

GOVERNMENT INTERVENTION
IN THE
FORWARD EXCHANGE MARKET.

AN EXAMINATION OF THE PROBLEM
OF GOVERNMENT INTERVENTION IN
THE FORWARD EXCHANGE MARKET,
WITH SPECIAL REFERENCE TO RECENT
BRITISH AND AMERICAN EXPERIENCE.

BY

WARWICK EDWARD CHRISTOPHER FRANKLIN, B.A.

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AUTHOR: Warwick Edward Christopher Franklin, B.A. (Liverpool)

SUPERVISOR: Dr. W.M. Scammell

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Introduction and Statement of Intent.

Official intervention in the forward exchange market, as a method of reducing the reserve drain of a weak - currency country and of supporting confidence in its currency's existing par value, has become more than an academic topic. In the period following Germany's revaluation of the Deutschemark in March 1961, the American and German authorities jointly undertook substantial commitments to deliver forward marks to hedgers and speculators who anticipated a further revaluation of that currency. During the speculative attack on the Canadian dollar in 1962, the Canadian authorities sold forward at least 239 million U.S. dollars, equal to 20% of their spot reserves at the time.¹ Again, more recently, between 1964 and 1967, the period representing the dénouement of the prolonged siege of sterling which had become a permanent feature of the international monetary scene since at least the mid 1950s, the Bank of England undertook large forward commitments, the exact amount of which remaining undisclosed for political reasons.

¹ c.f. Dominion Bureau of Statistics, Quarterly Estimates of the Canadian Balance of International Payments, Fourth Quarter 1962, and Preliminary Estimates for the Year 1962, Vol. 10. No. 4, page 15.

This active intervention by Governments in the forward market is permitted under the present International Monetary System, as formalised at Bretton Woods. The authorities of a country may intervene to influence not only the spot but also the forward rate of exchange. As it is stated in Article IV of the IMF Charter, the margin between the spot and forward rate of a currency is not to be more than the Fund considers reasonable.¹ Since reasonableness is nowhere defined, this means that there are no fixed limits to the movements of forward rates of exchange, and governments are

¹Annex II - Articles of Agreement of the IMF. Article IV Par values of Currencies.

Section 3, Foreign exchange dealings based on parity -

"The maximum and minimum rates for exchange transactions between the currencies of members taking place within their territories shall not differ from parity

- i) In the case of spot exchange transactions by more than 1%.
- ii) In the case of other exchange transactions by a margin which exceeds the margin for spot exchange transactions by more than the Fund considers reasonable."

Year Book of the United Nations 1946-47, page 373

With regard to the above, it should be noted that, in July, 1970, the U.S. Government launched a surprising initiative for a substantial rewriting of the articles of agreement of the IMF, to allow for more exchange rate flexibility.

For statements and analysis of the proposed reforms, reference should be made to 'London Times Business News', July 7th - 8th.

at liberty to decide whether or not to intervene in the forward market.

In fact, financial authorities have decided increasingly in the recent past to intervene, although somewhat sporadically, in the forward market. This is particularly true of the major financial powers. The forward market, because of its special susceptibility to speculative influences, is regarded as an important indicator of expectations with respect to spot rates. A fall in a currency's forward rate is often a signal of a decline in the market's confidence in the same currency's spot rate. If this fall is not checked, "it can easily lead to a cumulative wave of adverse speculation generating outflows of short-term capital directly, as well as indirectly via the creation of perverse arbitrage incentives."¹ To prevent this, governments are more willing than ever today to constrain forward rate movements by operating as residual buyer and seller of their own currency in the domestic forward market. This is the most common method of intervention. Another, less common technique involves the use of swap accommodations whereby the authorities buy or sell spot exchange at a certain rate while, at the same time, selling or buying forward

¹B.J. Cohen, Balance of Payments Policy. Penguin Modern Economics Series: Chapter 2, page 82.

exchange at another rate.

Much of the recent literature which has appeared on the subject of forward intervention has been concerned with the defense of sterling, but many of the issues involved are applicable to any major currency under speculative attack. Because of the increased interest in the subject in government circles, it would seem useful to re-examine afresh the effects of official transactions in forward exchange and the circumstances where such transactions would be appropriate. Thus, in the first part of this paper, I intend to examine the question of Government Intervention in the Forward Exchange Market from the theoretical side and to posit, and try to answer, some of the questions this issue has given rise to. Consideration will be given to such questions as: should intervention be limited in extent and/or duration and if so, in what sense and why? In what sort of payments situation is official support of the forward rate appropriate? Need it be confined to meeting speculative attacks?

Having completed this theoretical analysis, I will then turn, in part two of the paper, to an examination of the British authorities views and policies with regard to intervention and to the radical change in opinion which has occurred on this subject over the last decade. It will be shown that

British forward intervention has had a somewhat fitfull history to the extent that it has been pursued with vigour in some periods and abandoned in others. Some attempt will be made to examine this periodicity and the reasons behind it. By way of contrast, a short chapter will also be devoted to American use of forward support over the last ten years.

This examination and contrasting of British and American experience of forward - market intervention will serve to underline the difference in the availability of data. Whereas the U.S. publishes at regular intervals detailed information regarding the size, nature and duration of any support given to forward markets of various currencies, along with a running total of outstanding commitments, the British authorities, according to a high-placed Bank of England advisor, regard such information as being "too politically explosive" and, in consequence, keep it a closely guarded secret. The latter viewpoint has obviously been determined by Britain's serious economic difficulties over the last 15 years and a wish not to accentuate such difficulties by publishing information which might, in the official view, be misinterpreted by the exchange markets. Although such reticence is understandable, it makes any study of British forward-exchange policy that much more difficult. However, as will be seen, there are some policy statements available which help to

overcome this inherent difficulty and make some analysis possible.

Finally, in the third part of the paper, an attempt will be made to draw the threads of the above theoretical and practical analysis together and to try and arrive at some conclusions regarding the efficacy and desirability of official forward intervention. Before embarking on this course, it is not inappropriate to examine the theoretical structure of the foreign exchange market per se, since this provides the essential constraints within which the theory of forward intervention must operate.

Part 1.

Chapter 1 - Basic Foreign Exchange Market Theory.

An international transaction generally comprises two separate exchanges: one is the commercial or financial exchange itself, the other is the transfer of one national currency into another required to effect payment. The latter are called foreign - exchange transactions and occur on the foreign - exchange market. Thus, broadly defined, the foreign - exchange market is a mechanism which makes possible the exchange of different national currencies between buyers and sellers.

These buyers and sellers can be divided into separate groups. The largest, and most influential, is the central bank of a country. In addition to being in control of the particular country's reserves of gold and foreign exchange, the central bank is the body responsible for the maintenance of its domestic currency's exchange rate within the constraints imposed by the rules of the IMF.¹ The exercise of this function requires the central bank to intervene in its own foreign exchange market as residual buyer and seller - that is, purchasing its own currency, in exchange for foreign currencies from the reserves, when it is oversold, and selling

¹c.f. page 2, footnote 1.

it for foreign currencies when it is overbought. This stabilisation function, achieved by means of market intervention through an Exchange Fund, makes the central bank the most powerful force in the foreign exchange market.

The other two main groups of buyers and sellers are the commercial banks, and the merchant and international banks. The former, who operate in the inter-bank market through their foreign exchange departments, hold working balances of the major currencies which they increase or decrease, according to the needs of their customers, by straightforward buying and selling in the market. The latter, whose main preoccupation is with international trade and investment, also buy and sell in the market to facilitate these transactions, and it would appear that their role, is of increasing importance.

Most of the banks which deal internationally maintain balances in a number of foreign currencies with correspondent banks or affiliates abroad. The foreign exchange transactions themselves are merely accounting debits and credits relating to the foreign - currency balances of these banks. In practice, such transactions are generally made by means of a cable transfer, which effects the necessary change in the ownership of a foreign - currency deposit. Other types

of transfers are also used, for example air mail, but these are of lesser importance.

When an international monetary transaction is made, there obviously has to be some exchange rate for the currencies involved. This rate is the price of one currency in terms of another and, as such, can be stated in either of two monetary units. Some countries, including the United States, prefer to express the exchange rate as the price, in domestic currency, of a unit of a foreign currency; others quote it as the price, in foreign currency, of a unit of domestic currency. However it is expressed, the foreign exchange rate serves an important - indeed, an indispensable - function. For, by indicating how many units of one currency must be exchanged for a unit of another, it provides a measure of their relative values for purposes of international trade. As such, it makes it possible to translate domestic costs and prices in different countries into their international price equivalents, and thus to compare the relative prices of different commodities in the international market.

Since an exchange rate is the price of a foreign currency in terms of a domestic currency, each country has as many foreign exchange rates as there are other currencies. These exchange rates also imply a multiplicity of cross rates

between the other currencies, all of which must correspond with one another. If, for any reason, they do not, an opportunity exists for a profit to be made through a process known as exchange arbitrage; however, consideration of this will be postponed until later.¹

Most writers on the subject² agree that the foreign - exchange market performs three basic functions: to effect international transfers of purchasing power, to provide credit for foreign trade and to furnish facilities for hedging foreign exchange risks. These will be examined briefly in turn.

The foreign exchange market transfers purchasing power by means of a clearing process which is the international analogue³ of clearing within the domestic banking system. A country pays for its imports with its exports. Exporters in a given country receive payment for their goods in domestic

¹c.f. below, page 18

²For example see:
 I. Wexler, Fundamentals of International Economics (New York, 1968), Chapter 8.
 Ingo Walter, International Economics (New York, 1968), Chapter 10.
 C.P. Kindleberger, International Economics (Illinois, 1968, 4th Edition), Chapter 23.

³The phrase is Kindlebergers. See his International Economics page 438 for a flow diagram illustrating this.

currency from overseas buyers, who thereby pay domestic currency for their purchases from abroad. Thus while goods and various instruments of credit move between countries, the clearing process allows payments to be made, for these transactions, in domestic currency within the country, except for any settlement of net balances. The latter occurs when, as a result of foreign transactions, a country's claims are not equal to its payments. This excess demand or supply of foreign exchange is removed from the market either through short-term capital movements, by speculators, by the monetary authorities of the country, through transfers of gold or, more fundamentally, through a change in price (i.e. exchange rate). As Kindleberger has written, this "possibility of imbalance at the margin complicates the foreign exchange market, and opens up a variety of possible outcomes. But the basic function of the market is discharged in dealing with the inframarginal transactions, that is, in clearing payments against receipts in transactions with foreign countries".¹

It should be noted that while the ultimate suppliers and buyers of foreign exchange are primarily those who engage in importing, exporting and foreign - investment activities,

¹ Ibid, page 441.

it is the banks referred to above (excluding, of course, the central bank) which effect the clearing process required by these foreign - exchange transactions. Without such a mechanism, an international exchange of goods and services could not occur. For, although goods could conceivably be exchanged internationally on a barter basis, the scope of such trade would be severely limited. Further, it would be difficult to conceive of an international exchange of services or flows of capital based on such a system. Thus, in this respect, foreign and domestic trade are very similar. Both depend on the existence of an efficient mechanism by which payments can be transferred from buyers to sellers, regardless of the distance between them. And, just as the banking system within each country makes possible the transfer of funds domestically, so banks, through their participation in the foreign exchange market, facilitate the transfer of funds internationally.

As for the "credit" function of the foreign - exchange market, it is clear that the availability of credit and credit facilities is as much a requirement for the conduct of foreign trade as of domestic trade. Consequently, the same institutions - that is, banks - that effect the transfer process have also come to be regarded as the major source of short - term credit with which to finance exports and imports. Although the

technicalities of such operations will not be examined here, it might be noted that the extension of credit to finance international trade differs only from such operations for domestic trade in one respect: the credit instruments used to finance international trade may be denominated in foreign currencies. Thus, a purchase or sale of foreign exchange may be involved as well.

Everything that has been said so far concerning the foreign exchange market has implied that all transactions in international currencies are consummated immediately: that is, currencies are sold for immediate delivery at rates of exchange existing at the time the transaction is made. In fact, foreign exchange is not only contracted for delivery in the present but also for future delivery; the latter is known as forward exchange, the forward rate being the price for such transactions fixed at the time the contract is drawn up. Forward rates, usually for 30, 60, 90 or 180 days delivery, can be quoted in the same manner as spot rates, but it is more common for either currency involved to be quoted in terms of its relation to the spot rate of the two currencies. This means that the forward rate is usually stated as a discount from, or premium on, the spot rate.¹ The spot and forward

¹For example, if spot sterling is quoted in New York at \$2.40, while the 3 month forward rate is \$2.3950, the latter may then be stated as a 50 point discount.

markets together are the components of the overall foreign exchange market.

Importers and exporters utilise the forward market since they regard it as a relatively cheap method of avoiding the risks of a possible movement in the spot rate. Such transactors, dealing, of course, through their banks, take on an exchange risk if they have an open position in a foreign currency; this can take the form either of a long position, which is an excess of claims over liabilities, or of a short position, an excess of debts over claims. With the former, the transactor faces the risk that the spot rate of the foreign currency may fall; this risk can be avoided by the selling forward of anticipated foreign exchange receipts. With the latter, the risk of a rise in the spot rate can be eliminated by buying forward to meet anticipated payment obligations. Both of these techniques of risk - of uncertainty - avoidance are known as covering.

Forward markets also provide a method of protecting the value of capital assets against the possibility of movements in the spot rate. This process, known as hedging, involves the holders of assets denominated in a foreign currency avoiding the possibility of an exchange depreciation by selling this currency forward, thereby ensuring that the value of these

assets will be maintained in terms of their domestic currency. However, hedging and covering are not costless techniques since accommodation might be expensive if forward exchange is selling at a discount, as it is likely to be in the circumstances which induced the hedging. For example, if the spot rate does not decline before the maturity of the forward contract, the transactor stands to lose the difference between this spot rate and the rate at which he sold forward.

Apart from being used for financing trade and avoiding risk, the spot and forward exchange markets are also used for speculative purposes. Those individuals or institutions who engage in speculative activities often take on a sinister role in the minds of politicians. The latter, especially in times of so-called currency crises, view them as traitors to their country or as selling their country short! This emotionalism, although understandable, is inaccurate. Speculators are merely risk takers who are interested in taking advantage of the possibility of movements in a currency's spot rate over time.¹ By being willing to take an open position in a foreign currency, they consciously face an exchange risk. They make their profits through their expectations regarding the spot

¹In contrast, traders and investors are risk avoiders, aiming to prevent the uncertainty inherent in foreign exchange transactions by covering an open position.

rate in the future being more accurate than the general view prevailing in the market.

In a manner analagous to the domestic money market, foreign exchange speculators are either known as "Bulls" or "Bears". The former takes a more optimistic view than the market, while the latter takes a more pessimistic view, with regard to the prospects for the price of the currency.

An important process carried out in the foreign exchange market is arbitrage which, as defined by Einzig,¹ is the "simultaneous buying and selling of foreign exchanges for the sake of realising profits from discrepancies between exchange rates prevailing at the same time in different centres, or between forward margins for different maturities, or between interest rates prevailing at the same time in different centres or in different currencies". The first two forms of arbitrage, known as "space" and "time" arbitrage respectively,² are the two basic kinds of exchange arbitrage, and they perform the vital function of keeping the market for a given currency unified all over the world. A simple example, illustrating space arbitrage, will serve to underline this point.

¹P. Einzig, A Textbook on Foreign Exchange. (New York, 1966); Appendix I, page 233.

²For a more detailed treatment of these concepts, see Einzig's book, Chapters 6 - 8.

Suppose a change in the demand for pounds occurs in New York. The resultant increase in the dollar rate on pounds will be transmitted, almost instantaneously, from New York to London by arbitrage. If the rate for the pound had increased to \$2.4010 in New York, while the rate for the dollar had remained at \$2.40 in London, it would become profitable for arbitrageurs to buy pounds at \$2.40 in London and sell them at \$2.4010 in New York. This would increase the demand for sterling in London and the supply in New York and would continue until the prices became the same.¹ Such arbitrageurs are not speculators since, except for a matter of moments, they have no open position in foreign currency. They make their profits from buying and selling foreign currencies, in the course of which they end in the same currency in which they started.

Two-point arbitrage results from an arbitrageur finding a spread in the price of his own currency in two markets, usually his own and one abroad. The resultant simultaneous purchase and sale of two monetary units in two market centres, described above, is the simplest form of exchange arbitrage. However, arbitrage can be more complicated when it operates

¹Or differed by no more than the cost of telegrams and interest.

through the cross rates.¹ For example, three-point arbitrage could involve the purchase of francs in New York, their sale in Paris against pounds, and the sale of pounds for dollars in either London or New York. Here, it is assumed that the rates for the franc are the same in Paris and New York, and for the pound in London and New York, but not for the pound and franc in London and Paris. In this situation, a three-point deal by an arbitrageur in New York would accomplish what two-point arbitrage in francs and pounds would do from either London or Paris.

Thus exchange arbitrage is the element that unifies the foreign exchange market. Since it is an essentially costless technique, arbitrage can bring about a consistent set of exchange rates which reflect underlying supply and demand conditions. As Kindleberger has written ² "A single market is defined as the place where buyers and sellers of an article trade it at an identical price. In the same market only one price exists. Where the same price exists continuously for the same commodity, there is one market. Where there are two markets and the costs of buying in one and selling in the

¹c.f. page 10 above.

²op.cit., page 447.

other are small, arbitrage will produce essentially one price and one market."

Interest arbitrage, the third major form of arbitrage, largely determines the relationship between exchange rates prevailing on the spot and forward markets. By the taking advantage of international differences in interest rates on comparable assets, it establishes simultaneous equilibrium in all forward markets, thereby linking spot and forward markets in an economic sense.

For the purposes of illustration, assume that rate on British Treasury Bills is higher than the rate on Treasury bills in America. American interest arbitrageurs, in the possession of liquid funds, therefore have an incentive to move these funds to London. They will buy spot pounds to purchase British bills, but also sell pounds (buy dollars) forward to cover their position. They will, want to cover forward for, should sterling's spot rate decline before the maturity of these investments, their interest-arbitrage gains, measured in dollars, will also decline, or even disappear completely as a result of an exchange loss on return of their funds to their own currency. Thus, to avoid such an occurrence, when they buy spot sterling, they will simultaneously sell forward sterling, with each forward contracts maturity set for the date the

corresponding investment will mature.

Because the rate of interest is higher in Britain than in America, a discount on the forward rate for pounds against dollars will develop as a result of the interest arbitrage. The reasoning behind this is as follows. As was seen, American arbitrageurs, to offset any exchange risk, sold pounds to their banks for future delivery in exchange for dollars at an agreed price. These banks, by making these forward contracts, have now assumed the exchange risk and are contracted to produce dollars in the future at the agreed rate. To cover themselves, the Banks will engage in swap transactions: at the same time that they buy forward pounds, they will sell an equal amount of spot pounds, thereby reducing their holdings of pounds and increasing their holdings of dollars. However, since interest rates in America are lower than those in England, the banks will sustain a loss of interest as a result of the switch. They will pass this loss on to Americans by altering the price at which they buy forward pounds from them; they will lower the price of the pounds so that the forward rate is at a discount relative to the spot rate.

Thus, if interest rates are higher in the foreign country than in the home country, the forward rate will be at a discount relative to the spot rate; if interest rates are

higher at home than abroad, the forward rate will be at a premium relative to the spot.

Since, in the example used here, the interest rate abroad is higher than in America, there will be a discount on the forward rate for pounds against dollars, leading to a loss on the forward exchange sale of pounds. For the arbitrage transaction to be profitable, the interest rate on Treasury bills in Britain must exceed that in America by more than the discount on the forward cover. This point becomes clearer if specific figures are attached to the above example.

Thus, assume that the per annum rate on 3 - month Treasury bills today is 5% in London and 3% in New York. Further, suppose that 3 - month forward sterling is selling at 0.6 cents less than spot. If the latter is at par, \$2.40, this means there is a discount of 0.25 from spot, or 1% p.a. rate of interest when expressed on an annual basis.¹ For the American arbitrageur, who wants to sell forward pounds to offset any exchange loss, this represents a cost to be deducted from the 2% p.a. interest differential in calculating his net return. As long as the implicit interest

¹This figure is determined as follows:

$$\frac{2.34 - 2.400}{2.400} * \frac{360}{90} = -0.01 = -1.0\%$$

rate, that is, the spread between the spot and forward exchange rates, is smaller than the explicit interest differential, the American will still have an incentive to buy U.K. bills, since there is an intrinsic premium on sterling. If, however, forward sterling's discount should increase to 1.2 cents, that is an implicit interest rate of 2% p.a. this intrinsic premium will disappear, and any incentive for arbitrage will cease.

Further, should the discount on forward sterling widen even more, so that it exceeds the interest differential, a reverse incentive will appear as a result of an intrinsic discount on sterling: British arbitrageurs will move funds to New York to take advantage of the even greater premium that can be earned on the forward sale of dollars, in spite of the attractive yield of London Treasury bills.

Therefore, in the circumstances of the example used here, movement of money into Britain will continue until the interest rate differential and the cost of forward cover (measured by the spread between the spot and forward exchange rates) are equal. Interest arbitrage will eventually ensure that this equality comes about: demand for sterling will increase the spot rate; forward sales of pounds will increase the discount on forward sterling thereby depressing the forward rate;

finally, the flow of funds into Britain will tend to lower interest rates in that country. Thus, in equilibrium, the forward discount will equal the interest differential.

Drawing on an analysis suggested by Grubel,¹ these relationships can be expressed in algebraic form. Taking i_d and i_f as the domestic and foreign per annum interest rates on comparable assets, r_t as the forward price of the foreign currency, r_o as the spot price, and t as the time to maturity of the forward contract expressed in days, then domestic funds will flow outwards into foreign securities whenever there is an intrinsic premium on the foreign currency, that is when:

$$i_d - i_f > \left[(r_t - r_o) / r_o \right] \frac{360}{t}$$

Funds will flow inwards whenever this inequality is reversed and there is an intrinsic discount on the foreign currency, that is when:

$$i_d - i_f < \left[(r_t - r_o) / r_o \right] \frac{360}{t}$$

There will be no flow of funds whenever the explicit interest differential is just equal to the implicit interest rate on

¹H.G. Grubel, Forward Exchange, Speculation and the International Flow of Capital (Stanford, 1966).

the use of forward exchange, that is:

$$i_d - i_f = \left[(r_t - r_o) / r_o \right] \frac{360}{t}$$

This last expression gives the well-known condition of arbitrage equilibrium known as interest parity.¹ It shows that there is a close relationship between the forward discount or premium on one currency in terms of another, and the difference in interest rates prevailing in the two countries. The forward exchange rate is said to be at "interest parity" whenever the interest differential and forward discount are equal." However, there are various factors operating in the real world, such as a rising opportunity cost of arbitrage compared to alternative uses of the same funds, or the possibility of exchange controls or moral suasion being used by the authorities to discourage all forward operations that are not purely commercial in nature, which will prevent exact equality.²

¹The precise condition of interest parity as given by Grubel is:

$$\frac{i_d - i_f}{1 + i_f} = \left[(r_t - r_o) / r_o \right] \frac{360}{t}$$

However, unless i_f is particularly large, the equation can be reduced to the simpler form used here.

²c.f. Egon Sohmen, The Theory of Forward Exchange (Princeton, 1966), pages 8 - 10.

This book also contains a useful graphical presentation of the link between spot and forward markets provided by interest arbitrage. c.f. pages 17-23

Having now discussed the basic theoretical components of the foreign exchange market and seen, in particular, the relation between the spot and forward exchange rates, and the vital role played by interest arbitrage, we are in a position to turn to an examination of the theory of official intervention - in the forward exchange market.

Chapter 2 - The Theory of official forward intervention.

Intervention in the forward market can be a very useful monetary technique for the authorities. A simple example will serve to illustrate this. Taking the situation of an appearance of a sudden deficit in the British balance of payments, and assuming that speculators are convinced a sterling devaluation is inevitable, then these speculators will wish to sell pounds both spot and forward. To conform with the rules permitting only a 1% movement round the spot rates par value, the British authorities will be required to support sterling's spot rate; the forward rate, however, may be allowed to decline, thereby creating an intrinsic discount on the pound.¹ In the way described above, there will be an

¹For simplicity, it is assumed that the forward rate had previously been at interest parity vis a vis the dollar. One can therefore be certain that there is already an explicit discount on the pound: with British payments in deficit, interest rates in London will probably be higher than in New York, therefore sterling's forward rate may be assumed to be lower than the spot rate.

outflow of funds¹ which will cause Britain to lose dollar reserves through the spot market to both arbitrageurs and speculators. However, if the authorities now support forward sterling by selling dollars forward, they can prevent such an arbitrage incentive from appearing or even induce an intrinsic premium leading to an inflow of funds.

As a result, market confidence will probably be increased and reserve losses reduced as pressures are diverted from the spot into the forward market. In fact, reserves will actually increase over time: as forward commitments mature, speculators will be forced to reverse their short positions and purchase spot sterling at a rate greater than the price at which they contracted to sell forward. The British authorities will thus profit at the speculator's expense by an amount equal to the number of forward dollars sold to speculators multiplied by the difference between the lower original forward rate and the higher current spot rate.

¹ This outflow arises from interest arbitrageurs finding it profitable to buy dollars spot and to sell it forward. The incentive for this comes from the depreciating forward rate for pounds making it cheaper to get back into pounds after liquidation of the investments in spot dollars.

However, such a policy of forward support could be disadvantageous. This would be so if, in spite of forward support, the authorities do still decide to devalue. It is the speculators who will then stand to gain: the government will lose an amount of dollars equal to the number of forward dollars sold to speculators multiplied by the difference between the original forward rate and the new, lower, current spot rate.

The fact that a policy of forward intervention can be both advantageous and disadvantageous to the authorities has led to a vigorous debate between economists, notably Tsiang, Auten, Aliber and Goldstein, over where the balance of advantage lies. It was this debate which finally, provided the much needed detailed examination of the theoretical issues involved in official forward market intervention.

In this chapter, I intend to outline and follow the arguments and counter-arguments between these writers so as to show the points at issue. In this way, the theoretical implications of forward intervention will be revealed. Moreover, the debate will go some way towards answering the questions regarding the efficacy and desirability of intervention that I posed at the beginning of this paper.

Keynes was one of the earliest proponents of forward

intervention. In his 'Treatise on Money',¹ he advocated central bank control of forward exchange rates so as to produce, when desirable, a spread between the effective interest rates for short-term investment in the domestic and foreign money markets. His main aim here was to keep a satisfactory international liquidity position, while avoiding any constraints resulting from an exclusive use of monetary policy to preserve external balance. By intervening when appropriate on the forward market, the authorities can avoid such constraints and gain a greater element of freedom for their domestic, counter-cyclical policies.

At the end of the 1950s, these early proposals of Keynes were taken up by some other British economists. Jasay and Spraos, in a number of journal - contributions,² criticized the policy of pegging the spot rate while allowing the forward rate to fluctuate freely. Examining the U.K.

¹ J.M. Keynes, Treatise on Money (London, 1930), Vol.2. pages 325-27.

² A.E. Jasay, J.Spraos and Anonymous, "Exchange Policy in the Forward Market", Banker, 1958.
 A.E. Jasay, "Making Currency Reserves 'Go Round'", J.P.E.1958.
 A.E. Jasay, "Bank Rate or Forward Exchange Policy," Banca Nazionale del Lavoro, 1958.
 J. Spraos, "Speculation, Arbitrage and Sterling," E.J. 1959.

exchange crises of 1956 and 1957, in which there appeared forward discounts on sterling much in excess of the interest differential (then in sterling's favour), they argued in favour of official intervention to reduce this forward discount and thereby offset the speculative attacks.

An illustration of the Jasay-Spraos position will serve to underline their arguments. Assume, first, the existence of interest-parity equilibrium, with the discount on forward pounds equal to the interest margin in London's favour. Then assume speculation disturbs this, in the form of uncovered forward sales of sterling, which leads to a discount greater than the interest differential. The authors then argue that it becomes profitable for interest arbitrageurs to sell spot and buy forward pounds, thereby causing an outflow of funds and a potential drain on the reserves. They maintain that although this spot sale, through the purchase of dollars, may not reduce exchange holdings immediately, the pressure of net sterling sales on arbitrage account can eventually force the pound to its lower support point, causing at least temporary losses of official reserves.

By the same logic, there will be a shifting of trade finance to London so as to take advantage of the lower net cost of borrowing. This covered borrowing will weaken spot sterling,

although strengthening the forward rate. Thus, the writers maintain the appearance of some speculative pressure in an unsupported forward market will depress the forward rate and induce covered and uncovered transactions adverse to the reserves. To avoid this, they argue for unlimited official forward support, through the purchase of forward sterling and the selling of forward dollars, until the excess discount is removed, thereby allowing speculation without loss of reserves.

This case for unlimited forward support was subsequently evaluated by Auten¹ who found it defective in some respects. In the first instance, he maintained some of their assumptions were questionable, while also regarding the available data from the crises of 1956 and 1957 as being too small to permit the testing of their hypothesis. His main criticism, however, was that the Jasay-Spraos case for unlimited support rested on questionable accommodating behaviour by speculators: it assumed, first, that the speculation proceeds under conditions of perfect knowledge and at least cost, and, secondly, that the removal of the forward

¹J.H. Auten "Counter-Speculation and the Forward Exchange Market" JPE 1961.

discount would cause speculation to be channelled into the forward market where it would do least harm. As Auten says, the former is not sufficient to induce the latter.

His counter-argument is that speculators, in determining their optimum behaviour, must consider not only the cost of speculating in a certain way but also the potential gain. The Jasay-Spraos second assumption is possible only if speculators consider cost; but, if rational, they will also consider the advantages to be had from speculation in the spot market. In a situation where the authorities' forward commitments are so large as to lead to suspicions of unhonoured forward contracts and therefore zero gains, Auten foresaw large spot market speculation as not being surprising, although it would be ruinous for the authorities.

He, therefore, offered the fulfillment of three requirements as being necessary to the success of a policy of unlimited forward intervention: the first was that the scale of official intervention must not be limited - temporary intervention, stopped under increasing speculative pressure, would only worsen the situation; secondly, there must be unquestioned sanctity of forward contracts so as to ensure the confinement of speculation to the forward market; finally, he believed the currency should never be devalued

since this would face the authorities with large losses. His concluding shot across the bows of the Jasay-Spraos argument was that, in their model: "either speculation is irrational (but inexpensive) for private operators or the rationality of the authorities giving such an opportunity to speculators is questionable."¹

Auten thus found their case for unlimited forward support to be unsatisfactory, believing that serious doubt must remain as to the case for such a policy. Further consideration will be given to Auten's above contributions in a later part of this paper; but, first, by way of contrast with the Jasay-Spraos proposal, an examination will be made of an article by Tsiang² in which he criticises unlimited forward intervention. Such an examination is also appropriate here for the reason that Tsiang's analysis was also subsequently criticized, and found seriously wanting, by Auten.

At the time when Tsiang was writing, he believed "a systematic theory of forward exchange, which explains precisely how the interplay of different types of operation

¹op. cit., page 55.

²S.C. Tsiang, "The Theory of Forward Exchange and the Effects of Government Intervention on the Forward Exchange Market," IMF Staff Papers, 1959.

jointly determine the forward rate, and how the forward exchange rate is linked to the spot exchange market, still appears to be lacking."¹ In going some way to remedy this defect, he presents a more comprehensive theory of forward exchange which he then uses to analyse official intervention. He agrees that the immediate effects of the latter are beneficial in that arbitrageurs current spot purchases of foreign exchange will be reduced, therefore leading to savings for the reserves. However, he sees certain deferred effects acting adversely on the reserves and, because of these, he argues that the case for intervention is not as strong as it might appear.

By way of illustrating his case, he posits a country facing speculative pressure which lasts for one year and then disappears. He then argues that a given amount of forward intervention in the first quarter would, by deferred effects on the spot market, necessitate double the original intervention in the second quarter, triple in the third, and so on. Not only would the growing scale of intervention be damaging but the accumulation of deferred effects on the spot market

¹op. cit., page 75 of introduction.

would fall in the first quarter of the following year when reserves would be low. Tsiang therefore sees forward intervention as postponing, but not reducing, the reserve drain.

Auten's subsequent criticism first concerned the supposed deferred effects on arbitrage demand. He argues that Tsiang's analysis of these deferred effects is faulty and therefore, that Tsiang's criticism of intervention on this ground is wrong. By quoting Tsiang on the nature of his lagged effects, and then giving an example, Auten shows the error lies in his only considering the effects of a single act of intervention rather than the effects of intervention continued with the speculative pressure. His conclusion would have been correct if limited to the effects of one act of intervention but they are not relevant for evaluation of a continuous policy of pegging the forward rate.¹

Turning his attention to the hypothesised deferred effects on the trade balance, Auten suggests Tsiang's treatment is subject to other objections. In his article, Tsiang

¹ Auten, in a useful footnote, shows that Tsiang's error lies in taking as the solution to his process analysis the derivatives of the equations for spot and forward exchange markets at time $t + n$ with respect to forward intervention at time t . (c.f. page 102-3 of Tsiang's article). A similar error would be to deny the existence of a national income multiplier because a single autonomous expenditure at time t had no effect upon income at time $t + n$ (n being large).

argues that intervention would, by reducing the forward premium, lessen the current improvement in the trade balance and therefore lessen the future supply of exchange in the spot market. His recognition of a possible trade - balance effect is, without question, an improvement over other analyses which fail to consider such an eventuality, but he is too specific about its size and sign. Auten suggests that, since a forward premium is equivalent here to a spot depreciation, Tsiang's treatment assumes that an exchange depreciation will always improve the trade balance. Should this not happen (in the event of an inelastic foreign price elasticity of demand), a forward premium would cause the trade balance to deteriorate: " the interest arbitrage mechanism would transmit more than current speculative pressure into the spot market, the lagged effects as contracts mature would be adverse and the case for forward intervention would be stronger."¹ Auten therefore concludes that Tsiang's case against intervention is wrong.

Thus, so far, we have examined one case for unlimited forward intervention and one case against while, at the same time, demonstrating Auten's criticisms of both. The latter concluded, at the end of his 1961 article, that the case for counter-speculation by the authorities in the forward market has still to be established. This conclusion prompted other

¹op cit., page 54.

economists to examine the issue, and it is to an evaluation and description of their arguments that we will now turn.

At the end of 1962, Aliber¹ attacked Auten's position, concluding that limited forward intervention would be useful and practical in defending a suspect par value. In his analysis, he assumes the existence of only two countries, Britain and America, so that when the dollar is strong, the pound is weak and vice versa. Both countries are seen as having developed money markets, with an active market for forward exchange. Therefore, substantial interest arbitrage flows will occur whenever a significant covered yield spread emerges in favour of short-term investment in one or other country.

If speculators feel the dollar-pound ratio of par values will be changed, Aliber envisages them going short of the weak currency by borrowing and converting it through the spot market and/or by selling it forward for the strong currency. Speculators may use both techniques but they will usually favour one, their choice being determined by relative costs. If fears of devaluation develop, the forward rate for the weak currency

¹R.Z. Aliber, "Counter-Speculation and the Forward Exchange Market: A Comment." JPE December, 1962.

will normally go to a large discount; in Aliber's model, this will lead to reserve losses by speculators finding it cheaper to go short through the spot market and by arbitrageurs being induced to shift funds into strong - currency assets on a covered basis. Thus, by intervening to prevent such a discount, Aliber argues that the authorities could channel most speculative sales through the forward market and also erase the incentive for a covered arbitrage flow.

Auten, although agreeing that forward intervention can check a reserve drain in the above way, feels that forward intervention during speculative pressure would be unwise.¹ Aliber, however, argues that this poses a false dilemma for the authorities. He claims Auten is too concerned about the volume of forward commitments that the authorities would have to make if they intervene. For Aliber, the prospect of such commitments rising to a substantial fraction of official reserves is insufficient reason for rejecting a policy of forward intervention; the key question is whether they would exceed the additional reserve losses that would occur without intervention. Whether the latter is successful or not depends, he believes, on whether speculative sales of the weak currency, through the spot and forward markets, will be smaller when the

¹c.f. Auten, op.cit. page 55 and above page 33.

authorities intervene than when they do not. Having posed the situation in these terms, Aliber then goes on to argue that such speculative sales will, in fact, be reduced by intervention.

If a devaluation or revaluation occurs, speculators who go short of the weak currency can expect to reap profits far in excess of the cost of taking the short position. Thus, for any given state of market sentiment, the speculative supply curve of the weak currency will be inelastic with respect to cost. Therefore, even if intervention cheapens the cost of taking the short position, the immediate increase in total speculative sales will be relatively small. However, forward intervention will reduce the short-run reserve losses of the weak - currency country since it will prevent arbitrage outflows and channel speculative sales to the forward market. The relative stability of reserves here will increase confidence in the authority's ability to defend the existing par value and therefore the speculative supply curve of the weak currency will not shift to the right to the extent it would without intervention.

Against this would be the markets knowledge that the authorities had taken on a large and growing volume of forward commitments but, if the speculative supply curve of the weak currency is inelastic, these commitments will probably be only

a little in excess of the additional loss of reserves which would occur without intervention. But, more important, a given additional loss in reserves would cause a greater loss of confidence than a slightly larger growth of official forward commitments. Therefore, Aliber concludes that the combined shift to the right in the speculative supply curves for the weak currency, in the spot and forward markets, will be likely to be smaller when the authorities adopt a policy of forward intervention than when they do not, and rests his case for such a policy on these grounds.

Goldstein, in an article published the following year,¹ sets out, as he says in his introduction, to make four points: first, that Aliber's criterion for successful intervention is "too severe"; second, that Aliber's argument implies that the authorities should intervene on a massive rather than on a limited scale, "an implication at odds with his preference for tentative intervention"; third, that official intervention in the forward market "is likely to be a powerful means of reducing short-term reserve losses under more realistic circumstances than Aliber assumes"; and, finally, that a policy of frequent use of intervention would still lead to problems for the

¹H. Goldstein, "Counter-Speculation in the Forward Exchange Market: Some further comments" JPE. October 1963.

authorities in the long-term. We will examine Goldstein's development of these points in turn.

Having reviewed Aliber's and Auten's arguments, a review which I made liberal use of above, Goldstein states that he finds Aliber's argument convincing for believing forward intervention is likely to meet his criterion for success - that is, as we saw, that the speculative sales of the weak currency would be smaller than the loss in reserves that would otherwise have occurred. However, he states that he regards this 'criterion' as being too severe: "intervention may still be desirable even if it causes speculators and others to demand twice as much exchange through the forward market as the authorities would lose through the spot market in the absence of forward intervention."¹ If forces influencing the international accounts justify the currency's present par rate, he sees events as bound to make speculators lose heart and induce them to cover their short position. Thus, Goldstein argues that the authorities can unwind their short position without any additional loss in reserve in excess of the current and capital account deficit which may exist.

¹op cit., page 496.

Turning to his second point, Goldstein advocates the use of bold, rather than, tentative intervention on two grounds. He regards as inappropriate the use of such techniques as a credit squeeze, or direct controls on capital and imports to prevent any loss of confidence if domestic spending is inadequate, if the underlying payments position is satisfactory and if the possibility of an exchange rate change is remote. Aliber's analysis, under the above conditions, would seem to support bold intervention by the authorities to check any speculative loss of reserves: in fact, in the article already referred to, he merely favours a policy of tentative intervention.¹ Goldstein, however, argues that if the latter can cut losses by a certain amount, surely a policy of bold intervention would be preferable, to obtain an even larger reduction of reserve losses. Further, he argues that the appearance of a forward discount on the weak currency, substantially greater than the interest parity, would be likely to lead to a weakening of market confidence. Bold intervention, by preventing such a discount could sustain, rather than weaken, confidence and thereby alleviate the speculative pressure.

¹ Aliber, op.cit., page 613.

Although these would seem quite viable arguments, there would still appear to be certain limits to the price at which the monetary authorities should be prepared to supply any quantity of forward exchange. As Jasay has indicated in an article not previously made reference to,¹ they should not peg the weak currency's forward rate at a premium. If such a policy was pursued, and speculative forces were present, there might be an impairing of confidence in the existing parity. Operators in the market, feeling that the authorities were displaying desperation by pegging the weak currency at a premium, might intensify their speculation, thereby inducing a flight of capital through the spot market. Further, the existence of a premium would probably mean the authorities would sustain a book-keeping loss when contracts mature. Thus, it would be wise for the authorities to peg the forward rate at a level where little interest arbitrage occurs, but where it would still force speculators to make some loss. Such a policy would imply some adjustment, by the authorities, of the pegged forward discount as changes occur in the level of

¹A.E. Jasay, "Forward Exchange: The Case for Intervention," Lloyds Bank Review, October, 1958.

interest rates in the two countries.¹

Goldstein's third point is forward intervention may be a useful policy under more realistic conditions than Aliber posited. In the latter's model, a forward discount on the weak currency, caused by speculation, leads to reserve losses by inducing outright speculative sales of the currency in the spot market and covered interest arbitrage outflows. Goldstein maintains that these losses may be less in reality than those caused by leads and lags, and increases in the volume of trade financed in the weak-currency country. Specifically, he suggests three reasons "for believing that reserve losses through outward covered interest arbitrage are much smaller than Aliber suggests."² Firstly, many strong -

¹In consideration of the above, footnote 6 of Aliber's article (op.cit., page 613) is of particular interest.

"The case for forward intervention is not the same as the case for pegging the rate at a particular level - the authorities may feel it appropriate to suit their policies to speculative activity, permitting the discount to increase as the pressure increases. Thus, they might absorb part of the pressure, allowing some of it to fall on the rate and some on the reserves. The case against pegging the forward rate, however, is different from that for refraining from intervening in the forward market."

²op.cit., footnote 11, page 497.

currency countries do not have mature money markets capable of absorbing large inflows of foreign funds; secondly, several such countries prevent or limit any foreign purchase of money - market assets denominated in their currencies; and, finally, he believes that forward cover, at quoted rates, may be difficult, if not impossible, to get for any large flow of funds "since forward markets usually become very thin during periods of uncertainty."

Jasay and Spraos, in their earlier articles,¹ have already analysed leads and lags. Goldstein, however, regroups these under different headings to permit easier consideration of their effect on forward intervention. If exporters or importers anticipate exchange rate movements, they may lead or lag their transfers and payments of foreign currencies so as to make a profit, or hedge against a possible loss, in terms of the domestic currency. There are four possible situations here: exporters receiving payment in a strong foreign currency; importers making payment in a weak foreign currency; exporters receiving payment in a weak foreign currency, and, lastly, importers making payment in a strong foreign currency.

Considering the first two, under the collective term

¹c.f. above, page 29.

of speculative lags, Goldstein shows that exporters and importers will be motivated to lag their transfers and payments so as to earn a speculative profit through a change in the par value of the spot rate. This will cause an increase in the reserve drain of the weak-currency country and affect the spot rate in a manner analogous with pure speculation in the spot market. Spraos argues that this speculative lagging can be discouraged by the authorities pegging the forward rate - those exporters and importers who normally lag could then take equivalent short positions at a lower cost in the forward market. Goldstein, though, suggests that such traders may not be so rational, arguing that speculation, as mentioned above, is often regarded as unpatriotic, whereas lagging is merely sound business!

Taking cases three and four, under the title of hedging leads, such traders will incur large losses, if the weak currency is devalued, or the strong currency revalued, between the time the contracts are fixed and the time payment is received or made, unless they hedge. But, as the forward price of the weak currency is pushed to a large discount, such forward hedging will increase in cost. It will then become cheaper to hedge by borrowing the weak currency and converting the proceeds in the spot market, repaying the amount borrowed

later either with the proceeds from the sale of exports or the funds from import sales. Goldstein argues that forward intervention is a powerful technique to reduce the volume of these hedging leads. If the exporters and importers can hedge more cheaply in the forward market than in the above ways, they will probably do so. Thus, he says, by selling the strong currency forward at a relatively small premium, the authorities will be able to eliminate nearly all the short-run loss of reserves. He further suggests that such intervention might also increase the reserves through its impact on the relative volume of trade financed in the weak- and strong - currency centers.

Goldstein's final point concerns what he believes may be long-term problems arising from a policy of forward intervention. Before considering this problem specifically, he advocates that, before any intervention, the authorities must be certain that they will not devalue or that the strong-currency country will not revalue, since either would lead to large losses. He therefore sees the desirability for close co-operation between both authorities, in the form of joint operations. Einzig, however, in an article published a year earlier,¹ claims that forward pegging would be unwise, even

¹P. Einzig, "The Relation between the Practice and Theory of 'Forward Exchange.'" Banca Nazionale, Sept. 1962.

if there was no possibility of such a devaluation or revaluation, and Goldstein notes this difference of opinion. Einzig's objection is that the authorities can never be certain that the greater portion of their forward sales would be made to speculators.¹ Many buyers may be persons or companies using the forward market to avoid, permanently, losses on investments in the weak-currency country. In such a situation, the authorities would face a large drain in reserves as their forward contracts mature. The authorities, he says, would therefore be imprudent to make forward sales which even come near their existing reserves.

As Goldstein points out,² the validity of this objection to unlimited forward support depends on whether the authorities are able to find out who the final buyers of forward exchange are. Since the majority of forward sales would be made to commercial banks acting as intermediaries, who normally are in close co-operation with the government, it would therefore be reasonable to suppose, Goldstein contends that the authorities could obtain this information. This would appear, however, to be still very much an open question,

¹That is, persons or organisations who do not aim to make a "permanent" transfer into a strong - currency asset and who, accordingly, do not present a threat to the reserves.

²Goldstein, footnote 11, page 499.

depending on the relationship of the banking system to the domestic government.

Having considered this point, Goldstein goes on to state that, although forward intervention may be a useful weapon in the short-run, it may lead to certain long-term problems, in that the market may come to expect immediate forward intervention whenever speculation produces pressure on the forward rate. This may not always be possible, he suggests, due to failure to renew the joint intervention which we saw previously as being necessary to the success of such a policy. The resulting large discount on the forward weak currency may then induce even greater speculative pressures than would have occurred if the market had not experienced any intervention. Judging from the "personality" of money markets, this would seem a valid warning.

Aliber, in a brief comment on this important article,¹ shows that the fundamental difference between Goldstein's position and his revolves around the case "where there is reasonable doubt that the authorities will be able to maintain their exchange rate parity in the foreseeable future."²

¹R.Z. Aliber, "More about Counter-Speculation in the Forward Exchange Market, JPE 1963.

²Ibid, page 589.

Goldstein's position, as we saw above, is that there should be no intervention if there is a substantial risk of a change in the parity; if the authorities do intervene, and the spot, par value does change, they will face a large loss on their outstanding forward contracts. However, if there is no risk of such a change, he advocates almost limitless intervention.

Aliber's position, as we also saw, is that the government should continue forward support even if it appears that the parity might change. Although he agrees that the authorities will lose on their outstanding forward contracts if the parity is altered while they still have an open position, he, nevertheless, contends that the latter is not likely to be as large as the decline in their reserves would have been if they had not intervened. He therefore regards forward intervention as being more likely to maximise revaluation profits, or to minimise losses, if the exchange rate is altered, more so if the authorities had not supported the forward rate.

Aliber, displaying welcome modesty in this area of obvious uncertainty, admits that the difference between these two positions may be due to the fact that his evidence is too fragmentary or to his incorrect interpretation. He concedes the possibility that the open forward position may be greater than the loss in official reserves in the absense of

intervention; Goldstein assumes this is so, but fails to say why. He focuses entirely on the losses resulting from the open position whereas Aliber maintains the relevant comparison "is between the size of the official position, and the difference between the changes in the official reserves if the authorities do intervene and if they do not intervene."¹ Aliber's concluding point in this debate is that it would be unwise to advocate, as Goldstein does, the government adopting a policy of unlimited forward intervention if there is little possibility of an exchange-rate change and no intervention at all if a change seems likely. The government must support its domestic currency with the least loss of reserves, until it is decided to change its par value, and he sees forward, rather than spot intervention, being more effective here. But, to withdraw from the forward market if the situation deteriorates would, he believes, accentuate the speculative pressure.

There was relative quiet, in this debate over the desirability and efficacy of forward intervention, for the next three years until Goldstein made what is, up until the time of writing, the final contribution. Writing in 1966,² he

¹ op.cit., pages 589-590.

² H.N. Goldstein, "Further thoughts on official support of the forward exchange rate," QJE 1966.

begins by restating Aliber's argument in a formally elegant fashion.

Assuming the existence of a country Z, whose currency he calls zengo, he first identifies the loss sustained by the government when it first supports the forward rate and then devalues, as $F(d/1+d)$, where F is the number of forward dollars sold by the authorities, and d is the percentage by which the devaluation of the zengo increases the zengo price of the dollar. Similarly, he states the loss sustained when the government refrains from supporting the forward rate and then devalues, as $X(d/1+d)$, where X is the number of dollars sold to speculators through the spot market that return at the new spot rate. Thus, the comparison is between $F(d/1+d)$ and $X(d/1+d)$.

Since d is seen as being the same in the two instances, Goldstein contends that the fundamental question posed by Aliber's analysis is whether $F \gtrless X$. In his view, $F < X$ since "The pressure to devalue will be greater in the absence of forward intervention. For one thing reserve losses will occur at an accelerated rate. For another the degree of imbalance is likely to seem more severe...Thus the authorities may feel that their underlying position is worse than it really is

and devalue at an early date... [But] if the authorities intervene, they will not be forced to the wall so soon and there will be a powerful temptation to delay a devaluation in the hope that something will turn up. But, by hypothesis, nothing does. Thus the eventual adjustment in par values is likely to occur with speculators having larger short positions in the suspect currency than when the authorities do not support the forward rate."¹

Goldstein therefore repeats his earlier conclusion that the government should not pursue a policy of forward intervention when a parity change seems likely. However, two arguments can be made against such a conclusion.

First, Goldstein's analysis depends on the assumption that d will be the same in the two situations. This is doubtful; Goldstein himself concedes that the degree of payments imbalance is likely to seem greater when the government does not intervene. This means not only will they devalue earlier, but also by a greater amount than if they do support the forward rate.

Secondly, the probability of devaluation is unlikely to be the same, in contrast to Goldstein's implicit assumption. Ideally, a devaluation should be a rational decision, taken

¹op. cit., pages 450 - 454.

cooly in the light of all necessary information; in reality, it is often taken in unseemly haste, as almost a panic reaction merely to the reserve losses. As was seen above, the latter will take place at an increasing rate if the authorities do not intervene, thus making them see the situation being worse than it really is. It would therefore seem more probable for the government to devalue if they do not intervene than if they were committed to forward support.

Therefore, the crucial question posed by Aliber is not, as Goldstein deduced, whether $F \gtrless X$ or $F(d/1+d) \gtrless X(d/1+d)$. It is whether the expected value of financial losses is larger if, the government does or does not intervene,¹ that is, whether $pF(d/1+d) \gtrless p^1X(d^1/1+d^1)$ where p is the probability and d the size of devaluation with a policy of forward support; and p^1 and d^1 the same without intervention. It is quite probable that $F \gtrless X$; but also likely that $p < p^1$ and $d < d^1$. Thus, it is impossible to state categorically which of the two sides of the expression will be greater; the special characteristics of each situation must be known before each variable can be gauged.

Having now completed the exposition and analysis of this debate over forward intervention, what conclusions are we able

¹ It was Cohen, in his book already referred to, who first pointed out this aspect of Goldstein's analysis.

to draw, particularly with reference to the questions posed at the beginning of this paper? Ultimately, as Cohen has written, it would still seem "a matter of judgement for the authorities themselves to determine whether to intervene in the forward market or not." Such a decision can only be taken with regard to the government's balance - of - payments policy. The debate between Aliber and Goldstein has shown, if nothing else, that there are no certainties in this matter of forward support, particularly if the government faces the possibility of having to devalue. However, as international economists, we should reach some conclusions after analysis of the available material and, on the basis of these, advise the government accordingly. An indeterminate, non-committal conclusion may be academically convenient but, for a government faced with taking decisions, it is practically useless! Thus, some albeit tentative conclusions with regard to the use of official forward market intervention would seem appropriate.

First, for an exchange authority that puts a very high priority on a maintenance of its existing spot value, support of the forward rate may be looked on as essential. Secondly, for a currency under temporary pressure from an outflow of short-term capital, forward intervention would seem to be a prudent policy providing the monetary authority is confident it has sufficient reserves to maintain the rate. Such a

situation would arise, for instance, if there was a temporary deficit which, if successfully financed, would likely to be followed soon by a surplus. The technique of forward support would be ideal here as a counter-influence; it would pull the covered arbitrage margin in the country's favour, without an equivalent increase in domestic interest rates.

However, in the third case which is less clear-cut, for example, where pressure on a currency may reflect a basic deficit rather than, or as well as, a temporary capital flight, forward intervention is of more dubious value. If the monetary authorities used forward intervention to counter the drain of funds, they would be strengthening the odds against a later devaluation; to suddenly reverse the policy later would be interpreted as an impending abandonment of the spot parity.

If, in these circumstances, the authorities did resort to devaluation, they would be committed to deliver large quantities of foreign exchange at the pre-devaluation rate. It is true that they would have had to deliver the exchange at this rate, and without the forward discount, even if the hedged funds had been withdrawn before the devaluation but, there are two vital differences here: the first is that the amount of these obligations may now be larger, to the extent that forward commitments were run up beyond the point to which

outright losses to the reserves would have been permitted; the second is that there will be a formal, book-loss for the exchange fund which the central bank will be loath to accept. Because of all this, forward intervention in such a case would seem to be an uncertain expedient. These seem the most viable conclusions to be drawn from the above theoretical analysis. To measure their actual validity, attention will now be turned to forward intervention as practiced in Britain and America.

Part II.

Chapter 3 - Recent British policy with regard to Forward Intervention.

Although the greater part of this chapter will be concerned with official intervention in the forward exchange market between 1958 and 1967, it would first seem desirable, for the sake of perspective, to outline briefly the prior development of government policy on this issue since its conception and to see how forward intervention represented a part of the historical development of greater government intervention in the exchange market in general.

Most western central banks practiced a policy of intervention in the Foreign Exchange market during the 1920s, this intervention sometimes taking the form of operations in the forward market. However, the Bank of England was the exception here, in that it did not even have a foreign exchange department. Instead, it adopted a neutral attitude towards the foreign exchange market, relying instead on the orthodox weapon of interest rate changes permitted under the Gold Standard. This policy was still retained during the 1920s, when sterling came under increasing pressure, but a foreign exchange department was eventually established to accommodate

the needs of overseas central banks which had transferred sterling funds to London.

In 1931, this orthodox neutrality was abandoned in the face of strong selling pressure on the pound. It was decided to protect actively the Gold Standard against the latter, rather than to continue with the previous policy of non-involvement. The Bank of England, for the first time, operated extensively in the foreign exchange market, these operations including forward involvements comprising the outright selling of forward dollars. This first attempt at official forward intervention in Britain has been subsequently criticised by Einzig¹ as being ill-conceived and as accentuating, rather than reducing, the pressure on sterling. Although the precise details of his criticism do not concern us here, it is of interest to note his conclusion for it demonstrates, in a practical context, the conclusions, with regard to a policy of intervention, which were suggested at the end of the last chapter:

"In 1931, there was a fundamental disequilibrium working against sterling which was considerably overvalued, and at the same time there was a panic flight of capital on a scale that was entirely without precedent. In face of such sweeping pressure, any technical device was a mere pill against an earthquake...[and]...the attempt to

¹P. Einzig, A Dynamic Theory of Forward Exchange (New York, 1967) pages 465 - 467.

save sterling by [such] technical devices was fore-doomed to failure." ¹

The lesson of this verdict is all too - evident to us now for the period 1964 to 1967 but, as is so often the case, it appears as somewhat belated retrospective wisdom!

The attempt to save sterling proved in vain and, in September 1931, Britain devalued sterling and abandoned the Gold Standard.

Britain's defection from the gold standard is interesting from the point of view of this paper in that it led to the development of a technique of partial stabilisation of sterling by official transactions. From September 1931 until 1940, the monetary authorities did not commit themselves to maintain a fixed gold value of the pound, but instead aimed at the ironing out of short-term fluctuations. This new policy was carried out by the Exchange Equalisation Account, which was established in 1932 and administered by the Bank of England on behalf of the Treasury. It had as its objective "the prevention of an abnormal rise in the exchange rate of the pound in response to an inflow of short-term funds, and also that of neutralising the impact of the inflow on the domestic market."²

¹ Ibid, page 467.

² S. Horie, The International Monetary Fund, Retrospect and Prospect (New York, 1964) page 28.

To achieve this, the Account was given an initial stock of sterling assets in the form of British Treasury Bills. It used these to buy gold and foreign currencies whenever the pound seemed to be appreciating excessively; in doing so, it increased the supply of sterling and thus depressed its value. Later, when the Account had accumulated, by such transactions, a substantial stock of gold and foreign currencies, it was able to operate on a two-way basis and either exchange its sterling for gold and foreign currencies, when the pound appreciated excessively, or exchange its gold and foreign currencies for sterling, when the pound depreciated excessively.

Britain's Account represented one of an imposing proliferation of Exchange Accounts which were set up in the period 1932 to 1936. All aimed at intervention in their own exchange markets as a means of pursuing a policy of economic nationalism, and there was considerable rivalry between them. However, the need for co-operation soon became apparent since, for the operation of a stabilisation fund, it is essential "that the gold value of the currencies of the countries concerned should be secured as much as possible, and that no alteration of an exchange parity should be made arbitrarily by any country but with the co-operation of all concerned."¹

¹Horie, op. cit., page 30.

This latter point is underlined by the fact that the arbitrary depreciations, of sterling in 1931, of the U.S. dollar in 1933, and of the French franc in 1936, led to a final position, in 1936, in which the exchange relationships of the three major currency blocs¹ were little different from those existing before 1931.

Further, as Alan Day has written:

"Once one government refuses to accept the rule of the market but tries to manage its exchange rates with the other leading centres, then the governments of the other centre countries must either accept the leadership of the first government or co-operate with it in deciding together on exchange rates that are mutually advantageous. If one major country 'manages' its exchange rate (in the sense that the rate does not simply follow the trends of non-speculative demand and supply), then the other countries must either accept the management of the first or actively manage their own; if they choose the latter course they cannot manage in a way which is inconsistent with the policies of the others." 2

Thus, once managed currencies are introduced, they tend to spread and to make international co-operation necessary. The vindication of this conclusion came with the Tripartite Monetary Agreement between Britain, France and the United States in 1936. This was primarily concerned with technical matters

¹ For a description of these blocs, reference should be made to W.M. Scammell, International Monetary Policy. (New York, 2nd. Edition, 1964) pages 242 - 244.

² A.C.L. Day, Outline of Monetary Economics. (Oxford, 1967), Chapter 39, page 511.

of co-operation between the Exchange Accounts of the three countries, but it was also important in that it accepted the need for effective international co-operation in a managed exchange rate system.

Under this Agreement, the three signatories guaranteed that their stabilisation funds should be convertible into gold at the rates fixed for their holdings of those currencies. However, the values of gold were not fixed and, if the need arose in the economy of the country concerned, this commitment could be cancelled at 24 hours notice. The agreement therefore gave priority to the domestic economy of a country. Nurkse has probably best assessed the Agreement in the following comment:

"As a general rule such exchange adjustments as may prove necessary after the establishment of an initial system should be made by mutual consultation and agreement. It ought to be an elementary principle of international monetary relations that exchange rates should not be altered by arbitrary unilateral action. The Tripartite Agreement was a belated and half-hearted admission of this principle."¹

The Tripartite Agreement was also important in that it was a forerunner of the IMF System as established at Bretton Woods in 1944. The principle of all countries getting together and guaranteeing their mutual parities, should facilitate the stabilisation of each other's exchange, and this was a fundamental premise of the IMF system.

¹R. Nurkse, League of Nations, International Currency Experience, 1944, page 141.

From 1931 to 1938, the British authorities abstained from the forward market, the Exchange Account merely operating in the spot market. It was not until the crisis which followed the Munich Agreement in 1938 that this policy of abstinence was changed. The Account made use of swap operations, in the form of buying spot dollars against the sale of forward dollars, to meet the strong pressure which developed against sterling. The latter was a response to the increasing burden of re-armament and to the concern over the political future of Europe:

The aim of this intervention was to reduce the premium on forward dollars, and thereby prevent any loss of gold arising from a withdrawal of covered U.S. funds from London and from outward arbitrage induced by a large intrinsic discount on sterling. By this means, the British authorities were successful in replenishing their decreasing dollar reserves, even though this was achieved at the expense of increasing forward liabilities. However, it proved impossible to continue this policy for an extended period as a result of a revival of pressure on spot pounds. Thus, at the end of 1938, the government terminated these swap operations and, in their place, introduced an unofficial embargo on outward arbitrage by domestic banks. Further, in the early part of 1939, an additional series of embargoes were established to discourage

speculation and arbitrage in sterling. Yet, although this policy of forward intervention was not continued for very long, it was important in that it represented the first signs of a willingness on the part of the authorities to extend stabilisation policy to the foreign exchange market as a whole.

In spite of the fact that the embargoes were not completely successful, sterling's forward discount was regarded as being smaller than it would otherwise have been in view of the impending outbreak of hostilities. This was mainly due to the official sale of forward dollars which occurred through 1939, but it is safe to conclude that the embargoes also contributed towards the success of this policy.

The total prohibition of Forward exchange dealings during the second World war and the early post-war years, and its gradual relaxation in subsequent years, represents an important period in the development of this market. As Einzig has written "Even though the ban on forward dealings had never been absolutely world-wide - operations on a limited scale continued in New York and in some neutral markets - the reduction in the volume of operations and in the significance of the market was so drastic that the period of restrictions divides the history of Forward Exchange sharply into two distinct periods".¹

¹ op. cit., page 471.

Although these restrictions continued to operate during the period of the war and the early post-war years, the needs of genuine commercial trade were met by means of official forward facilities. However, the latter were widely regarded as inadequate since they were only available for periods of up to six months and, further, for only a limited number of currencies. Even the authorities themselves were far from content with the system since it was used only on a one-way basis by traders. For example, all importers would make use of the facilities when sterling was under speculative attack, but exporters did not sell forward to the Bank of England the foreign currency proceeds of their exports. Such a unilateral use of the system must have forced the British authorities to sustain large losses at the time of the sterling devaluation in 1949 and also throughout the series of early post-war franc devaluations.¹

Forward exchange dealings were resumed again in 1951 and, for the following six years, the market was free from official intervention. However, during the sterling crisis of

¹For an official view of this unsatisfactory situation, see the Treasury Memorandum and oral evidence to the Radcliffe Committee, to which detailed reference will be made below.

1957,¹ the authorities reversed this policy and engaged in substantial forward sales of dollars towards the end of August. This was to counteract the widening margins on forward dollars and Deutschemarks which appeared during that month and had induced heavy outward arbitrage. As a result of this forward intervention, the margin did narrow considerably for a few days but there is evidence that the government regarded the operations as being too costly in terms of heavy forward commitments. This is revealed by the fact that, although the policy of official support was used intermittently during September until Bank Rate was increased, it was done on a smaller scale.

With the increase in Bank Rate, the need for forward intervention ceased and the policy was terminated. One cannot regard the policy as being a success, since it merely concealed for a short period the full extent of the losses resulting from the pressure on sterling. However, the policy was advantageous

¹ Unlike previous crises, the 1957 crisis was entirely one of confidence. The main cause was a bout of currency speculation, triggered off by a partial devaluation of the French franc in August. Rumours were circulating that the D.M. was to be revalued and sterling might be depreciated as part of a general realignment. For excellent descriptions of this, and for the part played by the so-called Kuwait Gap, reference should be made to:

S. Brittan, Steering the Economy, The Role of the Treasury, (London 1969), pages 128 - 131. J.C.R. Dow, The Management of the British Economy, 1945-60 (Cambridge, 1964) pp.96. - 103.

to the extent that it testified to the final demise of the British authorities refusal to deal in forward exchange. From then on, the question became one of expediency rather than principle, although opposition to unlimited, large-scale intervention was still very strong in official circles.

Having outlined British experience with regard to official support of the forward market up until 1957, one can see how such intervention probably represents the final stage of increasing willingness on the part of the authorities to influence the foreign exchange market. The first stage, between 1932 and 1936, was the setting up of the Exchange Equalisation Account and its use for economically nationalistic purposes; the second stage, in 1936, was the Tripartite Monetary Agreement, which established principles for government intervention; the third stage was the extension of these principles, and their formalisation, at Bretton Woods in 1944, and the last stage was a willingness to use the tool of forward exchange intervention as part of the general policy of exchange stabilisation.¹

¹ This idea of forward intervention being part of a development process arose from an extended conversation with Dr. W.M. Scammell, Professor of International Economics at McMaster University, Canada; I am grateful for his letting me incorporate this idea into my paper.

It is rather difficult to date this latter stage exactly since it developed slowly from its tentative beginnings in 1938. Although the willingness to utilise this policy was certainly present in 1957, it was still viewed with suspicion, especially by the Treasury and Bank of England. It was not until the advent of the Labour Government in 1964 that this willingness was extended to a firm policy of unlimited forward support for an extended period. However, before entering into an analysis of these matters, it would seem useful, and appropriate, to examine first the technical operation of exchange stabilisation funds in the exchange market, since this will provide the necessary background to any subsequent examination of forward intervention.

The mechanism developed here, for the purpose of illustrating exchange intervention for stabilisation purposes, is reproduced from Mundell's collection of his own writings on international economics.¹ It is of particular relevance here since it shows how movements of a country's exchange rate are constrained within the limits set by the I.M.F.²

¹R.A. Mundell, International Economics. (New York and London, 1968), Chapter 10, pages 147-149.

²c.f. above, page 2 footnote 1.

The diagram, on the following page, shows the demand and supply of dollars in exchange for Deutschmarks. The situation is simplified by taking dollars to cover all foreign exchange and all transactions involving it.¹ DD is the demand curve for dollars by German residents, assuming that the DM price of German goods and the dollar prices of foreign goods are constant. It is negatively sloped since, the higher the exchange rate (i.e. the more DM it takes to buy one unit of dollars), the more expensive American goods and services become for German buyers, and the smaller are the latter's purchases - the lower the quantity of dollars demanded. For any given price, the area under the curve and the ordinate from the y axis represents the total sum in DM that Germans are prepared to pay for the quantity of dollars represented by that price and the curve on the X axis.

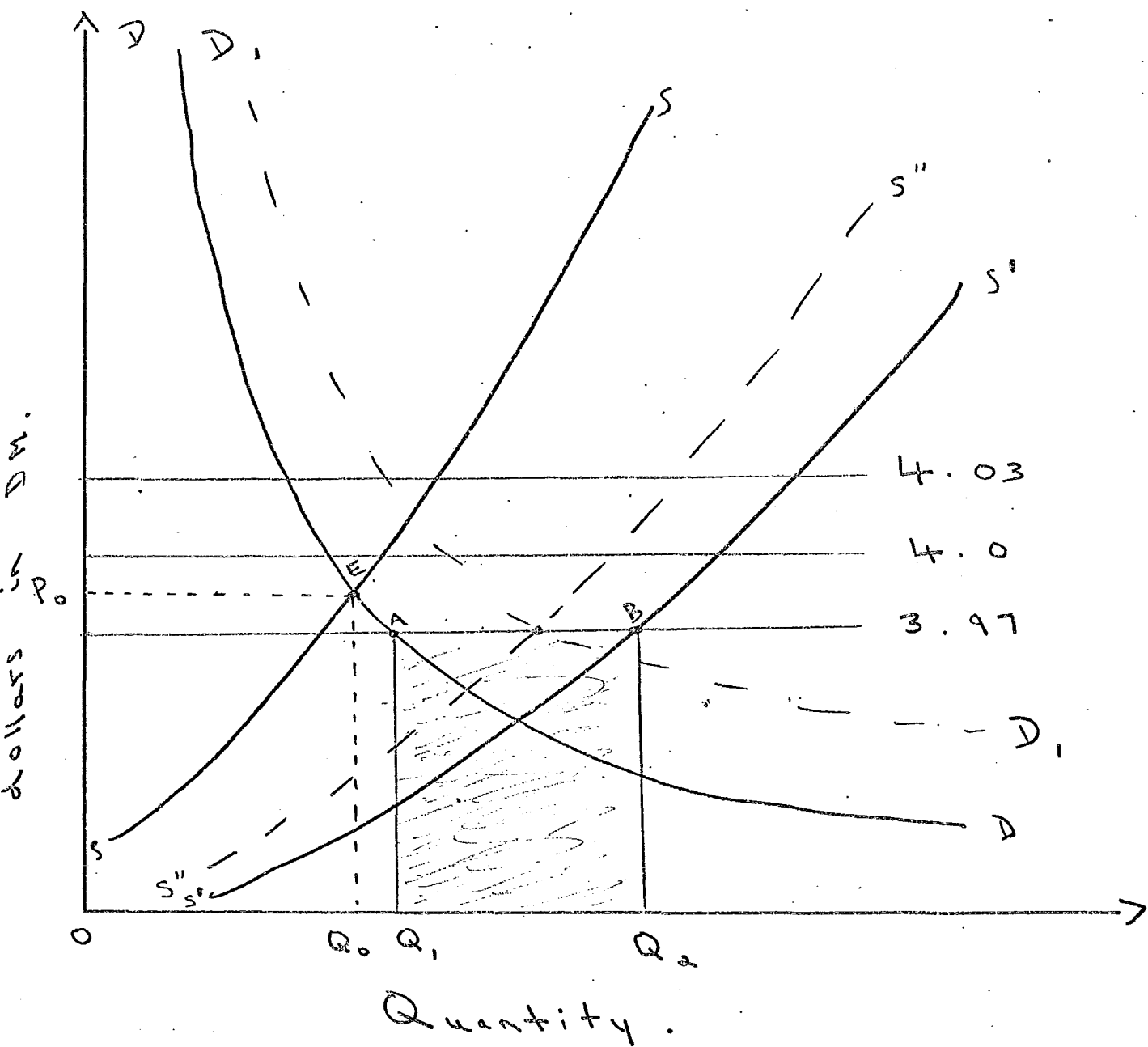
The curve SS shows the supply of dollars offered by the rest of the world for DM at various exchange rates. It is positively sloped since, the higher the exchange rate (i.e. the more DM a foreigner receives per unit of his dollars), the cheaper domestic goods and services appear to foreigners, and the higher is the latter's quantity of foreign exchange supplied. SS is, therefore, the supply of dollars and the demand for DM, this latter being described by the area at any price/quantity

¹Including those in connected forward markets.

coupling on the supply schedule.

If the market were free from intervention by the monetary authorities, the price would be P_0 , determined by the intersection at E of DD and SS . At this price, Q_0 of dollars is exchanged for P_0Q_0 of DM. It is assumed that the initial price P_0 is within the support points, which are taken to be $\frac{3}{4}$ of 1% below and above the par value. Thus, it is within the range DM 3.97 - 4.03 centred on a parity of 4.0, using the IMF par value prevailing in 1966.

Suppose now that, in the rest of the world, there is an autonomous increase in the demand for German goods so that the supply of dollars is increased at any given price. SS now shifts to the right to some position such as that of S^1S^1 . In a free market, this would mean that the price of the dollar would fall below the lower support point of 3.97DM, but, under IMF rules, this the German authorities are obligated to prevent, intervening in the market at the rate DM. 3.97 = \$1 (if not before) to prevent further appreciation of the DM. At this lower support point, the excess supply of dollars is AB , an amount equal to an excess supply of dollars of Q_1Q_2 . The excess demand for DM is equal to the rectangle AQ_2 shaded on the diagram. In order to stabilise the rate at DM.3.97 = \$1, the German authorities will buy up the excess supply of dollars (Q_1Q_2) and supply to the exchange market AQ_2 of DM, this



buying and selling being achieved through some form of an Exchange Fund. Q_1Q_2 would then represent the German balance of payments surplus in \$, while the area AQ_2 represents the German surplus in DM.

This intervention by the German authorities not only raises the rate to the DM. 3.97 support point, but also produces forces which tend to correct the disequilibrium in the market. The acquisition by the German central bank, or exchange fund, of the excess supply of dollars must, in the absence of a creation of additional dollars in the rest of the world, reduce spending in the world using dollars. The S^1S^1 curve is, therefore, shifted to the left as prices fall in the rest of the world or interest rates rise. In Germany, the addition to the supply of DM by the German central bank will serve to shift DD to the right as German prices rise or interest rates fall. After this adjustment, a new equilibrium would be established at the intersection of D^1D^1 and $S^{11}S^{11}$.

For the sake of completeness, it should be noted that the last phase of this process may be omitted in practice. It is likely that the German authorities will be anxious to prevent the working of these automatic adjustment forces on their domestic price level. It is more likely that such adjustment would be prevented by counter actions by the central bank and that, in the absence of the adjustment phase in the

diagram, there will be a change in the level of reserves held by the two countries.

Thus, having seen how official intervention and adjustment works in a Narrow Band Exchange Market for a country's spot currency, and traced the growth of British intervention in both spot and forward markets prior to 1958, we are in a better position to examine the subsequent development of policy on forward support and to appreciate the turnaround in official attitudes which occurred between 1958 and 1964.

At the time of the Radcliffe inquiry, the British monetary authorities were opposed to intervening in the forward exchange market (although, as we saw above, it had occasionally done so in the past), and in particular to holding forward rates fixed in an exchange crisis. In November 1964, however, when exchange market participants came to doubt existing par values, the Bank of England not only increased Bank Rate from 5% to 7%, but also intervened in the forward market. This it continued to do, at least from time to time, until mid - November, 1967 when, for some unknown reason, it withdrew from the market. Thus, as Kareken put it in his chapter on Monetary Policy in the Brookings Report on the British economy, "between June 1958 and November 1964, the monetary authorities changed their collective mind."¹ An analysis will now be made

¹R. Caves etc, Britain's Economic Prospects, Chapter II. page 95.

of this change in policy; the arguments put forward in 1958 and 1964 to justify the respective attitudes towards official intervention will be outlined, and compared and contrasted for any defects they may contain.¹ Finally, I will then try to ascertain whether the British authorities were correct to continue this newly-acquired policy of unlimited intervention right up until 1967, having in mind the conclusions, posited in the previous chapter, concerning the desirability of official support of the forward market. The views of various writers on this issue will be cited to demonstrate the disagreement which exists and thus to underline the tentative nature of any conclusions which may be reached here.

In 1958, Treasury and Bank of England witnesses² told the Radcliffe Committee that large-scale intervention was unthinkable as a weapon of policy, either then or after the formal establishment of external convertibility for sterling. The

¹Much of the inspiration and ideas for this part of the analysis came from Peter Oppenheimers:

"Forward Exchange Intervention: the Official View," in the Westminster Bank Review for February, 1966.

²Sir Roger Makins (Joint Permanent Secretary); Sir Leslie Rowan (Second Secretary); Sir Edmund Compton (Third Secretary) - all of the Treasury; and M.H. Parsons and R.A.O. Bridge, of the Bank of England.

For the cross-examination of these officials see 'Committee on the Working of the Monetary System, Minutes of Evidence' Questions 9684 to 9734, pages 636 - 638.

Treasury memorandum¹ on the subject, on which the later questioning was based, came to the same conclusion. It begins by briefly summarising what it believes to be the supposed advantages which arise from pegging the forward margin at an appropriately narrow discount (that is, smaller than the interest differential):

"To peg forward margins would, it is argued:-

- (i) prevent the switching of financing to London.
- (ii) by maintaining an apparently strong forward rate for the pound, inspire confidence.
- (iii) by offering an insurance against devaluation at virtually no cost, discourage the speculator from withdrawing sterling balances and delaying sterling payments;
- (iv) encourage inward interest arbitrage which would bring dollars into the reserves to offset or at least reduce such smaller losses to the reserves as did then occur." 2

These arguments used here in a specifically British setting are familiar to us, for they appeared in one form or another in the theoretical analysis of Chapter 2. The Treasury conceded that such theory was "attractive intellectually" but that it "does not take account of the psychological behaviour

¹Treasury Memorandum: 'The Forward Exchange Market - Policy.' In Principal Memoranda of Evidence, pages 121 - 122.

²op. cit., page 121.

of markets nor of the policy implications of the proposal."¹ It thus concluded that these theoretical advantages fall to the ground and four reasons were given for this. Because of their importance in the context of this paper, these reasons will be examined in turn.

Their first argument was that:

"we had the experience during the post-war years up to 1951 of fixed rates for forwards at margins equivalent to 1% per annum. We did not find that the existence of fixed rates diminished speculative swings or provided noticeable protection for the reserves. On the contrary we found that outstanding forward commitments, for which the E.E.A. provided the counterpart, varied enormously in accordance with the view currently taken, good or bad, of the probable future course of any exchange rate - despite the fact that we insisted on documentation of all transactions in an endeavour to exclude those of a patently speculative nature. We found that, in fact, we were financing speculation at virtually no cost to the speculator, and it was for that reason that it was decided to withdraw from the forward market and leave forward margins to be determined by supply and demand, so that the rate corrective could be allowed to apply and speculation be discouraged by increasing the cost. From our subsequent experience, we have no reason to doubt that the decision taken in 1951 was the correct one and no reason to recommend a reversion to the earlier pressure [?] of pegging the forward rates;"

This argument is in no way incorrect but it is somewhat confused. Since the whole idea of supporting the forward rate is not to reduce total sales of foreign exchange but rather to reduce spot sales, partly or totally at the expense of the

¹op. cit., page 121.

forward position, the fact that speculative swings did not weaken, and that official forward commitments fluctuated according to market sentiment, does not damn such a policy. As Oppenheimer says: "Any shift from spot selling to forward selling protects the reserves, so long as the domestic currency is not devalued or the foreign currency revalued while the authorities have large forward commitments."¹

However, it is true that there may be no substitution between spot and forward exchange; in such a situation, support of the forward rate may not induce a fall in spot sales. This in fact occurred between 1945 and 1951 when, as we have seen, the imposition of exchange controls, in the form of embargoes, prevented the normal types of transactions required for substitution from taking place. Since the mid-1950s, though, there has been no prohibition on such substitution, if it is achieved through interest arbitrage. Again, official intervention may not lower the pressure on the spot market since it could strengthen peoples' belief in an alteration of the par value and, thereby, weaken confidence. The question of confidence, however, is extremely complicated and consideration of it in more detail will be postponed until later.

The second argument of the Treasury was concerned with interest arbitrage:-

¹Oppenheimer, op. cit., page 4.

"if sterling is under pressure and the pound is suspect, inward interest arbitrage would be unlikely to take place, irrespective of how profitable it might be. The reason is that the Exchange Control Act enables the Government to determine how foreign-held balances may be dealt with. Consequently, foreigners who are content in the ordinary course to hold funds in London are less willing to do so when sterling is weak, when the reserves are falling and when defensive measures of some kind are expected. Under such circumstances foreigners are disposed to withdraw funds from London even if that may involve them at times in quite considerable cost. It is therefore quite unrealistic to suppose for one moment that the opportunity of a relatively small interest advantage would persuade them at such times to bring more money in;"

This argument is further amplified by Sir Leslie Rowan, under questioning by Prof. Sayers (one of the members of the Committee), as seen in the 'Minutes of Evidence'¹:-

"Prof. Sayers: It would seem to follow from the last sentence...that the effects of raising the Bank Rate on the foreign exchange situation are limited completely to the effects induced by the foreigner supposing that the higher Bank Rate will do something to the internal situation, or is a sign that something is being done to the internal situation?

Sir Leslie: I made a statement about this before this Committee on 16th January. You will recall that at that time we said that the Bank Rate had two important elements: one was the fact that it means that a higher rate of interest can be earned on money, and that the other important element was exactly what you have just said, namely, as a sign that action is going to be taken. That must essentially be action in the internal economy of a kind which is going to remove any doubts about the value of [the] currency.

¹ c.f. 'Principal Minutes of Evidence,' Page 637
Questions 9715 - 9718.

Prof. Sayers: I thought you were going much further and saying that your first point is of no account at all at the critical times of pressure?

Sir Leslie: At such times if the currency is in doubt and there happens to be some difference between the interest rates, that difference in itself is not going to be sufficient to attract the money in... [But] if the difference...came, as it came last September,¹ from positive action...then it can have a very considerable effect, because both things would be operating in the same direction..."

Even if this argument was valid at the time, it has since been undermined by the growth of the Euro-dollar market which makes it impossible to talk only about foreign arbitrageurs while ignoring the role of U.K. banks. This is exemplified in the winter of 1964-65, where the provision of cheap forward exchange not only made it unnecessary for the banks to cover their spot market positions but also induced them to swap Euro-dollar deposits into sterling, thus offsetting some of the decline in sterling balances.²

Further, the Treasury argument ignores the fact that forward intervention on its own might improve the state of confidence through its assumption that confidence remains weak.

¹As we saw above, the rise in Bank Rate from 5% to 7% in September 1957 was one of the main factors offsetting the speculation on sterling.

²c.f. Oppenheimer's article, page 6, for a useful table showing this movement.

If this assumption is wrong, the whole of the argument is destroyed for there would be no problem in attracting short-term funds once confidence returned.

The Treasury memorandum's third argument is that:

"There is the further objection that the course proposed would involve the E.E.A. assuming a liability in respect of forward sales of exchange, the size of which could not be calculated in advance and which could in theory be without limit. In practice, it could, under conditions such as prevailed in August and September of last year, reach a figure which might approach the total of the gold and dollar reserves. Such a policy could not be prudently recommended. Furthermore, if forward rates were pegged it would be known that the authorities were carrying an undisclosed liability in respect of forward sales of exchange which would be a charge against the reserves. At times of pressure, therefore, the published reserves would mean little since the public would be interested more in the size of the forward commitments. Whether the figure of liabilities were published or not, the knowledge - or the intelligent guess - that a material part of the reserves was already committed could have a calamitous effect upon confidence and could bring about just the kind of disasters which the advocates of a supported forward rate seek to avoid."

Again, under questioning, this argument is clarified in the

'Minutes of Evidence'¹:-

"Prof. Sayers: In paragraph 5 you say: "such a policy could not be prudently recommended." Then later you use the word "Furthermore", which makes me think that the reasons given following are different from those underlying the earlier sentence. Are the reasons underlying that sentence additional to those given in the following sentences?

Sir Leslie: I do not think that we are drawing any distinction here. We are trying to give a coherent

¹ op. cit., page 636, Question 9695.

account of the reasons under this heading. The main reason we give is that it would involve assuming a possibly unlimited liability, and then we give other reasons, including the doubt it might cast on our reserve figures because people would know that this liability was there and might be very large and the reserve figures would therefore not have the integrity which they now have. "Such a policy could not be prudently recommended" might well be said to cover the whole of this heading.

It is clear from the above that very large forward commitments were seen as unwise on their own, regardless of the reasons given afterwards. This is a dubious argument for it is difficult to understand any objection to forward commitments which do not represent a future charge on the reserves. However, further consideration will be given below to the question of just how far forward commitments actually represent a charge against the reserves, when an examination is made of the 1964-65 change in policy.

The final Treasury argument was that there was also a risk of revaluation of foreign currencies:

"...those who argue in favour of unlimited official support of the forward rate say that the authorities need not be concerned at the size of the commitment they have thus taken on; they may find themselves acting as gigantic bulls in sterling, but the decision to devalue is entirely in their hands. Even if this were not wholly true (which it obviously is not since the existence of such a commitment would have the dangers described...above) it ignores the fact that the acceptance of the commitment is not only a gesture of confidence in the authorities' ability to maintain the value of sterling, but is also a gamble on another matter which is completely

outside their control i.e. whether other currencies will be revalued. They might, for example, get into the position of selling a particular currency forward on a massive scale in support of forward sterling. In the event of a revaluation of that currency, a substantial open short position could cost us very dear."

The Treasury was certainly correct in identifying this risk but wrong to infer that it must necessarily rule out large-scale forward intervention altogether. It all depends on how support of the forward rate affects the combined volume of sales in spot and forward markets together. This stems from the fact that, if the government devalues while possessing outstanding forward commitments, it will sustain a loss on the latter just as if it had sold the same amount of exchange spot. However, as already seen above in the debate between Goldstein and Aliber, the question of whether or not forward support exposes the authorities to an additional loss in the event of a devaluation is far from straightforward, so, for the sake of completeness, I will postpone further consideration of it, in this practical context, until after presentation of the counter-arguments used to vindicate the 1964-65 official position.

Thus, after having condemned official forward intervention on the basis of the four arguments presented above, the Memorandum concluded:

"...that a policy of supporting the forward rate might well increase speculation rather than reduce it, and could therefore increase rather than reduce fluctuations in the reserves.

By contrast, our view is that the fluctuations in the reserves which can be directly attributed to the operations of the forward market as at present constituted, are relatively small." ¹

One would expect such a strong condemnation to be of immense importance and to represent a policy of almost permanent duration. Yet, within six years, the policy was completely reversed: beginning in the last week of November 1964, the monetary authorities undertook very heavy sales of forward exchange for both three and six months delivery. Many of these commitments were renewed as they matured. This represented a complete 'volte-face' with regard to the authorities original position; moreover, the new policy was defended by the Bank of England on the basis of arguments which were in total contradiction to those of the Treasury memorandum. Although observers of recent British politics have become well-nigh accustomed to sudden reversals of policy (!), the reversal under examination here is in an area where one

¹For the debate between Prof. Cairncross and Sir Leslie Rowan over the compatibility of this statement with the one previously made in the Treasury's first argument, concerning the 'enormous' variation in outstanding forward commitments between 1945 and 1951, see 'Minutes of Evidence' page 638, questions 9726 - 9734.

would least expect it; it is all the more surprising since "even a few months before the change of policy was decided upon, the attitude of official circles was the same as it was at the time when their spokesmen gave evidence before the Radcliffe Committee."¹

When a person or institution, who has been giving an emphatic negative answer for a prolonged period, suddenly provides a positive response to the same question, it is reasonable to conclude that something dramatic has occurred in the interim. As we shall see subsequently, in our determination of the validity or otherwise of the policy to intervene without limit in the forward market between 1964 and 1967, this conclusion is of particular accuracy. However, before turning to this aspect of the problem, we shall first outline the arguments which the Bank of England used in defense of the new policy, and compare and contrast them with those used in the Treasury Memorandum.

The Bank of England, in its Quarterly Bulletin for March, 1965, starts by outlining the economic situation which gave rise to the decision to adopt a policy of unlimited forward support:

¹Einzig, op. cit., page 536.

"From August onwards, sterling was under some pressure. This was mainly due to the deficit in the balance of payments, which was for seasonal reasons particularly large in the autumn; but confidence also had already faltered from time to time. In November, a severe crisis of confidence developed. The net effect of the various measures announced in the Budget on both the domestic economy and the balance of payments was apparently not fully understood abroad; the uncertainty which developed in the gilt-edged and equity markets... also reacted upon the foreign exchange market; and pressure intensified when...no change was made in Bank Rate..The spot rate for sterling against the U.S. dollar, which had opened the month at a shade below \$2.78 $\frac{1}{2}$ was allowed to fall to \$2.78 $\frac{1}{4}$ by 20th November. From then...sales of sterling were massive and growing."

Having described the background in this way, the Bank then goes on to explain the decision to intervene forward, defending the new policy on three grounds:-

First:

"The discount on forward sterling had increased remarkably little before the technical adjustment prompted by the rise in Bank Rate. But it then widened rapidly as demand for forward exchange built up...Because spot sterling was weak, the development of a substantial discount in the forward market would have added to the general apprehension, and caused even more spot sales. The authorities accordingly began to give support to the forward rate."

Second:

"When the crisis developed in November, the banks began to find difficulty in matching forward sales of sterling for their customers with forward purchases of foreign exchange, and some started to cover their positions by increasing their spot holdings of foreign currencies.. The authorities' intervention at this point provided the banks with the necessary forward exchange, and thus averted the further drain on the reserves which might otherwise have developed."

Third:

"By supporting the forward rate, the authorities also

lessened the cost of forward cover on short-term funds placed in the United Kingdom, more of which might have been repatriated if the cost of this cover had been excessive."

Regardless of the validity, or otherwise, of these arguments, they represent a complete turn-around in official attitudes, for the Treasury Memorandum condemned and rejected arguments almost identical with the three above. Going on, the Bank of England considers the question we have already made reference to: that is, just how far forward commitments actually represent a charge against the reserves. The Bank explicitly denies that there was any significant threat:

"It would be mistaken to regard the large commitments undertaken by the authorities in the forward market as threatening an abnormal drain on the reserves when the deals mature. The bulk of these operations will have related to commercial transactions and were simply a form of insurance whereby traders made certain that payments which were in any event due in future months would be made on the basis of the existing rates of exchange. In so far as the forward sales of sterling were made by non-residents for the purpose of hedging sterling assets...they are self-reversing in the sense that the seller must sooner or later close out the hedge by buying the sterling which he has contracted to deliver, except in marginal cases where he might decide to dispose of the assets in question."

Thus, whereas in 1958 the authorities maintained that large forward commitments would be a future threat to the reserves and could adversely effect confidence, in 1965 they denied this threat and claimed a strengthening of confidence would result. This difference of view led Oppenheimer to weigh the

balance of arguments and to arrive at a somewhat sceptical conclusion regarding the wisdom of the policy that was pursued in 1964-65. Goldstein, in a later article,³ challenges this conclusion, feeling that forward support was an appropriate instrument. An examination will now be made of this debate.

Oppenheimer's scepticism is based on three propositions. The first is that he does not believe one should accept blindly the Bank of England's assertion, in 1965, that forward intervention strengthened market confidence in their ability and determination to defend sterling's parity. This is because "the authorities really cannot know whether the 'general apprehension' would have been greater if they had not intervened."¹ Secondly, he regards such hold intervention as being dangerously unwise since "with forward deals running to such large sums, it is hard to see how the authorities could be sure that any unusual future drain on the reserves, due to disposal of sterling assets, would be negligible."² Finally, he adopts the view that the policy of forward support increased the sales

¹op. cit., page 13.

²op. cit., page 9.

³H.N. Goldstein "Forward Exchange Intervention. Another view of the Recent British Experiment". W.B.R. August, 1966.

of both spot and forward dollars combined, and thereby faced the authorities with the risk of a greater devaluation loss than if they had not intervened.

On these three premises, he bases his conclusions regarding the validity of the 1965 arguments in comparison with those used by the Treasury in 1958. He sees the Treasury Memorandum as being badly argued and as failing to offer a convincing case against large-scale intervention in a speculative crisis. As for the 1965 analysis, he regards the arguments as being somewhat sounder, but believes them to be weakened by their treatment of the issues of confidence and reserve - loss. Having thus weighed the two cases regarding large-scale official forward intervention, Oppenheimer concludes:

"All in all, the verdict seems to be: not proven. The authorities did keep some short-term money in London by dint of accumulating vast forward commitments. But they might easily have borrowed more from the central banks instead. In effect, they used part of the central-bank arrangements to back their forward commitments. It is these arrangements that were in every way the decisive factor. Forward intervention did not make a great deal of difference.....The real case for large-scale intervention arises when there is capital flight in spite of a healthy underlying situation in the balance of payments. In 1964-65, the U.K. payments situation was anything but healthy, and the authorities were engaged in shoring up an exchange parity which made dubious economic sense." ¹

He thus bases his overall opposition to the 1964-65 use of forward intervention on the grounds that the pressure on

¹op. cit., page 13.

sterling reflected a basic deficit in the balance of payments rather than a temporary capital flight. This, as we saw at the conclusion of Chapter 2, represents a viable argument against official forward support.

Goldstein, however, disagrees fundamentally with the arguments on which Oppenheimer's scepticism is based, and finds a valuable ally in C.A. Coombs, the Vice-President in charge of the Foreign Department of the Federal Reserve Bank of New York. This latter personage's verdict on the British government's use of forward intervention in 1964-65 is the almost complete antithesis of Oppenheimer's:

"While short-term central bank credits and subsequent funding operations through the I.M.F. provided the basic defence line for sterling during this troubled period, inadequate recognition has been given to the success of Bank of England operations in the forward market that were conducted forcefully and with great technical skill during the course of the year. Such large-scale operations in the forward market not only exerted at critical moments a highly salutary influence on market confidence but also had the vitally important effect of relieving pressure on the spot market and British dollar reserves by providing at reasonable cost the alternative of hedging in the forward market. In the absence of such forward operations, it seems all too clear that the drain upon British reserves and the utilisation of central bank credits would have been much heavier and consequently would have aggravated still further an already dangerous crisis." ¹

Goldstein accepts this view and, to justify it, criticises, in

¹ 'Treasury and Federal Reserve Foreign Exchange Operations', in Federal Reserve Bulletin, March 1966 page 319.

turn, Oppenheimer's 'three propositions'.

Regarding the first proposition, Oppenheimer argues that there is no reason why forward intervention should have predictable effects on confidence. Goldstein disputes this, contending that market operators, in their continuous appraisal of the risks of devaluations, or revaluations in various currencies, tend to rely on the climate of opinion. As was seen in Chapter 1, a good index of this climate is the forward rate of the currency under observation. As Goldstein writes¹: "as the [forward] rate dips below interest parity, all sorts of transactors tend to have second thoughts about the exchange risk to which they are exposed, or the profit opportunities that lie open, from a possible change in parities." Thus, he sees the forward rate as not only reflecting average opinion, but as also helping to determine the latter and, thereby, the actions of market operators.

This view is supported by I.S. Friedman, a staff member of the I.M.F., who writes:

"It is simple arithmetic to calculate whether, at any given moment, commercial traders, whatever their motives, are expecting a fall or a rise in the exchange rate, and whether that fall or rise reflects an expectation of a change in the par value. For this reason, forward exchange rates have become increasingly important as indicators of the external financial position of a country and its prospects. Indeed, it

¹op. cit., page 4.

may be said that such quotations are becoming more important than changes in gold or foreign exchange reserves as indicators of the strength or weakness of a currency." ¹

Goldstein therefore views Oppenheimer's argument, that forward intervention is as likely to weaken confidence as to strengthen it, as an unlikely contention, although, as he admits:

"....by directly affecting the forward rate, the authorities cook the thermometer. But so what? Even though the air is as chilly as ever, people are likely to feel warmer if they see the mercury at a higher reading." ²

Oppenheimer's second proposition is that the government faces a considerable risk in its support of the forward rate, since a large proportion of forward sales may represent the counterpart of forward purchases of dollars by foreign business, owning assets in Britain, who have decided to liquidate these assets in the face of exchange-rate uncertainties. If this were the case, such forward sales of dollars would not be self-cancelling but would represent a permanent reserve - loss. Goldstein challenges this, arguing that such investments - usually made to circumvent tariff barriers, save on transport costs or take advantage of specialised skills - are made on the basis of expected long-run profits, and are

¹ I.S. Friedman, "The International Monetary System: Part 1, Mechanism and Operation." I.M.F. Staff Paper, July 1963, pages 230 - 231.

² op. cit., page 5.

therefore "unlikely to be materially affected by the sort of change in exchange rates that might conceivably be made to restore payments equilibrium."¹

He provides a simple, but useful, example to illustrate this point. Taking a U.S. parent company, with a subsidiary in Britain, suppose that over a time-span of 20 years, it expects to earn 5% p.a. more on its investment in this subsidiary than on a comparable domestic investment. Then, by maintaining this subsidiary, the parent company gains additional expected earnings, per \$100 of invested capital, that have a present value, discounted at 6%, of:

$$\$5 + \$5 / 1.06 + \$5 / (1.06)^2 + \dots + \$5 / (1.06)^{20} = \$57.$$

Thus, it would not find it worthwhile to close-down this subsidiary unless either sterling was devalued by more than 57%, or that it became impossible to hedge against such a capital loss.

Although this is merely a simple example, utilising hypothetical figures, it does provide the normal, expected order of magnitudes, and would seem to justify Goldstein's belief that massive flights from direct investments in Britain, by overseas businesses, in the face of a devaluation - risk, would seem unlikely. This belief gains greater strength if

¹ op. cit., page 5.

the authorities are prepared to provide overseas investors with relatively cheap insurance against any capital loss arising from a devaluation of sterling. In fact, by supporting the forward rate at or near interest parity, the monetary authorities provide just such insurance.

Turning to Oppenheimer's final proposition, Goldstein examines the question, already alluded to above,¹ of whether forward support exposes the authorities to an additional loss in the event of a devaluation. As was seen in our theoretical analysis, if the government does not pursue a policy of forward intervention, and then devalues, it sustains a loss equal to the percentage by which the dollar is appreciated in terms of sterling, multiplied by their speculatively induced reserve losses, which then flow back into sterling at the new par value. If the forward rate is fixed, the reserve losses are likely to be less, but forward commitments may be greater than the additional loss of reserves that would have occurred without forward support. If the government devalues its domestic currency following a period of forward intervention, it loses a sum equal to the induced spot reserve losses, plus forward commitments multiplied by the percentage by which the dollar is appreciated.

¹c.f. page 81.

Goldstein, assuming that the size of the devaluation would be the same in both cases (an assumption which we have already found fault with¹), then suggests the key question is whether the government's additional commitments in the forward market are greater than the additional spot reserve losses that would have occurred if there were no forward intervention. On this questionable premise, he argues that confidence is the determining influence. If it is strengthened by forward support, then one may expect a decline in sterling short positions; if it is weakened, such positions may increase. As seen, Oppenheimer does not regard forward support as a factor increasing confidence and therefore believes forward support exposes the government to an additional loss in the event of a devaluation. Goldstein, however, sees the confidence effect influencing sterling favourably in 1964-65 and thus argues "...for this reason alone, it seems likely that private transactors' total short positions in sterling, through both markets combined, were reduced by official forward intervention following the speculative attack in November 1964."² Since the premise, on which this conclusion is based, is questionable, though, the validity of Goldstein's proposition is somewhat uncertain in this instance.

¹c.f. above page 53.

²op. cit., page 7.

Further, there is also the possibility that, even if confidence improved, forward intervention might still increase total short positions in sterling by reducing the cost of taking such positions. The determining factor here is the speculative and hedging demand for dollars, in both spot and forward markets combined, during times when expectations of a devaluation are strong. If this demand is price-elastic as Oppenheimer contends forward intervention may augment the government's potential loss from devaluation in spite of confidence having a constructive effect. Goldstein, though, regards this as implausible:

"If transactors feel that there is, say, a one-in-ten chance that sterling will be devalued in the next 30 days by 20%, they already have a powerful incentive to hedge or speculate. Any reduction in the cost of taking a bear position in sterling is unlikely to change their 'expected speculative profit' or 'expected loss from failing to hedge' by a significant percentage."¹

He therefore sees as unlikely any such effect on the overall extent of speculative and hedging transactions.

Having thus criticised the three propositions on which Oppenheimer bases his scepticism with regards to forward intervention in 1964-65, Goldstein concludes by agreeing with Oppenheimer that the balance of payments situation in Britain, at that time, was far from healthy and that the government was

¹op. cit., page 10.

engaged in supporting an over-valued currency. Nonetheless, he believes that:

"...granted that the Government were determined not to let go of the 2.80 parity, we do not feel that forward support was an inappropriate or ineffective instrument. Indeed, if anything, we would question whether the British authorities acted boldly enough in supporting the forward rate."

Thus, he too, along with Oppenheimer, bases his opposite conclusion on an argument which we suggested as viable at the end of Chapter 2 - that is, that forward support is an essential policy for an exchange authority that puts a very high priority on a maintenance of its existing parity. We thus find ourselves in a confusing situation, where both conclusions are based on acceptable arguments. Yet, in the analysis to follow, I intend to remove this confusion by showing that, although both arguments are correct, they are overruled by other considerations which show the policy of forward intervention, as followed from 1964, was unjustifiable since it was adopted as a technique to cover up the economy's underlying weakness and thereby postpone the painful, but necessary, deflationary measures.¹

¹For a persuasive, although somewhat politically biased attack on the Wilson Government's decision to use unlimited forward intervention in its defence of sterling, the reader should refer to chapter 47 in Einzig's 'A Dynamic Theory of Forward Exchange'.

A somewhat condensed version of this can be found in Einzig's "Forward Exchange Intervention", which appeared in the W.B.E., February 1967.

It was the persistent heavy pressure on the pound, that followed the advent of the Labour Government in 1964, that caused the authorities to change their mind and to adopt a positive attitude towards unlimited forward intervention. This pressure was the 'something dramatic' which occurred in the interim since the Radcliffe Tribunal. Although this policy of forward support was not a total departure from the past since, as we have seen, it had been used, albeit intermittently, in 1931 and 1957, it did differ from these previous occasions in three vital respects.

The first is that the policy of forward intervention, as followed from November 1964 onwards, was a fundamental part of the system that the Government established for defending the pound, and it became a regular characteristic of the Foreign Exchange Market. In contrast, the interventions of 1931 and 1957 were merely a response to sterling difficulties which lasted a few months and which were terminated as these difficulties abated. Indeed, in 1957, the policy was stopped even before the crisis ended. Although intervention was not continuous from 1964 onwards, because sterling sometimes required no support for short periods, the Government was prepared to sell forward dollars whenever the situation arose, without regard to the size of commitments

already outstanding.

Further, this support was unlimited, again in contrast to the previous instances of intervention. Indeed, according to Einzig, the forward commitments which arose between 1964 and 1967 "are understood to have exceeded from time to time considerably the amount of the gold and dollar reserve, though possibly not the total of liquid Foreign Exchange resources...."¹

The final distinguishing feature is that considerable international resources were available for the support of sterling after 1964. Not only was assistance readily obtainable from the I.M.F. and the Bank for International Settlements, but the Bank of England was also able to avoid any difficulties of meeting its maturing forward commitments by the use of repeated swap transactions.

Such considerations greatly strengthened the temptation to adopt unlimited intervention since inadequacy of reserves no longer seemed to represent a basic constraint to such a policy. It has been argued that the Government was entitled to adopt such a policy in 1964, so as to enable it to gain

¹op. cit., page 533. The 'total of liquid Foreign Exchange resources' referred to include swap arrangements between central banks, and drawings rights and credits available to Britain from the I.M.F. and a group of central banks.

time for the preparation of the measures needed to combat the serious economic position. This is an acceptable argument. However, it lost any semblance of validity when it was realised that the authorities meant to apply it permanently, as an additional method of short-term borrowing abroad. Rather than tackling its economic problem head on, the Government succumbed to what Einzig called 'the tempting easy way out'.

This adoption of the policy of unlimited support of the forward rate for sterling in the face of fundamental disequilibrium in the balance of payments "virtually amounted to announcing to the world that Britain, instead of tackling the fundamental causes of the crisis, intended merely to camouflage it."¹ Moreover, this policy not only attempted to cover up the underlying weakness of the economy, it also made the situation worse by intensifying its inflationary condition. In the period between 1964 and 1967, the artificially low discount on forward sterling greatly stimulated the switching of Euro-dollars into sterling to be used as loans to local authorities and hire-purchase finance houses. The money attracted in this way, added considerably to the already extensive inflationary pressure and was largely responsible, for the neutralization of the Government's deflationary

¹Einzig, op. cit., page 10.

measures. Because of this neutralization, the almost - draconian economic measures, introduced in July, 1966, became inevitable. This point is well expounded by Einzig.

"The repeated renewal of official forward dollar liabilities as and when they matured, and their presumed increase as and when fresh deficits were being financed by official selling of more forward dollars, is not a confidence - inspiring spectacle. It was mainly because of the growing distrust caused by this kite-flying strategy that the Government felt impelled eventually to adopt much more drastic measures in a long-overdue attempt to restore confidence."

It is possible that the new administration adopted the policy on the grounds of practical expediency, hoping that if the immediate crisis of sterling could be met, the general situation would improve. However, although lacking indisputable evidence, it would seem that the policy-change was largely caused by political considerations for the sake of avoiding the alternative measures of deflation. This verdict is strengthened by the fact that, because of the small majority held by the Government in Parliament, it would have been essential to avoid politically unpopular policies, in case an early election was called. Supported by the advice of politically-motivated economists, newly integrated into the administrative machine, a policy of unlimited forward support would have seemed an ideal alternative to a running down in the reserves, deflation or even devaluation. Given

Mr. Wilson's passionate commitment to avoiding the latter, it is not hard to understand how forward support came to seem such an attractive alternative.

It has also been suggested to the present writer, by an economist now working at the National Institute of Economic and Social Research in London, that the change of policy leading to adoption of unlimited forward support may have been influenced, not only by the change of Government, but also by a change of personnel in the top post at the Treasury.

As was seen earlier, Sir Roger Makins was joint-permanent Secretary at the Treasury at the time of the Radcliffe Inquiry, and it is likely that his personal opposition to official forward intervention was one of the determining factors in both the Treasury's and the Bank of England's virulent opposition to the unlimited use of such a technique. Further, as Brittan has pointed out, Makin's background did not exactly equip him with the knowledge necessary for his position: "The choice of Sir Roger Makins, until then Ambassador in Washington, as the Treasury's economic chief was a bold gamble that did not quite work. The country's economic problems were too complex for anyone, however intelligent, with a mainly Foreign Office background...."¹

¹S. Brittan, Steering the Economy - The Role of the Treasury (London, 1969), Chapter 2, page 38-39.

Makins retired in 1960, and his place was taken for a couple of years by Sir Frank Lee, previously Permanent Secretary to the Board of Trade. He was himself succeeded in 1962 by Sir William Armstrong (the present head of the British Civil Service). Armstrong was previously Third Secretary in the Home and General Finance Division of the Treasury and, through his preoccupation in that job with domestic monetary policy, debt management, National Savings and other subjects related to government borrowing and lending, probably brought to his new position the technical skills and beliefs which he had previously practiced.¹ This being so, he might possibly have been the type of person to support, if not advocate, the use of such a technique as forward support of sterling.

The policy change might also have been a function of personalities at the Bank of England, and the relation between the latter and Armstrong. If he had found, in the Bank, people who were in favour of forward support, Armstrong would probably have gone along with the scheme and added the weight of the Treasury to any advocacy of the policy to the New Government.

¹It should be noted that, after Armstrong's promotion in 1962, the sections of the Treasury dealing with home and overseas finance were brought together. Thus, the responsibilities of this merged group were extended, from those already mentioned, to cover overseas financial negotiations and the balance of payments.

This, of course, is all highly speculative and, for the present at least, it is impossible to obtain the necessary information. Yet, personalities are often the determining factor in the choice of economic policy and some consideration, no matter how uncertain, should always be given to such matters.

As a result of adopting such a policy, the Government felt strong enough to push through measures, such as increases in social expenditure, raising the salaries of members of Parliament, expanding the civil service, nationalising the Steel Industry, and reforms of the tax system to redistribute incomes to the poorer members of society, which were in direct conflict with the economic needs of the country. My opposition to the use of unlimited forward support, between 1964 and 1967, thus rests on the argument that it was used as a shield, behind which the Government followed damaging inflationary policies while avoiding the painful, but necessary, measures needed to correct the balance of payments situation. Such a conclusion must over-rule those of Oppenheimer and Goldstein, regardless of the fact that they in turn are based on conclusions regarding the desirability of forward support which we ourselves suggested as viable.' Such conclusions were rendered redundant by the use to which the policy of intervention was put in the period 1964 - 67!

However, although it is possible to attack strongly, on economic grounds, the use of forward support of sterling during this period, it should be noted that its use can be considered legitimate in the 'game' of politics. Labour Governments, historically, have always taken the view that the needs of the domestic economy are paramount and therefore any weapon is justifiable to achieve domestic stability of employment. Conservative administrations, on the other hand, have been predisposed to come to power with the view that the needs of the Balance of Payments are the most important. This view is probably the result of two factors: the first is that Conservatives have been closely allied to banking and business interests and have been brought up on the adjustment system of the Gold Standard; the second is that the party is comprised, in general, of people who suffered less in the Depression, and therefore who do not have the same repugnance with regard to unemployment as the rank-and-file members of the Labour Party.

Wilson, being both a Labour politician and a trained economist, must have considered carefully, when he came to power at the end of 1964, whether to 'play' economic policy for domestic issues or the strength of the Balance of Payments. In the end, he tried to chose both and, to help attain this, adopted the policy of forward intervention to try and offset

speculative pressures against sterling while pursuing relatively expansionist policies domestically.

In the light of the fundamental disequilibrium which existed in Britain's balance of payments, this was a foolhardy policy to adopt on economic grounds; yet, in political terms, it was understandable, and, in matters of policy determination, it is inevitable that such political considerations are the determining factor.

Chapter 4: American experience with forward intervention.

By way of comparison with British use of forward intervention, a brief examination will now be made of America's utilisation of this technique during the 1960s. It will be shown that the U.S. used such intervention primarily as a stabilisation weapon to reduce the flexibility of exchange rates and, more importantly, to offset the frequent disturbances which plagued the international monetary system in general during this period. For these reasons, the use of forward support in America differed fundamentally from that in England where, as was just seen, the policy was pursued for purely nationalistic economic and political ends.

In March, 1961, for the first time since the 1930s, the U.S. authorities began to intervene actively in the foreign - exchange market for their own account.¹ This resumption of foreign exchange operations, by the U.S. Treasury in March 1961 and by the Federal Reserve System in February 1962, was part

¹These transactions were undertaken by the Federal Reserve Bank of New York, both for the account of the Federal Reserve System and for the account of the U.S. Treasury, including the Treasury's Exchange Stabilisation Fund. The information on U.S. exchange - market intervention is based on the reports by C.A. Coombs, "Treasury and Federal Reserve Foreign Exchange Operations," in Federal Reserve Bank of New York Monthly Review, September 1962 - March 1970.

of a cooperative effort with foreign Treasuries and central banks to establish a defense against foreign exchange market speculation. Since, under the dollar - based gold exchange standard, the U.S. dollar is the fulcrum of the international currency system, this co-operative effort took the form of arrangements between the U.S. and other industrial countries, adapted to the individual needs of the countries involved.

Although the principle of intervention by central banks in their foreign exchange markets had been accepted in the 1930s, the U.S. had refrained from such operations from the beginning of the Second World War until 1961. This difference of approach stemmed from the Bretton Woods Agreement. As was seen earlier, under the Articles of Agreement of the I.M.F., member countries agreed to establish par values for their currencies in terms of gold or the U.S. dollar, and to limit fluctuations in their exchange rates to no more than 1% around par. In many instances, countries fulfilled this obligation by buying or selling U.S. dollars against their own currencies, thereby preventing their exchange rates from rising above the "ceiling" or falling below the "floor". Foreign central banks also operated in the exchange markets between these margins, to even out movements in their rates.

Foreign official intervention on the exchange is generally achieved through the buying and selling of U.S.

dollars since the latter is the main reserve currency. Such intervention leads to changes in official holdings of dollars, increasing them when the demand for the foreign currency is strong and reducing them when demand is weak. Most countries hold only a certain proportion of their reserves in the form of dollars; the remainder is usually gold. If official intervention is large, countries may take possession of more dollars than they want; in such a situation, the authorities of the country in question will convert the unrequired dollars into gold. Similarly, they may be forced to sell gold to obtain any dollars they are short of for support operations.

This willingness of central banks to acquire and hold dollars as a part of their reserves depends on their ability to convert such dollars into gold at a fixed price. Under the Bretton Woods system, this assurance is provided by the U.S. agreeing to maintain a fixed par value for the dollar by being ready to buy or sell gold against dollars at a fixed price of \$35 per ounce. This system, of defining and maintaining the dollar's parity in terms of gold, while other countries parities are maintained by the buying and selling of dollars, led to the establishment of the gold exchange standard, under which the U.S. acts as banker for the dollar exchange reserves.

As banker the U.S.'s role had been largely passive until

1961. Although overseas central banks resisted falls in their currency's rate, they had no obligation to resist similar falls in the dollar. Thus, whenever the latter came under any pressure, its rate tended to move towards its "floor". Only at this point would foreign central banks take any surplus supply of dollars off the market. This passive role by the U.S. led to no serious problems for many years.

However, by 1960, a series of deficits in the U.S. balance of payments had led to heavy gold losses and large increases in dollar liabilities. The dollar was subject to rumours of changes in financial policy, particularly regarding the maintenance of the \$35 price for gold.

The following speculation against the dollar was finally offset by a number of measures, which included a pledge to maintain the gold price and to make available the whole of the U.S. gold reserve for defending the dollar. However, this recovery in confidence was still highly precarious and was soon to be upset.

On March 4th, 1961, the German government revalued the mark by 5%, the Netherlands announcing a similar change shortly after. These parity changes, regardless of their intended effect towards international payments equilibrium, immediately induced a crisis of confidence and there was wild speculation on the possibility of future devaluations or revaluations.

In particular, speculation on the expectation of a revaluation of the Swiss franc was especially strong, resulting in a huge inflow of dollars into that country. The greater proportion of this inflow comprised the counterpart of a simultaneous speculative assault on the pound, the Bank of England suffering a large loss in reserves.

An agreement reached in Basle, by central bank Governors, to co-operate in the exchange markets offset this first speculative wave, but rumours of a second upward revaluation of the mark and guilder were not long in gathering strength, and these would have weakened the dollar even without a run on sterling. German investors reduced their long positions in dollars, to avoid any capital losses from a second revaluation, while simultaneously increasing their dollar short positions, to make capital gains, by borrowing more in New York. In the normal fashion of leads and lags, U.S. exporters and German importers also delayed converting marks into dollars, while U.S. importers and German exporters speeded their conversion of dollars into marks.

Further, speculation in the forward market grew in importance. Increased buying of forward marks and reduced buying of forward dollars led to a 4% discount on the forward dollar which provided a profitable occasion for covered interest arbitrage from America to Germany. This outflow of

arbitrage funds, coupled with the shift of the leads and lags in commercial payments, created a potentially dangerous situation by worsening the apparent U.S. payments situation.

It was thus against this background that the decision was reached, on March 13th, for the U.S. authorities to cooperate with the German authorities in the buying of large quantities of forward dollars (i.e. sale of forward marks). This had the aim of providing an adequate supply of forward marks, as an alternative to the speculative buying of spot marks by foreigners and dollar borrowing by Germans, thereby lowering the forward premium on the mark to as close to 1% as possible. In fact, by the end of March 1961, the discount on the forward dollar had fallen to 1.5%, the U.S. forward commitments exceeding \$100 million. This support for the forward dollar, which also included the sale of forward Swiss francs to offset the flow of hot-money to Switzerland, continued throughout the summer of 1961, the cumulative commitment exceeding \$400 million before this first round of official intervention ended.

Having thus described in some detail the U.S.'s first use of the technique of forward intervention, what conclusions regarding its efficacy can one reach? From the information available, it seems that, as the first of the forward contracts

began to mature, the speculative tide turned and the spot dollar rate gradually rose off the "floor" to which it had been pinned for many months. This improvement was partly due to a market demand for dollars required to pay for the forward marks previously contracted for. Co-operation between the German and American authorities in the spot market also helped strengthen the dollar rate.

It would thus seem that by offsetting a large-scale flow of speculative funds that proved to be reversible within 9 months, these U.S. operations in the forward market clearly aided both America and Germany. The short-term capital outflow from the U.S. was reduced, thereby reducing the U.S. payments deficit,¹ while the German authorities were able to prevent their dollar holdings from coming too large. In more general terms, these first forward operations greatly strengthened confidence in exchange markets, since the latter badly needed the assurance which comes from monetary co-operation between governments. This experience with the forward mark operation thus proved sufficiently encouraging

¹The U.S. balance-of-payments accounting system treats an outflow of short-term U.S. funds and an inflow of foreign short-term funds asymmetrically. The first is presumed to increase the U.S. deficit, the second not to reduce it.

for the U.S. authorities to adopt forward support as an extra weapon for the achievement of international stabilisation, and as will now be shown, it was with this aim in mind that the policy was pursued between 1961 and 1970.

From 1961 to 1964, the U.S. authorities intervened in the forward markets for Swiss francs, Italian lire, Netherlands guilders and, on a smaller scale, for Belgian francs, Sterling, French francs and the Canadian dollar,¹ but it was not until the deterioration in the international monetary system reached a critical level in late 1964 that U.S. forward intervention became of great importance in contributing towards the moderating of speculative disturbances.

During the six-month period March to August 1964, international credit facilities, both bilateral and multi-lateral, were frequently called upon to cushion the impact of payments imbalances on gold and foreign exchange reserves among the major trading nations. In this context, official operations in the forward markets helped to smooth out temporary swings. For example, the Federal Reserve and Treasury co-operated with other central banks in carrying out short-term forward operations in sterling, German marks, Swiss

¹For details of U.S. forward intervention during this period, see R.Z. Aliber's 'The Management of the Dollar in International Finance' (Princeton, 1964) pages 33 - 38.

francs and Canadian dollars with the aim of offsetting short-term money flows either from speculation or interest arbitrage.

During the same period, the Federal Reserve completely liquidated any outstanding swap drawings, while drawings by other central banks amounted to only the relatively small sum of \$65 million. This diminishing use of international credit facilities reflected a reduced U.S. deficit in the balance of payments, along with a narrowing of payments imbalances in other countries. This movement towards equilibrium was, however, interrupted in the second half of 1964 by the sterling crisis, a tightening of credit facilities in Europe and a large outflow of capital from America. As a result, severe speculative pressures developed which required intergovernmental co-operation.

In addition to extensive central bank swap operations both the Treasury and Federal Reserve also engaged in forward operations in Dutch guilders and Swiss francs to calm exchange-market fears and encourage an outward flow of short-term funds from Amsterdam and Zurich. The Swiss National Bank took certain steps to help cushion the effects of expected end-of-year pressures on the Swiss franc, while the German Federal Bank also made available swap facilities to commercial banks in Germany, for investments in U.S. Treasury bills, with the aim of offsetting market pressures induced by short-term

capital flows. Also, the Bank of England intervened extensively in her forward market, for reasons which we have already seen, and thereby gained some temporary relief from speculative pressure on sterling's spot rate. Thus, as a result of central bank credit operations, American and foreign forward operations and, in addition, traditional buying and selling of gold, the pressures of late 1964 were countered with a reasonable degree of success.

From March until August 1965, the foreign exchange markets continued to reflect the normal shifts in countries balance of payments positions but also, more importantly, the growing speculative pressure on the pound. To meet these pressures, the Bank of England continued to make drawings on the swap facilities at the U.S. Federal Reserve, while using forward support to try and stabilise the dollar-sterling forward market. American forward - market activities, however, concentrated on trying to minimise the impact of the large Italian payments surplus on the exchanges and reserves, thereby stabilising the overall international monetary system by offsetting disequilibrium.

In 1962, the U.S. had reached an agreement with the Bank of Italy to share contracts, for the purchase of forward dollars, which that institution had entered into with Italian banks, with the object of encouraging the re-export of dollars

during a period of large payments surpluses. These earlier U.S. contracts were liquidated in March 1964. However, because of the re-emergence of further surpluses, the U.S. began again in 1965 the sharing of similar contracts, along with the sale of gold totalling \$80 million. In this way, she was able to absorb a large part of the dollar inflow, and reduce the disequilibrating effect of the surpluses on the exchange markets.

The establishment of additional central bank arrangements for the support of sterling, in September 1965, led to a weakening of speculative pressures and a surprisingly strong recovery in the pound. The expectations of an impending crisis gradually receded and, during the subsequent six months, a calmer atmosphere prevailed over the markets. This change in market sentiment was further accentuated by, what appeared to be, strong evidence that both Britain and America were at last overcoming their chronic payments deficits and reestablishing equilibrium.

This welcome stability in the exchange markets was helped by a number of central banks, which took action to offset the effects of any strains or pressures. For example, the Italians continued their swap arrangements with their domestic banks, and these were widely regarded as being successful.

C.A. Coombs, writing in March 1966, provided these observations:

"they [the Italians] sold spot dollars to the banks under forward repurchase contracts in order to funnel back into private channels dollars that otherwise would have been drained off into official reserves. This type of exchange operation....reached record levels during 1965, and served not only to promote balanced conditions in the Euro-dollar market, but also averted the possibility of large-scale drains on the United States gold stock and consequent reduction in international liquidity." ¹

As before, both the U.S. Treasury and Federal Reserve System shared these forward exchange contracts.

With this easing of pressure on sterling, and the improvement in the position of the dollar, the American authorities were able to reduce their short-term commitments. In addition to swap repayments, this reduction took the form of the paying off of all forward contracts, with the exception of the Italian commitments just noted.

In 1966, the international financial system was again subjected to considerable pressure, especially during July, when speculation against the pound reached massive proportions. However, as a result of the severe deflationary measures introduced in Britain at the end of that month, the sterling and other foreign exchange markets became more orderly, although considerable anxiety still remained.

During the first quarter of 1967, there was a strong recovery in sterling concurrent with a restoration of improved

¹F.R.B. Monthly Review, March 1966, page 47.

balance in exchange markets as inflationary pressures receded and credit eased. However, at the end of May, the impending Middle East War undermined confidence in both the gold and foreign exchange markets. Considerable strain was imposed on the Euro-dollar market as a result of capital flowing to Switzerland. In addition, as a result of the supposed vulnerability of Britain with regard to Middle East developments, pressure on sterling again intensified.

To offset the situation in the Euro-dollar market, the Bank for International Settlements drew \$143 million from the Federal Reserve System on a swap basis. By placing these funds in the Euro-market, the BIS quietened the market in general while, in particular, reducing the pressure on sterling which had resulted from the higher interest rates prevailing in this market. Pressure in the exchange market was met by the U.S. authorities, in co-operation with the Bank of England, absorbing sterling through the purchase of spot against forward resale, the total amount absorbed equalling \$112.8 million.

Although disturbances in the Euro-dollar and exchange markets, were thus met in this way, markets still remained generally uneasy in the following months. In particular, sterling was still under near-continuous pressure and this grew steadily worse in response to the continuing difficulties in

the Middle East, a spate of poor trade figures and a crippling dock strike. Finally, after an unprecedented wave of speculation during October and November, the British authorities bowed to the inevitable and devalued sterling from \$2.80 to \$2.40.

This triggered heavy speculative buying on the London gold market and massive flows of funds across the exchanges. To deal with these problems, the governors of the central banks of Italy, Belgium, Germany, Switzerland, the Netherlands, Britain and the United States met in Frankfurt at the end of November. As they wrote in the communiqué at the end of this meeting, they "took decisions on specific measures to ensure by co-ordinated action orderly conditions in the exchange markets and to support the present pattern of exchange rates based on the fixed price of \$35 per ounce of gold."

One of the major decisions taken at Frankfurt, of particular importance in the context of this paper, was a co-ordinated launching of central bank operations in the forward market, specifically designed to draw back into the Euro-dollar market the flows of hot money which had gone into European markets following sterling's devaluation. During November and December, such forward operations by the German authorities totalled \$850 million, while similar operations by Switzerland, the Netherlands and Belgium, on behalf of the

U.S., helped considerably to prevent speculative inflows into these countries.

Throughout 1968, international financial markets were swept by unprecedented waves of speculation. The war in the Middle East, the devaluation of sterling, the massive speculation on the London gold market, the French political crisis and continuing imbalances among the major trading countries, all subjected the system to severe strain. However, the monetary authorities of the major countries continued to strengthen their co-operative arrangements to meet each new crisis. Of particular importance was the agreement reached at the Washington central bank meeting in March 1968 to suspend official intervention in the London gold market and to separate private and official transactions in gold. These new arrangements served to protect official gold stocks from private speculation and thereby removed the worst effects of the rush into gold.

As part of the effort to stabilise the exchange market in the wake of the gold rush, the U.S. authorities underwrote forward operations in Swiss francs and Dutch guilders by the central banks of Switzerland and the Netherlands. These operations increased U.S. forward commitments to \$155.2 by the end of March but, in later months, reversals in the flow of

funds allowed the total liquidation of all these commitments.

Over the next ten months, the major development in the exchange markets was the wave of speculation on the expectation of a revaluation of the German mark and a devaluation of the French franc. Between late August and November, the German central bank was swamped by purchases of over \$4 billion, while the Bank of England and the Bank of France suffered large speculative losses of over \$2 billion. This flood of money across the exchanges was probably more the result of national currency problems than of fundamental deficiencies in the international financial system, although deficiencies certainly existed. The competitive strength of German exports, the struggle of the French authorities to stabilise their currency after the riots of May, the slow recovery of sterling and the inflationary erosion of the value of the American dollar, all contributed towards the maintenance of anxiety and uncertainty in exchange markets.

It was against this background that, in August, the U.S. authorities re-entered the forward market in German marks for the first time since 1961, and supplied \$33.8 million of forward marks to the New York market in support of much larger swap operations by the German central bank. In November, during the height of the speculative demand for marks, the U.S.

Federal Reserve reactivated its swap line with the German central bank to finance \$40 million of spot sales in New York. After the Bonn meeting, the F.R.S. again sold marks forward in New York and covered them with a further \$72.1 million of swap drawings. These forward commitments helped to meet this speculative fever, and were fully liquidated as the latter abated and funds flowed out of Germany. From September 1969 until the present, there has been no indication of any U.S. operations in forward markets, in spite of the highly volatile international monetary scene caused by the Franc devaluation, the German temporary floating, followed by revaluation of the mark, and the present floating of the Canadian dollar.

Having thus reviewed American intervention in forward markets, against the background of the dramatic developments in the international monetary system during the 1960s, one is faced with the task of trying to arrive at some conclusions regarding its role and efficacy.

What strikes one immediately is the difference between the American and British use of this technique. As was seen in Chapter 3, Britain adopted the policy of supporting the sterling-dollar forward market, from November 1964 onwards, as a way of meeting speculative pressure on sterling, thereby hoping to make unnecessary (but, in reality, merely postponing and enlarging) deflationary policies to restore equilibrium to

the balance of payments. The Americans have also supported the dollar when it has been under speculative attack in the forward market, as was observed in 1961, but this has not been the primary function of forward support.

The latter has been to stabilise the international monetary system as a whole by the removal, or at least the offsetting, of speculative pressures and persistent disequilibria in countries' balances of payments. This role has not arisen out of any foresighted, charitable benevolence on the part of America but from its position as banker of the gold - exchange standard which carries with it an incentive to preserve the system's efficiency.¹ From what one is able to judge from the information made available by the Federal Reserve Bank and the U.S. Treasury, American forward intervention in foreign exchange markets, for these ends, has achieved a large degree of success and has come to represent an important weapon for offsetting destabilising pressures.

¹In fact, as Harry Johnson has written in "The World Monetary Crisis" (Encounter, August 1970) the "severance of the official from the private gold markets in March 1968 has...put the Western world on a de facto U.S. dollar standard." As a result of the gold crisis, America can now, if it wishes, assert the dollar's primacy and force other countries to choose between pegging their exchange rate to the dollar and adopting a flexible exchange rate vis à vis the dollar. For an attack on the effects of this see C.G. Tether's "The anchor role of the dollar upsets world parities balance," London Financial Times 10 August 1970.

This verdict is vindicated by the part forward intervention played in meeting the Italian surpluses of 1962 and 1965 and the massive speculation in expectation of the revaluations of the Deutschemmark in 1961 and 1969.

Yet, as Aliber has noted,¹ the U.S. authorities have not substituted forward - rate policy for higher interest rates. Instead, they have maintained their short-term domestic interest rates at levels close to those prevailing in overseas markets. Forward intervention has been limited to the function of attracting funds from a country whose reserve build-up is seen as temporary, as in the case of Germany in 1961, and/or to offsetting speculative pressures.

One reason for this unwillingness to use forward intervention as a means of lowering internal rates of interest may be that "the volume of funds shifted abroad in covered interest arbitrage has been small relative to the total overflow of U.S. short-term funds; this is consistent with the continuing expectation that the dollar would remain weak in the exchange market."² There was therefore little that forward intervention could do to offset an outflow of covered interest arbitrage funds.

Another reason for the apparent reluctance of the

¹op. cit., page 39.

²Aliber, op. cit., page 40.

American authorities to use forward - rate policy as a substitute for interest - rate policy has been that they do not wish to continually "roll-over" maturing forward contracts. Although they have done so in the past, this was only done when it was assumed that the country's gain in reserves would be temporary. When circumstances¹ have prevented the liquidation of forward commitments in the market, liquidation was achieved with the assistance of foreign currencies obtained from international institutions. This occurred in the case of forward commitments in Italian lire during 1966². By this method, the authorities short position is transferred from operators in the exchange market to foreign monetary authorities.

As was seen, U.S. forward intervention often took place on a co-operative basis with foreign countries, the latter supporting the intervention and supplying the American authorities with their currencies. Such countries have generally taken the view that U.S. domestic interest rates should be in line with their own rates. If such co-operation thereby limits the American use of forward support as a means of gaining greater freedom for domestic monetary policy, another method which could be adopted, to offset short-term

¹i.e. a reversal in the direction of the net currency movement.

²c.f. F.R.B. Review, September 1966, page 195.

capital flows, is a greater degree of exchange - rate flexibility.

During the first part of the 1960s, the U.S. government in fact moved in the opposite direction by their buying and selling of foreign currencies near their par values.¹ For example, when they sold the mark and guilder to offset the inflow of funds into Germany and the Netherlands, they did so well within the support limits, thereby limiting the range of fluctuation of these currencies in terms of the dollar. Further, when they re-entered these two markets to offset their short positions, it was at rates close to their upper support limits; this also limited the possibility of greater flexibility in exchange rates.

However, in the late 1960s, this policy changed and we are now witnessing official support in Washington for a greater degree of exchange - rate flexibility as part of a reform-package for the international monetary system.² This public conversion of the U.S. to the idea of greater flexibility of ruling exchange - rate parities, though undoubtedly prompted by a search for a solution to its own balance of payments difficulties, is an extremely welcome development. However,

¹This point is well illustrated by Aliber in his consideration of the early period of U.S. forward intervention: op.cit., page 38.

²See Introduction, page 2 footnote 1.

it received a set-back at the Group of Ten meeting in July, when the Common Market countries reaffirmed their wish to maintain the maximum possible degree of rigidity, even though this desire is influenced more by the difficulties created by the common agricultural policy than by a serious examination of the case for flexibility on general grounds.

With regard to America's balance of payments difficulties some observations should be made as to how one can reconcile support of her policy of forward intervention with the existence of fundamental disequilibrium in her payment accounts. The first point, of course, is that since the U.S. has concentrated on foreign forward exchange markets, while only occasionally intervening to meet speculative pressures in her own market the criticisms directed against British use of forward exchange are muted, if not invalid, in this context. Of more importance, however, is the fact that, even if she did intervene on a continuous, unlimited basis in her forward market, while her balance of payments was in disequilibrium, this would be synonymous with the case of forward intervention which was rejected earlier as inappropriate and dangerous because of the strong possibility of devaluation. As a result of America's unique position in the international financial system it is not easy for the dollar to be devalued.¹ What matter

¹ c.f. Peter Jay's "Why the U.S. dollar should be Devalued" International Currency Review, March 1970.

equilibrating international trade and payments flows is a change in the parity of the dollar expressed in terms of its parity with the weighted average of all other currencies. This parity is decided by all the other 112 members of the I.M.F. acting unilaterally in their own capitals without any obligation to consult Washington.

The U.S. is free, subject to certain IMF formalities, to change the official gold price. But "since no one who was not willing to revalue against the dollar independently of this action would have any reason to do so merely because of it, this would not affect the dollar's true parity."¹ (Jay). This point is clearly explained in the U.S. Council of Economic Advisors annual report for 1970:

"...the United States clearly exercises only indirect influence over the exchange value for its currency, in contrast to the more direct control exercised by other countries." (page 141).

This, of course, is what much of the U.S. support for greater exchange rate flexibility is all about, although she undoubtedly recognises that there is a case for that independently, that is as a means of allowing the international economy to adjust its perpetual payments imbalances more smoothly.

Thus, the problem for the rest of the world, is how to

¹Ibid., page 10.

enable the dollar to devalue, in a setting where this can only be done by a weighted majority of other currencies revaluing in terms of the benchmark most commonly used: the dollar. Because of the immense difficulties which would arise in trying to achieve such a change, the dollar, in contrast to other currencies, is relatively secure from devaluation and this, therefore, must strengthen the case for her use of forward intervention in the face of speculation against the dollar. One thus has here an exception to the rule that a country should not intervene to give forward support to its currency if its balance of payments is in a state of fundamental disequilibrium!

Part III: Conclusion.

Forward - market intervention, by the monetary authorities of a country, is a useful technique for maintaining order in the international monetary system. Used in the manner practised by the U.S., such a policy "can reverse or neutralize short-term capital flows by creating profitable investment opportunities - free of exchange risk to the asset holder - that produce counterflows of direction and magnitude dictated by policy objectives of the moment."¹ However, as exemplified by Britain's adoption of forward support between 1964 and 1967, the technique can also be damagingly misused when, as in this case, it was applied "as a shield behind which it is possible to inflate with comparative impunity over a prolonged period."²

As was seen in the theoretical section of this paper, active intervention in the forward market permits a country to protect its reserves in two main types of situations. The first is when the existence of higher foreign interest rates attract funds from, or obstruct funds from coming to the

¹H.G. Grubel, Forward Exchange, Speculation and the International Flow of Capital, Chapter 19, page 160.

²Einzig, op. cit., page 545.

country under consideration. The second is when that country's currency is under speculative attack in the exchange market or when there is a general expectation that a foreign currency will be revalued. For our summary recapitulation of these two circumstances, Britain will be used as the domestic country to permit ease in exposition.

To protect the U.K. reserves in both situations, the British authorities would buy pounds, and sell dollars in the forward market, thereby increasing the forward price of the former. If they were trying to stop a covered interest arbitrage outflow, induced by an intrinsic premium on a foreign currency, the authorities would purchase forward pounds until their price equalled the interest - rate differential. As a result, interest arbitrageurs would cease to move funds out of London, on a covered basis, since the cost of forward cover has become too high.

To actively encourage an inflow of funds, the government would buy forward sterling until the latter's price exceeded the interest differential. The larger the premium created in this way, the larger will be the inflow of funds and the greater will be the increase in reserves. By their buying of forward sterling, the authorities in Britain commit themselves to the delivery of foreign currencies on the maturing of the

forward contracts. If, by the time the latter falls due, foreign rates of interest have not fallen relative to those prevailing in London, the authorities may "roll over" these contracts. They would then once more purchase forward pounds and provide the foreign currencies, resulting from the sale of spot pounds, for the liquidation of those forward contracts which have matured. In this way, new forward contracts would be created and, unless the foreign currencies formed part of the reserves, the authorities would take on a short position in these currencies until the final liquidation of the contracts.

If the government had not chosen to adopt a policy of forward support, their reserves would have been reduced as a result of the arbitrage outflow, or they would not have increased in response to the induced inflow. However, it is possible, that, under certain circumstances, the authorities forward commitment may be greater than the reserve loss which would have resulted if there had been no intervention. This comparison, which formed the basis of the Aliber-Goldstein controversy, is of particular importance if there is speculation against sterling and there is a possibility of the latter's devaluation (or a foreign currency's revaluation) while there are outstanding forward commitments. Where such parity changes are unlikely,

the buying of forward sterling on official account will affect the forward rate by the same amount as an equivalent purchase by interest arbitrageurs. If the authorities purchase a certain quantity of forward pounds at a particular exchange rate "....they reduce the amount that those engaging in covered interest arbitrage can buy at this rate on a one-for-one basis. Hence, in non-speculative situations, the size of the official forward position should correspond with the loss in reserves that otherwise would have occurred."¹

Turning to the second situation, official forward support can also offset speculative pressure against the currency, when that pressure has been caused by expectations of a devaluation of that currency or a revaluation of another currency. Speculation is likely to occur in the forward market under such circumstances since a smaller down payment is required than in the spot market, thereby letting speculators take on a larger short position. As a result of these speculative sales of (using our example) forward pounds, the price of the latter falls to a discount below the prevailing interest parity.² As this discount increases, interest arbitrageurs find it increasingly attractive to move funds out of London on a

¹Aliber, op. cit., page 29.

²This fall in forward sterling's price is necessary to encourage people to buy forward pounds, thereby taking on the other side of the forward contracts offered by speculators.

covered basis, without sustaining an exchange risk, and this leads to a drain on the reserves. An additional loss of reserves may also result from the discount on forward sterling inducing speculators to take on a short position against sterling in the spot market, this causing an immediate drain.

However, if the authorities support the forward rate, they will remove, or at least reduce, this incentive to shift arbitrage funds, thus stopping this particular source of reserve loss. In addition, speculative short positions in the spot market will also be smaller, thereby offsetting another source of loss. As with the first situation, of offsetting a perverse interest incentive, the government has to provide foreign currencies on the maturity of these contracts, with the same implications for "rolling over" and absorbing a short position until their final liquidation.

Having summarised the two situations in which forward-exchange policy can be applied, it is necessary to establish the costs and benefits of such a policy, for only then can conclusions be reached regarding advisability of use. Following the example of Grubel, this analysis will be conducted under the headings of financial effects, balance of payments effects and real social effects of intervention.

Official forward support may result in exchange profits or losses. If the authorities pursue such a policy to offset

speculation against their domestic currency, they are likely to sustain a profit since they will be purchasing foreign currencies at a relatively low price in the spot market while selling these currencies at a relatively higher price in the forward market. However, if forward intervention is used to counteract an outflow, or induce an inflow, of funds under covered arbitrage, an exchange loss is likely to result.

Grubel has summarised the situation as follows:

"....forward - exchange policy limited to the reinforcement of an existing interest rate differential, other things being equal, tends to be profitable for the government, and to be unprofitable where the policy is designed to overcome an existing interest rate differential. In terms of commitments to speculators, wherever its position on future price forecasts opposes that of the speculators, the government will profit if the speculators are wrong and lose if they are right." ¹

Yet, even if exchange losses do result, the latter should be compared with the costs which would have arisen from the use of other policies designed to protect the reserves. Such an alternative policy is interest - rate changes designed to preserve external balance. This has a positive financial cost through its increasing of the cost of servicing short-term government debt. In these direct terms, such a policy is a

¹ Grubel, op. cit., page 139.

more expensive way of protecting a country's reserves than the use of forward support. The latter has the added advantage of being a price-discrimination policy "...since it permits the authorities to make a special interest premium available to the relatively few short-term investors who may shift their funds internationally in response to interest differentials, and not to others who are unlikely to shift their funds abroad."¹ Further, an additional financial benefit of such a policy is that, as was seen in our examination of U.S. intervention, it can augment the governments freedom to use monetary policy for purely internal needs.

One final point, concerning financial costs and benefits of forward intervention, is that such profits and losses as do arise merely represent a social income redistribution, and do not involve a loss or gain of productive resources.² This is an important point which is frequently forgotten.

Turning to balance of payments effects of forward support, one can distinguish four distinct influences: interest payments to foreigners, speculation gains or losses by foreigners, changes in balance of trade, and changes in stock of capital.

¹Aliber, op. cit., page 32.

²This is assuming that no speculators or asset holders are foreigners.

The strength and direction of these vary with the circumstances of each situation; for instance, if forward intervention attracts additional funds from abroad, interest payments will increase; if it induces an outflow, such payments will be reduced. Although it is therefore difficult to generalise regarding these influences, one is reasonably sure of being correct when one says that short-term capital flows are the most important factor of the four, especially in the short-run. Further, given that the proportion of trade based on forward - exchange is small, given typical price elasticities for imports and exports, and given the normally small range of forward - exchange movement, the balance of trade effect will generally be relatively small. However, since in the long-run the importance of these two factors could be reversed, it is difficult to be more than speculative in ones conclusions regarding the effects of forward support on the balance of payments.

As for the real costs and benefits of forward exchange policy, one can isolate three categories. The first is the change in the transfer of resources to foreigners. To the extent that the above footnote is invalid, and some forward - exchange speculators are foreigners, the latters' profits represent a reduction in the domestic country's productive

resources, while interest payments made to them represent a resource transfer. However, since the capital, on which this interest has been paid, has probably contributed towards an augmentation of the receiving country's productivity in excess of the interest payments, these payments are not a social loss. Further, to the extent that they are taxed, they form a net gain. As before, the opposite is true when forward intervention induces an outflow of foreign short-term capital.

The second category is the resource cost of selling and buying exchange. However, this is likely to be negligible and warrants no further consideration. The final category is the important gains which arise from forward intervention permitting the country to pursue a policy of full employment independent of considerations of external balance. As Britain, particularly, has learnt, domestic monetary policy, pursued with the aim of maintaining full employment, price stability and a fixed exchange rate, frequently conflicts with requirements for external balance. As Grubel has written:

"In the typical situation, a certain domestic interest rate is required to maintain full employment but it is too low, relative to that prevailing in other countries, to attract the short-term funds necessary to tide the country over a temporary, perhaps cyclical, imbalance in its external payments. Raising the interest rate would attract the foreign funds but would cause under-employment of domestic resources." ¹

¹op. cit., page 142.

Thus, by adopting forward support as a monetary technique operating on the external balance, this policy conflict, resulting in loss of output, can be avoided. This is probably the largest real benefit to be gained from pursuing a policy of forward intervention; yet, as was seen above¹ in our consideration of U.S. intervention, such a gain may be impossible to achieve because of the requirements of international monetary co-operation.

Having briefly examined the balance sheet of costs and benefits resulting from forward - exchange policy, we are now in a position to reach some conclusions regarding advisability of use. Taking into consideration the theoretical analysis of Chapter 2, and the practical issues as brought out by the examination of Britain's and America's use of forward support in Chapters 3 and 4, I find myself agreeing with the view of most writers on the subject (with the exception of Aliber) who argue that forward intervention should only be used to offset speculation in forward exchange when devaluation is unlikely. I concede that this conclusion may not always be correct since, as was seen earlier,² it depends on a comparison of two sides of an inequality and it is impossible to say categorically

¹c.f. above, page 124

²c.f. above, page 54

which will be the greater, since they are influenced by the characteristics of each situation. Yet, since it is important for an economist to provide a positive policy recommendation to the government and not a non-committal analysis, I would say that, in the majority of cases, the book-losses resulting from forward intervention followed by devaluation would be unacceptably high. Although I am only speculating (since it is as yet unknown when in November 1967 Britain dropped its support of forward sterling) it would seem likely that it was this realisation which finally forced the abandonment of Britain's policy of unlimited forward intervention just prior to devaluation. Seeing the inevitability of devaluation, it must have been realised that forward support was no longer tenable. For the sake of academic curiosity, this is one particular circumstance where it would be desirable for Britain to abandon the secrecy with which it surrounds forward market policy and to emulate more closely the example of America's public disclosure of details regarding the timing, magnitude and nature of intervention!

If devaluation is avoidable, then forward intervention is an extremely useful policy for protecting a country's reserves against perverse interest incentives and speculative attack. In contrast to capital controls, the policy can be quickly applied, and is immediately effective in large or small

amounts. Further, it can be reversed, or stopped completely, without creating great difficulties. Thus, forward support seems distinctly preferable to changes in interest rates since, as we have seen, the latter can conflict with other policy objectives.

In offsetting speculative attacks on a currency, forward intervention should only be used where such speculation is in response to temporary and reversing disequilibrium in the country's balance of payments. It should not be applied, as in the case of Britain between 1964 and 1967, where speculation is against fundamental disequilibrium. In the first situation, the very act of intervention is a sign that the government is prepared to meet the speculation and guarantee its exchange rate's parity. In the second situation, where the government is uncertain about its ability to avoid devaluation, it is prudent to refrain from supporting the forward rate even though this means losing the immediate benefits which can arise from such a policy, particularly in terms of real benefits.

Having thus answered the specific questions posed at the beginning of this paper, it would be useful to go on to make comments of a more general nature. One of these concerns the importance of co-operation between theory and practice in Forward Exchange. As Einzig has written, in a paper on this

topic:¹

"On the one hand, we have a highly intricate system, the almost infinite variety of technical details of which cannot be mastered adequately without a thorough practical experience. On the other hand, we have an important set of economic principles arising from the study of that system with all its manifold broader implications, which cannot be mastered adequately without being familiar with methods of theoretical analysis."

However, because of the failure of many Foreign Exchange dealers to be trained in theoretical aspects of their profession, and a comparable failure by theoretical writers on Forward Exchange to be familiar with practical aspects, this co-operation has often not existed with the result that there has proved to be a gap between Forward exchange theory and practice. This has had important consequences in many past instances, two of the latter having already appeared in the analysis above.

The first, reference to which was made in the examination of the British Treasury's written and oral evidence to the Radcliffe Committee, was the surprising delay in acknowledging the existence of the Euro-dollar market. Although the latter had already become considerably important by 1957, the report of the Radcliffe Committee seems to have been produced in total ignorance of it. The report, and especially the evidence to the Committee, was supposed to represent the closest knowledge

¹P. Einzig "The Relations between Practice and Theory of Forward Exchange". Banca Nazionale del Lavoro; Quarterly Review, September 1962, page 227.

of the workings of the monetary system; yet in neither is there to be found the slightest reference to the existence, let alone the operations, of this market.

In addition to its impact on Forward Exchange, that device was bound to have affected already Money markets and the domestic supplies of credit, a fact which Sir Oliver Franks, a chairman of one of the clearing banks and a member of the Radcliffe Committee, must have known. If the gap between theory and practice had not produced such a glaring oversight, the realisation of the Euro-dollar market's influence might have altered the Committee's recommendations. These, in turn, might have brought home to many economists the realisation that "to deal with international and even domestic monetary problems without allowing for the influence of Forward Exchange is like performing Hamlet without the prince, or at any rate without the gravedigger".¹

A second instance of the gap between the theory and practice of Forward Exchange involved an influential economist at the I.M.F., Tsiang, putting forward a false theory as a result of being apparently unfamiliar with forward exchange practice. As was seen above,² he argued that when the authorities have to renew maturing forward contracts, they

¹Einzig, op. cit., page 230.

²c.f. page 34 above.

thereby double their commitments. It was left to Auten to point out that renewal means buying or selling spot against forward exchange (the "rolling over" process to which we have already alluded) and that, in consequence, the overall result is a preservation of the original position. Such an elementary piece of information would surely have been common knowledge in any Foreign Exchange Department, let alone at the Fund!

There are many other instances of important deficiencies arising from inadequate contact between the theoreticians and practitioners of Forward Exchange, the details of which can be found set out in Einzig's article. They all underline the necessity of closer co-operation in the future if knowledge of Forward Exchange among economists is to keep pace with its development, and increasing importance, in the real world.

This reference to the future prompts some consideration of how the place of official forward intervention in the international monetary system will be affected if some of the reforms to that system, which are at present being considered, are ever implemented. The reforms which this author has in mind are those relating to adjustment and liquidity.

That reforms have been proposed for the international monetary system is now well known to even the most casual

newspaper reader. According to some of the latest academic studies on the subject,¹ there are three logically distinct, although interrelated problems, commonly referred to as the problems of international liquidity, of payments adjustment and of confidence. This paper is obviously not the place to analyse these problems, or the many reforms which have been proposed to help overcome them. A cursory mention should be made, however, of how these factors might influence the future development of forward exchange policy.

It is generally acknowledged that these three problems are closely related. It is clear that the more effective the adjustment mechanism becomes, perhaps through a greater degree of exchange rate flexibility, the smaller will be the need for liquidity to finance deficits since more effective adjustment makes deficits smaller and eliminates them sooner. There are

¹H.G. Johnson, "The World Monetary Crisis," Encounter, August, 1970.

W.S. Salant, "International Reserves and Payments Adjustment" in Banca Nazionale del Lavoro Quarterly Review, September 1969.

R. Triffin, "The International Monetary System of the 1970s". October '69.

Alan Day, "The International Monetary Situation". February '69.

International
Currency
Review.

Otmar Emminger "The Brave New World of S.D.R s.". August '69.

two forces working here which could affect forward - exchange policy. The more speedy the elimination of disequilibrium through exchange rate adjustment, the less need there would be for official forward support to offset pressures created by temporary balance of payments difficulties. Further, the smaller the stock of available liquidity, in the form of gold and currencies, the less a government will be prepared to put these at any risk by intervening forward, especially if there is any possibility of devaluation. These two forces, of adjustment and liquidity, are also related in a way that operates in the opposite direction. The larger are a country's liquid international assets, the less is the pressure on it to eliminate a deficit, and the more it will be prepared to mortgage some proportion of these assets by supporting the forward rate to meet the speculative and other pressures created by this deficit.

Similarly, there is a two-way relation between the liquidity of a reserve - currency country and reserve - switching induced by lack of confidence in that currency. The larger is such a country's liquidity, the less likely it is that countries possessing assets denominated in its currency will doubt the maintenance of that currency's par value and therefore the less likely they are to withdraw funds owing to lack of confidence. This reduces the need of

official forward support to offset such a capital outflow.

Operating in the other direction is the fact that the greater is the danger of foreign holders converting assets in a country's currency into other currencies, the greater are the reserves needed by the country in which they hold those assets. Therefore, on the one side, high liquidity both reduces the danger of withdrawals and increases the ability to withstand them when they occur; on the other, the greater the danger of such withdrawals, the greater is the liquidity needed. The net effect of all this on the need for forward support is obviously difficult to determine.

A corresponding two-way relation between adjustment and reserve-switching further complicates the issue. Given the amount of a country's liquidity, the more effectively that country adjusts to eliminate payments deficits, the less likely it is that foreign-asset holders will liquidate these assets through fear of devaluation and therefore the less is the danger of reserve-switching. This would seem likely to reduce further the need for forward support to counteract a confidence - induced outflow of capital. Operating in the other direction, however, is the fact that instability in the holdings of a country's assets can increase the burden on the adjustment process by converting a small deficit into a large one, thereby making the previously

satisfactory degree of adjustment quite inadequate.

This bewildering array of forces and counter-forces should make apparent how purely speculative any attempt would be to isolate the overall effect on forward - exchange policy, of any reforms designed to increase the liquidity of speed adjustment of, or improve confidence in, the international monetary system. However, this should in no way preclude economists from attempting to examine these effects since they will undoubtedly influence the need for, and operation of, official forward intervention in the future.

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