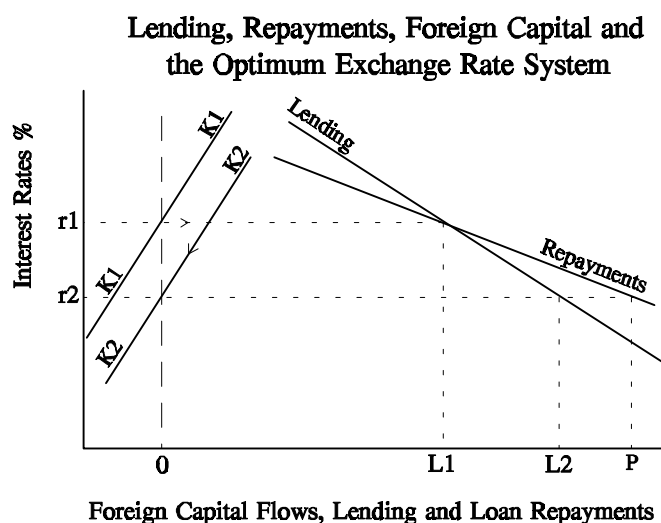
If the banks did not have the capacity to supply the demand for loans, they could raise interest rates and attract foreign investment to increase their foreign reserves and their lending capacity. This is shown in Figure 4 where the demand for loans is given by the *Lending Demand* line and the supply of foreign capital is given by the *K-K* line. The capacity of the banks to supply loans is given by the *S1-S1* line. Initially, interest rates are at r1 with no foreign capital inflow and lending at L1.

The banks then raise interest rates to *r2* and so attract more foreign capital inflow. These funds enable them to increase their lending to *L2* and meet the demand for loans at that rate of interest.   However, once they had met that demand, loan repayments would start to rise. This, together with the foreign capital inflow would increase the banks' capacity to lend. Their supply of funds for loans
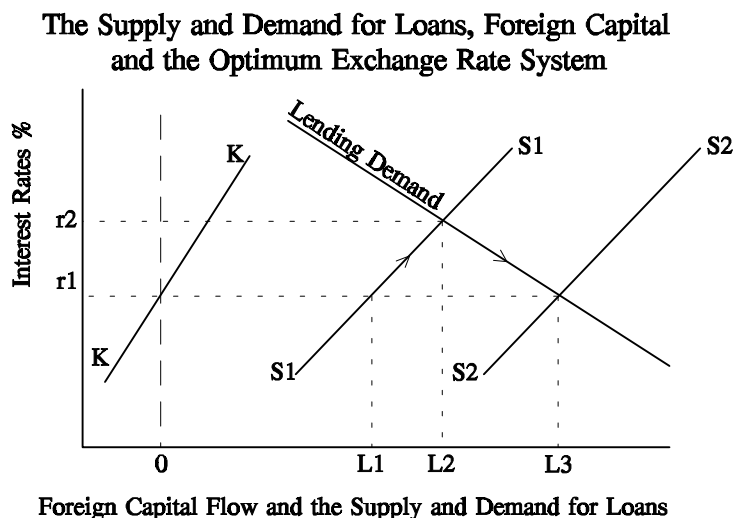
The Supply and Demand for Loans, Foreign Capital and the Optimum Exchange Rate System

Foreign Capital Flow and the Supply and Demand for Loans

Figure 4

would shift to the right. As demand is already saturated at interest rates *r2*, interest rates would start to fall. As they did, foreign capital inflow would start to fall also. Eventually, the supply of loanable funds would shift to *S2-S2*, interest rates would return to *r1* and lending and loan repayments would be equal at *L3*.

4.2   Lending and the Current Account Deficit

In the previous example, the growth in bank lending would have caused national expenditure to exceed national income and so generate a current account deficit. Even so, foreign reserves would have continued to grow as this was necessary for bank lending to grow. Therefore, foreign capital inflow would be greater than the current account deficit.

Once loan repayments had equalled the level of lending, national expenditure would not exceed national income. At that point, the current account deficit would be eliminated. Thus the optimum exchange rate system allows current account deficits but in the long term, they are eliminated. An economy with a current account deficit is in a disequilibrium situation and conditions would continue to change in that economy until the equilibrium point was reached. At that point, the current account deficit would cease.

4.3   Qualitative Benefits

Under the optimum exchange rate arrangements, banks are likely to look at the wider implications of their lending policies. For example, they may favour investments in regions with high unemployment, over regions that already have full employment. Such action is likely to improve resource utilisation and improve the overall efficiency and productivity of an economy.

If a country had a shortage of lending capacity, the foreign reserve based banking system would tend to favour loans that used domestic resources to increase export income over projects that used foreign resources to supply the domestic market. Such action would contribute to the overall efficiency and productivity of the economy, also.

The optimum exchange rate system provides incentives for banks to assist their customers earn export income. Therefore, it is likely that banks will play a significant role in trade promotion. This, too, is likely to contribute to the overall efficiency of the economy.

4.4 Inflation

Under the optimum exchange rate system, exports growth promotes monetary growth. Therefore, monetary growth is linked to a corresponding rise in national income. This minimises any increase in the ratio between the money supply and national income and so minimises inflation from the monetary growth.

4.5 Government Fiscal Benefits

The optimum exchange rate system maximises employment and economic growth. Hence it would minimise the need for social security payments for the unemployed and maximise government revenue from direct and indirect taxes. Therefore, it provides more resources to government to undertake its responsibilities.

Under the optimum exchange rate system, government borrowing can squeeze out private sector investment by raising interest rates. This need not dissuade government from borrowing when it has viable projects to finance. If government investment were viable at the higher interest rates, it should proceed as its investment would squeeze out private investment with lower rates of return, only. The government's investment would be making a greater contribution to the overall welfare of the economy.

5. Institutional Arrangements

The optimum exchange rate system uses existing institutions to provide a monetary system capable of achieving the economic objectives of the government. There is no need for any new institutions and the role of each institution is clearly defined.

5.1 Commercial Banks

Bank lending affects the money supply. Through this, it effects the exchange rate, the current account, inflation and national income. Its effect on national income helps to determine the level of employment. This happens under any exchange rate system. The

optimum exchange rate system acknowledges this and uses a system of management by objectives to motivate banks to manage their activities to achieve the nation's objectives.

It raises the status of commercial banks. Instead of being subjected to monetary policy they become the controllers of monetary policy. They set the exchange rate and interest rates and determine the money supply. Together with this added power, they are required to accept responsibility for managing the level of unemployment and inflation in the economy. They are made responsible for their actions.

5.2   The Central Bank

The role of central banks under the optimum exchange rate system is to establish the guidelines for bank lending and to enforce them. They would continue to perform their other functions such as providing prudential guidelines and issuing currency. However, they would not need to interfere in the foreign exchange or finance markets.

The enforcement of the lending policy would require commercial banks to continue to provide regular reports to the central bank. These reports would include statements about the amount of bank lending, their foreign reserve assets and their foreign liabilities.

The requirement that banks use their foreign reserves to settle their inter-bank accounts would result in commercial banks paying foreign exchange to the central bank to purchase currency. The central bank should add such receipts to its foreign reserves. The currency outstanding should be treated as a liability. The central bank may lend funds to the government but such lending should be subject to the same conditions as apply to commercial banks. Otherwise, it may deplete its foreign reserves.

5.3   Non-bank Financial Institutions

As we have seen in the first paper, the activities of non-bank financial institutions do not need to be regulated for purposes of inflation, employment nor the current account deficit. The foreign reserve based banking system puts constrains on bank lending similar to those that apply to non-bank financial institutions. Therefore, these institutions are likely to find competition in the finance market more equitable.

5.4   Role of Government

The government's role in the optimum exchange rate system is to determine the objectives that are to be achieved through monetary policy. The adoption of the optimum exchange rate system would remove any need for government to be actively engaged in activities to promote industrial growth or trade. There would be no need for government to be active in price control nor wages policy. The banks would ensure that inflation was constrained. The high level of employment would provide a competitive market for labour and ensure that employees were paid fairly.

6.   International Aspects

6.1   Unilateral Adoption of the System

Like the fixed exchange rate system, the optimum exchange rate system uses foreign reserves to ensure that the foreign exchange requirements of the economy can be readily met. Governments have used their foreign reserves in the past to unilaterally set the exchange rate. The optimum exchange rate system uses the same principle. Instead of governments setting the exchange rates, commercial banks would be setting the rate and using their foreign reserves to defend that rate.

Therefore, the optimum exchange rate system can be adopted unilaterally by any country. It does not require the co-operation of other economies.

6.2   Consistent with IMF Articles

Article IV of the Articles of Agreement of the International Monetary Fund (IMF) requires members "*. . . to assure orderly exchange arrangements and to promote a stable system of exchange rates. In particular, each member shall:*

> *(i)   endeavour to direct its economic and financial policies toward the objective of fostering orderly economic growth with reasonable price stability. . . ;*
>
> *(ii)   seek to promote stability by fostering orderly underlying economic and financial conditions and a monetary system that does not tend to produce erratic disruptions; . . .*"

Any country that adopted the optimum exchange rate system could use the system to achieve these objectives.

Initially, some countries that adopt the system may not have the foreign reserves necessary to defend their exchange rate. The International Monetary Fund could assist such countries to establish the system and be assured that the monetary conditions and exchange rate being established would be sustainable and consistent with the Fund's objectives. Hence the IMF could play a role with its existing institutional arrangements to provide a beneficial service to countries adopting the system.

6.3   Promotes World Trade

Many countries, particularly in Asia, have benefited from the inflated exchange rates of western economies generated under the floating exchange rate system. Those countries may fear a reduction in their export incomes if western economies adopted the optimum exchange rate system.

However, they have no reason to fear such an outcome. The optimum exchange rate system increases national income through increased trade. Countries that adopt the system will increase their exports and their imports. Hence, countries that previously relied upon international trade with countries using the floating exchange rate system may prosper even more when trading with countries that adopt the new system.

The system creates a more stable economy than the floating exchange rate system. Therefore, international trade should become more stable and this would contribute to world prosperity.

Countries that have been constrained by policies designed control the growth of foreign debt could grow more rapidly if they adopted the system. It would increase their participation in world trade and open new markets for other economies.

6.4   Trade Protection Redundant

If there are strategic purposes for fostering an industry, then the government should pay the industry to maintain that benefit. But under the optimum exchange rate system, there is no need to provide long term protection to an industry to provide employment. The optimum exchange rate system provides the monetary conditions and the exchange rate that is most likely to facilitate the attainment of a nation's employment and income objectives.

6.5   Regional Grouping Redundant

The floating exchange rate system has fostered regional trade groupings such as the European Union and North Atlantic Free Trade Area. Countries have formed these groups in an attempt to overcome the problems of an inflated exchange rate caused by the floating exchange rate system. The optimum exchange rate system overcomes these problems and allows economies to open their markets to world trade.   It makes regional trade groups redundant and provides the full benefits of world trade.

7.   Conclusion

The optimum exchange rate system provides countries with a stable monetary system and establishes the conditions necessary to maximise employment without balance of payments or inflationary problems. Countries that adopt the system can expect to be able to sustain high levels of economic growth and maintain economic stability.

The system is simple and does not require major changes to the existing institutional arrangements. It provides clear role for financial institutions and regulates their activity to ensure that their efforts are directed at attaining the objectives of economic policy.

It offers an environment for economic activity that is consistent with trade theory. The basis for trade is comparative advantage. It does not require countries to become more efficient or achieve an absolute advantage over other countries before they can prosper from trade.

The optimum exchange rate system would eliminate the problems of growing foreign debt and unemployment associated with most advanced western countries. These economies would prosper under the system and that prosperity would spread to other countries.

The optimum exchange rate system is, as it name implies, an optimising system. It does not put any economy or industry down. It raises all economies and industries up to maximise the economic prosperity of all parties.

<div align="center">*****</div>

Reference:

POLAK, J.J. 1957. `Monetary Analysis of Income Formation and Payments Problems' *IMF Staff Papers*, vol VI, No. 1, pp.1-50