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No. 46, November 1980

Sterling's Managed Float: The Operations of the Exchange Equalisation Account, 1932-39

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PETER B. KENEN, *Director*
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1 INTRODUCTION

> There shall be established an account, to be called the Exchange Equalisation Account, which shall be under the control of the Treasury . . . [who] may cause any funds in the Account to be invested in securities or in the purchase of gold in such manner as they think best adapted for checking undue fluctuations in the exchange value of sterling (U.K. Finance Act of 1932, Part IV; reproduced in Sayers, 1976, Appendix 25).

The Exchange Equalisation Account (EEA) thus established by the Finance Act of 1932 constituted an essential part of British economic policy after Britain's departure from the gold standard in 1931, and it remains an essential element in Britain's monetary arrangements today. The EEA enabled the monetary authorities (the Bank of England and the Treasury) to direct monetary policy in the 1930s toward domestic objectives and to manage the floating pound by intervention in the gold and foreign-exchange markets.

The EEA's operations were secret, with the result that the motives and methods of its managers were open to interpretation and dispute. Within a year of its establishment, American observers in particular came to regard the EEA as an ingenious but somewhat sinister device for manipulating the sterling-dollar exchange rate. This interpretation owes much to the large increase in the published gold holdings of the Bank of England and small increase in the exchange value of the pound in the face of large capital outflows from the United States early in 1933.[1] British government spokesmen, on the other hand, claimed then and later that the EEA was merely attempting to smooth out short-term exchange-rate fluctuations due to seasonal or speculative factors. Doubts and differing interpretations, on both sides of the Atlantic, remained unresolved at the end of the decade (Waight, 1939; Brown, 1940; Pum-

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[1] For a shrewd contemporary assessment by an American academic observer, see Comstock (1933); see also Hall (1935).

phrey, 1942), when this particular experiment in the management of a floating pound was brought to an end by wartime pegging and the imposition of exchange controls.

United Kingdom exchange controls were to last for forty years—until October 1979. More important, the perceptions lying behind the postwar Bretton Woods system concentrated on the virtues of fixed exchange rates to the neglect of the possibility of managed floats. The 1930s were viewed as the classic example of the dangers inherent in floating exchange rates (Nurkse, 1944). Subsequent proponents of flexible exchange rates emphasized the benefits of *freely* floating rates, arguing on *a priori* grounds that private speculation would be stabilizing, so that official intervention would be unnecessary (Friedman, 1953, 1969; Johnson, 1969).

Developments in the 1970s invite another look at the operations of the EEA in the 1930s. The moves to floating exchange rates by the major industrial countries have not only revived interest in earlier experiences with floating exchange rates but have led to the development of new criteria for judging the acceptability of the various techniques of exchange management. Like sterling in the 1930s, the major currencies have not been floating freely; furthermore, recent theoretical and empirical work on the determination of exchange rates suggests that managed floating will persist for as long as floating does because of the possibilities for instability in floating exchange rates (Dornbusch and Krugman, 1976; Dornbusch, 1978; McKinnon, 1979). The resulting need to distinguish between "clean" or "dirty" management has been recognized in the International Monetary Fund's 1974 guidelines and its 1977 decision on surveillance of members' exchange-rate policies, as well as in several academic contributions (International Monetary Fund, 1974, 1977; Black, 1973, 1977; Mikesell and Goldstein, 1975; Ethier and Bloomfield, 1975; Tosini, 1977; Artus and Crockett, 1978). It will therefore be of interest to apply the new criteria to the behavior of sterling in the 1930s.

A less well-known development provides another reason for looking at the 1930s experience: British government records of the time have recently become available. The Bank of England carried out EEA operations on behalf of, and with the advice and consent of, the Treasury—in itself a major innovation in peacetime policy-making. As a result, Treasury papers reveal many of the motives behind EEA operations and much about the methods used to manage the exchange rate.[2] Not only do these records permit a reassessment of the role of exchange-rate policy in

[2] They can be supplemented, as they have been here, by the recent official history of the Bank of England (Sayers, 1976).

British interwar economic management, but they provide us with more detailed information on the targets and tactics of exchange-market intervention for the 1930s float than we have for more recent floats.

Chapter 2 describes the reasons for the establishment of the EEA in 1932 and for the form it took. These reasons were a desire to prevent an appreciation of the pound after its initial depreciation following the suspension of the gold standard, and the authorities' perceptions of their problems with respect to intervention in the foreign-exchange market in the winter of 1931-32. Chapter 2 also outlines the mechanism by which the EEA could be used to sterilize partially the effects of inflows or outflows of foreign exchange on the domestic money supply when the authorities were intervening in the foreign-exchange markets.

Chapter 3 continues the historical narrative by utilizing Treasury records to identify the exchange-rate and balance-of-payments targets chosen at various times between 1932 and 1939. An important concern here is to trace the evolution of the authorities' attitudes toward the management of sterling over the period in response to the major events in the international economy.

Chapter 4 examines the tactics by which the Treasury and the Bank of England sought to achieve their targets. Here the analysis also draws on the data on gold and foreign-exchange holdings that are described in the Appendix.

Chapter 5 reflects preoccupations of the 1970s. It begins with an assessment of Britain's reasons for adopting a managed float in the 1930s and moves on to consider whether and to what extent that float should be regarded as "clean" or "dirty" on modern criteria. The discussion lends support to the view that there is no unambiguous way to gauge the dirtiness of a managed float without detailed knowledge of the authorities' intentions and the international environment in which they are operating.

2 THE EXCHANGE EQUALISATION ACCOUNT

Britain formally abandoned the gold standard on September 21, 1931, in the wake of a political crisis at home, a financial crisis in Europe, and two years of world slump. Since 1929, prices in Britain had fallen by approximately 10 per cent, real incomes by 5 per cent, and exports by 42 per cent in value and 30 per cent in volume. Unemployment was over two million (15 per cent of the labor force and over 20 per cent as officially measured), and the balance of payments was in deficit on current account (Feinstein, 1972, Tables 3, 4, 57, 58, and 65; see Table 1). Increases in Bank rate and official borrowing abroad failed to halt a capital outflow, and, with little in the way of planning for future policy, the authorities decided to leave the gold standard (Moggridge, 1972, pp. 193-198; Howson, 1975, pp. 75-82; Sayers, 1976, Chap. 17).

By March 1932, when the pound had depreciated by 30 per cent from its par value of U.S. $4.86, to $3.40, the Treasury had formulated the main lines of medium-term economic policy. Senior officials, notably Sir Richard Hopkins and Frederick Phillips, recommended to Chancellor of the Exchequer Neville Chamberlain and to the Cabinet that the authorities should not commit themselves to a return to gold, should institute a "cheap money policy" of low long-term and short-term interest rates, and should maintain the exchange rate at about $3.40 until British wholesale prices had risen by at least 25 per cent. They expected that low interest rates would stimulate domestic investment and hoped that a low external value for the pound would arrest the decline in exports and improve both employment and the balance of trade (Howson, 1975, pp. 82-86). The Treasury put its principles into practice by converting the 5% War Loan 1929/47, which constituted nearly a third of the outstanding national debt, into 3½% War Loan 1952 and After and by establishing the EEA. The conversion was announced on June 30, 1932, and was accompanied by a lowering of Bank rate to 2 per cent; the EEA was announced in the budget on April 19, 1932 (Howson, 1975, pp. 71-74, 88-89; Sayers, 1976, pp. 430-447).

Exchange-Market Intervention, September 1931–February 1932

Meanwhile, the Bank of England had to cope with more immediate problems, including repayment of the foreign credits obtained by the Bank and the government in August 1931 in their unsuccessful attempt to maintain the gold standard. These credits amounted to £130 million at the old par rates of exchange, payable in U.S. dollars and French francs. When the gold standard was suspended, the Bank was holding

TABLE 1

BALANCE OF PAYMENTS ON CURRENT ACCOUNT, ANNUAL, 1930-38
(in millions of pounds)

Year	*Imports*	*Exports*	*Net Invisibles*	*Current Balance*
1930	£953	£670	£298	£ 15
1931	786	464	208	—114
1932	641	425	154	— 62
1933	619	427	174	— 18
1934	683	463	188	— 32
1935	724	541	196	13
1936	786	523	223	— 40
1937	950	614	279	— 57
1938	349	545	220	— 65

SOURCE: Ware (1974, p. 79).

only £134 million in gold and £16 million in foreign exchange, the bulk of it in the Issue Department as backing for the domestic note issue, and the rest in the Banking Department undisclosed to the Treasury (Sayers, 1976, pp. 217-218 and Appendix 37; Moggridge, 1972, pp. 183-184). The first question to be discussed by the authorities, however, was whether the pound could or should be pegged and, if so, at what rate. The initial opinion—not surprisingly, in light of the reserve figures—was that pegging did not seem feasible. Indeed, the Bank was worried by the fact that the pound did not fall below $4.00 immediately after the suspension; fearing a large fall later, it decided on September 24 to give the pound a nudge downward by selling sterling. According to Sayers (1976, p. 419), "this . . . was the real beginning of the policy that only found its way on to the statute book when the Exchange Equalisation Account was established in mid 1932."

At the end of September, when the pound was down to $3.75, the Bank, with the cooperation of the Treasury, began deliberately to build up foreign-exchange reserves for the purpose of future exchange support as well as for repayment of the August credits. Hopkins reported to the Chancellor of the Exchequer on October 6 that the Bank had already bought a small quantity of dollars and francs. Further, "J. P. Morgan and Co. [in New York] have advised the Bank that they believe that, if so authorised they could pick up a very substantial sum of dollars. . . . The Deputy Governor [of the Bank] hopes you will be prepared to give secret authority to J. P. Morgan and Co. . . . to undertake the operations on behalf of the Treasury." The dollars were to be bought for the Treasury's existing Exchange Account, which had previously been used to accumulate dollars for war-debt payments to the United States

and for which Morgans had been the Treasury's agents. In this way, the amount of the Bank's reserve accumulations would be hidden, because "Morgans would then be (secretly) acquiring dollars technically for the Treasury. . . . The dollars would pass through the . . . Exchange Account to the Bank but no question of publication of the Exchange Account transactions would arise."[1]

In the following six months, besides building up its own gold and foreign-exchange holdings, the Bank purchased dollars for a Treasury Special Account formed from part (£20 million) of the Exchange Account, holding the dollars in new accounts opened with the Federal Reserve Bank of New York, Morgans, and First National City. The Exchange Account, which held gold and dollar securities, continued to be used for its original purpose of accumulating dollars for war-debt repayments.[2] The resulting holdings of the authorities are shown in Appendix Tables A-1 and A-2.

When the first opportunity for exchange support occurred in November 1931, the Bank did not intervene, preferring to conserve the newly acquired reserves to repay the recent overseas borrowing. Most of the borrowing was, in fact, repaid by March 1932. Total reserves fell by only £11 million in November despite the repayment of £20 million (Table A-2). The pound fell to $3.24 on December 2. When the Government expressed alarm, the Bank responded to the Treasury that the weakness was due to "the narrowness of the market and the general lack of confidence in the positions of institutions at home and abroad" and to switching by French asset holders from sterling to dollars. Governor Montagu Norman, summoned to discuss the position with the Chancellor, said, "it must be recognised that we have not the means to peg exchange."[3]

When the outflow reversed itself early in December, the Bank resumed purchases of dollars for the Treasury Special Account, stepping them up in January when a sustained inflow began.[4] This inflow led directly to the invention of the EEA, as well as to a Bank-rate reduction in February.

[1] Hopkins to Chancellor of the Exchequer, Oct. 6, 1931, T.160/444/F12899; see also Sayers (1976, pp. 419-420). In this and succeeding footnotes, a document or a series of documents in the Public Record Office is followed by the call number of the file in which it is to be found.

[2] Treasury Special Account and Exchange Account assets, Mar. 31, 1932, T.160/409/F1454; Treasury Deposit Accounts ledgers, T.252/6; British Government Foreign Accounts, Apr. 1, 1929 to Mar. 31, 1932, T.253/5. On the earlier use of the Exchange Account, see files T.160/414/F6779/1 and 2.

[3] Waley to Leith-Ross, "Sterling Exchange Movements," Nov. 27, 1931, T.160/403/F12600/09; "The Exchange Position," Dec. 8, 1931, T.175/56 and T.160/403/F12600/09. See also Sayers (1976, pp. 420-422).

[4] "Treasury Special Account," T.160/444/F12899.

The Invention of the EEA

Late in February, when the pound was at $3.48, Sir Charles Hambro, on the Bank's Exchange Committee, suggested that the Bank should prevent a rise in the pound beyond $3.65 and should then allow a further reduction in Bank rate (Sayers, 1976, p. 425). By this time, however, Treasury officials had decided they would prefer a lower pound. The capital inflow was "a nuisance," threatening to undo a reflationary policy. Although Phillips agreed with the Bank that the authorities should build up their gold and foreign-exchange reserves, which had long been inadequate given the increase in London's short-term liabilities in the 1920s, and that they could buy reserves more cheaply if the pound were to rise, he did not agree with the proposal that the pound should be allowed to appreciate. He therefore suggested a rapid reduction of Bank rate from 5 to 3 per cent and the continued purchase of both gold and foreign exchange by the Bank, with the Treasury taking financial responsibility for any exchange losses incurred by the Bank. He went on: "If the reduced Bank Rate, the loosening of credit in this country and the purchases of foreign exchange do not cure the inflow it will be necessary to let the pound respond in some degree. But I should keep any rise slow. . . ."[5]

This memorandum, written on March 5, 1932, was followed by an undated outline, in Phillips's handwriting, of two alternative plans for a new Treasury account to enable "the Bank and/or the Treasury . . . [to] acquire additional foreign exchange and/or gold up to a total of say (£150) millions."[6] According to Sayers (1976, p. 425), these notes reflected discussions with the Bank beginning in mid-March.

The Bank of England regarded its ability to purchase foreign exchange and gold as limited by its small sterling assets, by a desire to keep foreign-exchange operations secret, and by the possibility of loss on large foreign-exchange holdings if the pound were to appreciate. These problems were interrelated, involving both technical legal difficulties and more important economic considerations. The Bank was still a private institution in 1932. It could hold foreign exchange in either the Banking Department or the Issue Department and gold in the Issue Department; profits and losses on assets held in the Issue Department as backing for the Bank of England note issue accrued to the Treasury. The Bank was obliged to publish a weekly return, which included the amount of gold (valued at the statutory price of 77s. 10½d. per standard ounce, equivalent to 85s. per fine ounce) and securities held in the Issue Department as backing for the note issue. If the Bank held foreign exchange in the Banking De-

[5] Memorandum by Phillips, Mar. 5, 1932, T.175/57.
[6] Phillips, "Objects Sought," no date, T.175/57.

partment, as it had done to some extent in the 1920s, it would have to bear any exchange losses itself; if it held foreign exchange in the Issue Department, the published figures would betray the existence of the operations (for evidence that they did, see Brown, 1940, pp. 1108-1110). Furthermore, purchases of gold and foreign exchange would increase high-powered money unless the Banking Department conducted offsetting open-market operations. The Bank's small holdings of domestic securities, compared with the possible size of capital inflows, restricted both its purchases of foreign exchange and its ability to offset the effects of the inflows on the monetary base. The plans described by Phillips were designed to get round these problems.

Under the first plan, all purchases and sales of foreign exchange and gold would be brought into a single account under the Treasury's control. The account would be an enlarged version of the old Exchange Account with the power to borrow up to £200 million. The practical advantages of this plan were "very great": it was simple and it surmounted all the technical difficulties. The Bank would not need to hold foreign exchange but could do so in the Issue Department and also, at its own risk, in the Banking Department. The objection to the plan was that "on the face of it it appears to dissociate the Bank from its natural functions as the holder of the main reserves of the country and to imply a greater degree of interference by the Treasury in banking matters than most people would think desirable."

Under the second plan, therefore,

> . . . an Exchange Equalisation A/c would be established under the control of the Treasury. It would replace the existing Exchange Account and it would be increased by borrowing say an additional £100 millions.
>
> The purpose of this account would be two fold. The plan contemplates that substantial amounts of exchange will be held by the Bank of England and the Exchange Equalisation A/c would as its name implies act as a buffer absorbing all gains or losses on exchange transactions and leaving the Bank accounts to function in a perfectly normal manner. But in addition the Exchange Equalisation A/c could itself hold quite substantial amounts of foreign exchange.
>
> The main advantage of this plan is that on the face of it it leaves the main control of the operations in the hands of the Bank of England. It involves, or at any rate appears to involve, much less direct interposition of the Government than Plan I.[7]

A more formal version of the second plan was sent to Deputy Governor of the Bank Sir Ernest Harvey on March 18 and recommended to the

[7] Phillips, "Plan I" and "Plan II," no date, T.175/57.

Chancellor a few days later for inclusion in the forthcoming Finance Bill (the budget). The plan would provide additional resources with which to buy foreign exchange, transfer the losses and profits on foreign-exchange transactions to the government, and avoid the complications related to the Bank's accounts. The Bank was expected to purchase gold and foreign exchange for its own account as well as for the EEA. The arrangement was originally intended "merely to supplement action by the Bank,"[8] although in subsequent years the practice of the authorities turned out to be more like that envisaged in Plan I.

The Treasury originally suggested that the borrowing limit of the EEA should be £100 million; the continuing heavy inflow in April 1932 led the Bank to propose £150 million. In recommending the latter sum to the Chancellor, Hopkins pointed out that it would allow an increase in total gold and foreign-exchange reserves on the order of £275 million. The EEA could hold up to £175 million, after allowing for the addition of the Exchange Account's dollar holdings and deduction of the Bank's loss on repayment of the central-bank credits, and the Bank could hold £100 million in the Issue Department and the Banking Department (on top of the existing £120 million). Hopkins also pointed out that the rationale was "the desire to keep *down* the pound," although "we cannot . . . put it quite as bluntly as that" to Parliament.[9]

During the budget's passage through Parliament, the Bank built up substantial holdings of dollars and francs in the Issue Department while the Treasury Special Account was being run down (Sayers, 1976, p. 428; Appendix Table A-2). The Bank also sold some of its dollars and francs to the Treasury for the purchase of gold in New York and Paris, and the Treasury sold an equivalent amount of gold to the Issue Department.[10] The Bank thus built up its gold reserves substantially during this period. It also continued to hold significant amounts of foreign exchange in the Issue Department for a year after the EEA officially came into operation on July 1, 1932 (Table A-2; Sayers, 1976, p. 430).

The Mechanism of the EEA

On its opening, the EEA was provided with the assets of the old Exchange Account, which by then amounted to £20 million, and with the £150 million authorized in the budget. The transfer of funds was made

[8] Memorandum marked "Sent to Sir E. Harvey, 18/3/32"; memorandum by Phillips, Mar. 22, 1932, T.175/57.

[9] Memorandum by Phillips, Mar. 22, 1932, T.175/57; Hopkins to Chancellor of Exchequer, "Exchange Equalisation Account Proposals," Apr. 6, 1932, T.175/57, T.188/48, and T.171/301.

[10] Foreign-exchange statements of May 27 and June 10, 1932, T.175/71; note by Hopkins, May 25, 1932, T.175/57.

as soon as the Finance Act became law; the cash not immediately required was lent back to the general government funds by investment in tap Treasury bills carrying a nominal interest rate. (The rate would have been zero but for the provisions of the 1877 Act under which Treasury bills were issued.)[11] This arrangement, which the Treasury apparently regarded as an integral part of the EEA scheme,[12] had the important result of providing the possibility of sterilizing the effects of reserve changes on the domestic money supply. An EEA purchase of foreign exchange would both increase cash in the hands of the public and reduce the EEA's holdings of Treasury bills. If the government then increased by the same amount the issue of Treasury bills to the market at the next tender, the cash supplied to the public by the EEA would be offset by the withdrawal of cash in payment for the Treasury bills.

This offsetting procedure did not provide complete sterilization, however, for several reasons. First, the procedure was potentially deflationary unless the EEA purchase of foreign exchange resulted from a capital inflow that took the form of a demand for British Treasury bills. Otherwise, the London banks could find themselves with increased deposits and unchanged cash reserves. If the authorities sold Treasury bills to the banks (who were major holders of Treasury bills) to mop up the cash injected into the system by the EEA's sale of sterling, they would reduce the ratio of reserves to deposits and might thus force the banks to cut back their lending (Waight, 1939, Chap. 6; Lees, 1953). Such an effect, however, could easily be counteracted by the authorities by open-market purchases of domestic securities or rediscounting Treasury bills.

Second, the offsetting procedure was not automatic. The supply of Treasury bills *to the market* was determined not only by the operations of the EEA but also by the authorities' funding operations and departmental holdings of tap Treasury bills. In these two ways, the authorities in the 1930s drastically *reduced* the amount of Treasury bills held by the market. This is clearly shown in Table 2, where official and market holdings of Treasury bills are shown separately. The EEA's holdings of Treasury bills fell when foreign exchange or gold was purchased and rose when foreign exchange was sold and when the EEA's total resources were increased (as in 1933 II), but the market's holdings of Treasury bills often *fell* or failed to rise when the EEA's holdings fell.[13] This

[11] Treasury bills were issued either on tap—i.e. on demand—to government departments with spare cash or by tender each week to the public.

[12] "Exchange Account and Exchange Equalisation Account," Sept. 6, 1932; Phillips, "Exchange Equalisation Account," June 21; and notes by Waterfield, June 22 and 24, 1932, T.160/565/F13039/1.

[13] Table 2 also shows that contemporary estimates of EEA intervention based on changes in the Treasury bill issue, such as Paish's (1935, 1936, 1937), failed to reflect the true amount of such intervention.

lowered Treasury bill rates but turned out to be deflationary, because it reduced the amount of Treasury bills held by the banks as secondary reserves of liquid assets (Nevin, 1955, pp. 118-154; Howson, 1975, pp. 101-102).

TABLE 2

TREASURY BILLS, QUARTERLY, 1932 I TO 1936 II

(in millions of pounds)

End of Quarter	*Total Outstanding*	*Held by Issue and Govt. Depts.*	*Held by EEA*	*Held by Market*[a]
1932:				
I	£604	£ 94	—	£511
II	719	70	£130	519
III	866	135	102	629
IV	928	89	93	749
1933:				
I	776	134	24	619
II	970	171	214	585
III	988	173	254	561
IV	939	99	213	627
1934:				
I	800	149	200	451
II	848	164	202	482
III	823	184	209	420
IV	892	201	231	460
1935:				
I	799	206	222	371
II	877	196	200	481
III	899	181	140	578
IV	898	194	157	547
1936:				
I	763	117	125	521
II	805	150	42	613

SOURCE: Howson (1975, Appendix 2).

[a] Includes holdings by Banking Department for which no information is available.

Nevertheless, sterilization was substantial. Table 3 compares the behavior of the monetary base, or high-powered money (defined here as currency in circulation plus the reserves of the London Clearing Banks), with that of official gold and foreign-exchange reserves. Changes in official reserves, especially large positive changes, were not in general allowed to affect high-powered money to anything like the same extent. There was one exception, in 1932 II, when the monetary base was deliberately expanded to ensure the success of the War Loan conversion operation. High-powered money also tended to rise with official reserves in 1936-37, but the increases were considerably smaller.

Sterilization had also been carried out by the Bank under the interwar gold standard from 1925 to 1931. Increases in official reserves in the

TABLE 3

GOLD AND FOREIGN-EXCHANGE RESERVES AND HIGH-POWERED MONEY, QUARTERLY, 1931 III TO 1939 II

(in millions of pounds)

Quarter	*Total Gold and Foreign Exchange*[a] *(R)*	*High-Powered Money*[b] *(H)*	$\triangle R$	$\triangle H$
1931:				
III	£179	£519	−£ 14	−£ 7
IV	210	533	31	14
1932:				
I	241	524	31	− 9
II	262[c]	540	21	16
III	252[d]	539	− 10	− 1
IV	248[d]	559	− 4	20
1933:				
I	362[d]	557	114	− 2
II	394	570	32	13
III	359	569	− 35	− 1
IV	370[e]	580	11	11
1934:				
I	423	575	53	− 5
II	430	561	7	−14
III	412	569	− 18	8
IV	414	595	2	26
1935:				
I	430	577	16	−18
II	457	596	27	19
III	495	588	38	− 8
IV	494[d]	623	− 1	35
1936:				
I	522	594	28	−29
II	618	630	96	36
III	638	646	20	16
IV	706	680	68	34
1937:				
I	706	666	0	−14
II	792[f]	693	86	27
III	828	697	36	4
IV	845[f]	713	17	16
1938:				
I	834	697	− 9	−16
II	794[f]	705	− 40	8
III	694	687	−100	−18
IV	615[f]	709	− 79	22
1939:				
I	582	686	− 23	−23
II	530	704	− 52	18

SOURCES: Reserves (R) from Table A-3. High-powered money (H), the sum of currency in circulation and the reserves of the London Clearing Banks, from Bank of England, *Statistical Summary*, for appropriate year.

[a] Last Wednesday of quarter, at then current prices and exchange rates.

[b] Average for last month of quarter.

[c] July 7, 1932. [d] Last day of month. [e] Dec. 23, 1933. [f] Gold holdings only.

early years (up to 1928) were not usually accompanied by increases in high-powered money, and—both then and later—reductions in reserves were allowed to affect the monetary base (Moggridge, 1972, pp. 147-153). As a result, high-powered money gradually declined through these years (Howson, 1975, pp. 43-44).

After the establishment of the EEA, the downward trend of high-powered money was reversed. High-powered money rose until 1937, but more slowly than gold and foreign-exchange reserves. Its growth was particularly slow between June 1933 and March 1934. The behavior of the money supply (defined here as currency in circulation plus the total deposits of the London Clearing Banks) reflected these movements in high-powered money. While high-powered money grew by 30 per cent (5 per cent per annum) over the years 1932-36, the money supply grew by 34 per cent (6 per cent per annum) over the same period. When the growth of high-powered money slowed down between June 1933 and March 1934, the money supply actually fell. The Bank of England had been deliberately expanding the monetary base in 1932, but it ceased to do so early in 1933. At the same time, the authorities' funding operations had cut the supply of Treasury bills (see Table 2) and hence the banks' secondary reserves. These two factors combined to produce a fall in bank deposits. When the growth of high-powered money picked up again, the money supply began to rise again and grew faster than high-powered money, thanks to a rise in the banks' deposit-reserve ratio (Howson, 1975, pp. 99-102). In and after 1937, monetary growth ceased with the end of growth in high-powered money, reinforced by a shortage of Treasury bills and hence of secondary reserves that caused declines in the banks' deposit-reserve ratio (Howson, 1975, pp. 133-135).

It would thus appear that the authorities did not take full advantage of their opportunities for sterilizing the monetary impact of reserve changes. It is noticeable, for instance, that the periods of slow monetary growth roughly coincided with periods of declining reserves, at least after early 1933. Although considerably more expansionary, this pattern bears some resemblance to that of the 1920s. There appear to be two reasons for this pattern.

One reason is the authorities' persistent attempts (which had begun in the 1920s) to reduce the floating debt, especially the volume of market Treasury bills, and to lengthen the average maturity of the national debt. One intention behind these attempts was to reduce the banks' holdings of Treasury bills, so that the banks would not be able, as they had been in the early 1920s, to counteract monetary squeezes by simply failing to renew maturing Treasury bills.

The other reason is that the authorities had in fact secured the mone-

tary independence they desired. The cheap-money policy was a low *interest-rate* policy, and the authorities found themselves able to maintain historically low interest rates for several years after the establishment of the EEA. Short-term interest rates were below 1 per cent, long-term government bond yields were around 3 per cent from the time of the conversion operation until the outbreak of the Second World War, while Bank rate was unchanged at 2 per cent from June 30, 1932, until August 24, 1939 (Howson, 1975, pp. 95-99, 102-105).

Furthermore, the cheap-money policy was accompanied, after a lag, by a sustained economic recovery in Britain. While the contribution of the cheap-money policy and of exchange-rate depreciation to this recovery are beyond the scope of this paper, it would appear from earlier work that cheap money set off and helped to sustain the recovery, mainly via the impact of low interest rates on housebuilding. The effects of the depreciation of the pound are less certain; they await a proper study. One way the floating pound certainly did assist recovery, however, was by providing the authorities with the freedom to introduce and to maintain cheap money. Balance-of-payments problems could in principle be met by exchange-rate changes rather than interest-rate increases. When the balance of payments weakened, the authorities were able to avoid raising interest rates (Howson, 1975, pp. 108-119, and Chap. 3, below).

3 EXCHANGE-RATE TARGETS

This chapter and the next describe the way the EEA was used to manage the floating pound in the years 1932-39, first by identifying the targets for the exchange rate adopted by the authorities and then by outlining the techniques of exchange-rate management they used.

The First Year

The Treasury's original target rate of $3.40 to the pound was chosen in preference to a higher value because of its potentially beneficial effects on prices, domestic economic activity, and exports, and hence on profits, employment, and the burden of the national debt. Treasury officials had, in fact, considered a range of exchange rates, set both by "general opinion in the business world" and by the economists advising them (Ralph Hawtrey, Hubert Henderson, and John Maynard Keynes). The range included $3.90 (a 20 per cent depreciation from the gold-standard par), $3.60 to $3.65 (a 25 per cent depreciation), and $3.40 (a 30 per cent depreciation).[1] The advice of the Treasury officials to the Cabinet in March 1932 was to aim for the bottom end of the range. In this they agreed with Hawtrey and Keynes, though their reasons were different—in particular they rejected Hawtrey's notion of an equilibrium exchange rate (Howson, 1975, pp. 82-86 and Appendix 4; Howson and Winch, 1977, pp. 101-105).

When the EEA came officially into operation on July 1, 1932, the pound was at $3.60. This was the Bank's doing:

> While . . . [the EEA] plans were under discussion the Bank half-heartedly and intermittently put the brake on the foreign exchange market. It absorbed large amounts at 3.53, then let the rate shoot up to 3.77 (9 March) before bringing it down again to 3.63, a level favoured in many quarters outside as well as inside the Bank (Sayers, 1976, p. 425).

The Bank allowed the pound to rise in April. In May it bought and in June it sold foreign exchange to keep the pound between $3.62 and $3.68. Bank officials thought $3.50 to $3.70 "reasonably tenable" (Sayers, 1976, pp. 425-426, 429). Although Treasury officials would have preferred $3.40, it is unlikely that they would have objected to the Bank's actions; their approach was essentially pragmatic, and $3.65 was, after all, the middle of the range they considered reasonable and desirable.

Once the EEA was in operation, the Treasury had more—though not complete—control over the target rate for sterling. Exchange-rate policy

[1] Phillips, "The Present Position of the Pound," Feb. 25, 1932, T.175/57; see also Keynes (1932).

was reviewed at the Friday-afternoon meetings of a joint Bank-Treasury Exchange Committee, which included Deputy Governor Harvey and Sir Charles Hambro from the Bank, W. K. Whigham from Morgan Grenfell, a clearing banker, and two Treasury officials.[2] This committee had been set up at the end of 1931 "to consider questions of technique regarding exchange management." A subcommittee within the Bank met daily to decide dealing policy, while "*decisions* on general policy . . . remain[ed] to be taken by the Chancellor in consultation with the Governor."[3] Thus the Treasury set the target exchange rate for the EEA in the light of the Bank's advice.

Treasury officials had expected the announcement of the conversion of War Loan to strengthen the pound (though Phillips had warned, "Don't be too sure!").[4] In fact, it ushered in a six-month period of weakness, due fundamentally to the lowering of British interest rates relative to those abroad and the check to expectations of a rise in sterling. There had also been some weakening of the pound against the U.S. dollar before June 30, attributable partly to the end of central-bank withdrawals from New York.[5]

The Bank at first supported the pound, but on July 9, 1932, Hopkins reported to the Chancellor that the exchange rate had gradually been allowed to fall and was now being supported at $3.55 to $3.60. This pattern of support followed by lowering of the "peg" was repeated in August and October, when the pound was allowed to drop first to $3.45 and then to $3.40. The aim was "to smooth out but not to alter the downward trend," but the authorities were also concerned about the effect of support on reserves.[6] Official gold and foreign-exchange reserves fell from £262 million (at then current exchange rates) in May to £247 million by the end of October (see Table A-1). As the capital outflows continued into November, "$3.40 could not be held without much bigger expenditure than the authorities would face." The pound was therefore allowed to fall without support, going as low as $3.14½ by the end of November (Sayers, 1976, pp. 452-453).

When the tide of capital flows turned in mid-December, domestic

[2] The Treasury officials who attended included Hopkins, Phillips, S. D. Waley, and, to a lesser extent, Frederick Leith-Ross.

[3] Hopkins to Chancellor of Exchequer, Dec. 11, 1931, T.160/403/F12600/012; see also Sayers (1976, p. 423).

[4] Hopkins, "Recent Course of the Exchange Rate," June 21, 1932, T.175/70; Waterfield, "EEA/c," June 22, 1932, T.160/565/F13039/1.

[5] Hopkins, "Recent Course of the Exchange Rate," June 21, 1932, T.175/70.

[6] Hopkins to Fisher and Chancellor, July 9, 1932, Waley to Hopkins, "Exchange Committee, 5 August 1932," Leith-Ross to Hopkins and Waterfield, "Exchange Committee, 30th September," Hopkins to Chancellor, Oct. 15, 1932, T.175/71. The quotation comes from Waley's report.

policy considerations again came to the fore. The pound began to rise after the British Government announced the payment of the December installment of the war debt to the United States and was also helped by a minor flight from the franc. At the end of 1932, "the present marching orders are to keep the exchange in touch with $3.30, i.e. within a range of say $3.26 to $3.34 . . . and to buy as much of the exchange offering as is necessary to secure that result." Expecting further capital inflows, the Treasury thought that the pound might have to be allowed to rise to $3.40, but as "the arguments for keeping the exchange somewhere between $3.30 and $3.40 are strong," it should not be allowed to rise further. One argument was that the inflow from France was "thoroughly 'bad' money [which] may be called back again at any moment," i.e. a speculative inflow that would soon be reversed. The other argument was the advantage of a low pound to British industry, about which the Bank was "at one with . . . [the Treasury] on the general view that the interests of industry would be best served by keeping sterling about where it is ($3.35) and in any event by not letting it rise either now or later as high as $3.50." The inflows increased as the dollar weakened in early 1933, and the "peg" was gradually raised to $3.35 in mid-January, to $3.40 a week later, and to $3.45 early in February, when the authorities hoped to "try later on to jerk it back again in order to make the speculators uncomfortable."[7]

As a result of these operations, total reserves rose during January and February 1933 by nearly £100 million, reaching £332 million by the end of February (Table A-2). In late January, the Treasury agreed to a proposal by the Governor of the Bank that the EEA should gradually sell £60 to £70 million of its gold to the Issue Department. This would increase the sterling resources of the EEA and enable it to purchase more gold and foreign exchange without an increase in the size of the Account (which would require an Act of Parliament). As the capital inflows accelerated, the Treasury, still determined to prevent a large rise in the pound, speeded up the sale of EEA gold to the Bank and began to contemplate increasing the size of the EEA.[8]

A "subsidiary but still important issue" to the EEA's managers at this time was the composition of the Account's foreign-exchange holdings. The Treasury officials would have preferred to see an increase in the dollar and franc holdings rather than in the gold holdings. Believing that

[7] Phillips to Hopkins, Dec. 22, 1932, Hopkins to Chancellor, Dec. 22, 1932, Hopkins to Fisher and Chancellor, Jan. 16, 1933, "Market Review," Feb. 3, 1933, Hopkins to Chancellor, Feb. 6, 1933, T.175/71.

[8] Phillips to Hopkins, Fisher and Chancellor, Jan. 28, 1933, Hopkins to Fisher and Chancellor, Jan. 30, 1933, note by Phillips, undated but February 1933, T.175/71.

world prices were related to the world supply of gold and wishing to see world prices rise, they did not want to be gold hoarders. However, as Phillips warned, "the currency authorities in the U.S.A. and France . . . [were] inclined to watch [the EEA] with suspicion," since they feared that it might suddenly ask for large amounts of gold in exchange for their convertible currencies. To prevent sudden withdrawal, the Federal Reserve Bank of New York asked the Bank of England to reduce its dollar holdings; the British authorities agreed to convert some of their dollar balances into gold to be held in New York.[9]

The U.S. banking crisis of March 1933 further complicated the management of sterling in the EEA's first year. The decisions taken then were to determine the nature of EEA operations for the next three years. Fearing that the United States might leave the gold standard, Treasury officials decided to attempt to reduce the EEA's dollar holdings and to switch its pegging operations to the franc. They were unwilling to peg the sterling-dollar exchange rate in the face of potentially massive capital inflows, and they also wished to minimize the capital loss on their existing dollar holdings that dollar depreciation would cause. At the same time, they wished to minimize the appreciation of the pound. The conversion of the existing stock of dollars to gold had therefore to be gradual, so as not to push America off gold. With respect to the franc, Hopkins wrote, "we should aim at maintaining for the moment the relation . . . prevailing in recent weeks, that is we should avoid an appreciation of the pound in terms of the French franc and use our resources to check any serious depreciation." Treasury officials also prepared a bill to increase the size of the EEA, which was eventually introduced and passed in May 1933, increasing the resources of the Account by £200 million.[10] The Bank agreed to keep the pound at around 88 francs (equivalent to $3.50 with the dollar and the franc on the gold standard), intending to convert any francs bought into gold that would be held in Paris. For the rest of March, however, the market was quiet, and the EEA's intervention was "confined to selling dollars in Paris . . . the franc proceeds of these transactions being ultimately earmarked [held in another central bank rather than being shipped to England]."[11] Total reserves rose by £50 million in March and early April and gold reserves (both EEA and Bank holdings) by £63 million.

[9] Hopkins to Fisher and Chancellor, Jan. 23, 1933, Phillips to Hopkins, Fisher, and Chancellor, Jan. 28, 1933, Hopkins to Fisher and Chancellor, Jan. 30, 1933, note by Chancellor, Jan. 30, 1933, T.175/71.

[10] Hopkins, "American Banking Crisis," Mar. 3, 1933, note by Hopkins, Mar. 3, 1933, Hopkins to Chancellor, Mar. 4, 1933, Phillips to Chancellor, Mar. 5, 1933, T.175/71.

[11] Hopkins, "Note of Interview at Bank 6.3.33," Mar. 6, 1933, Hopkins to Fergusson, Mar. 22, 1933, "Market Review," Mar. 31, 1933, T.175/71.

Dollar Depreciation and Stabilization Discussions

From March 10, 1933, the U.S. government allowed gold exports only under license, but the United States did not unequivocally leave the gold standard until April 20 (Brown, 1940, pp. 1254-1255). The U.K. Treasury continued for a while its policy of "keeping the pound steady upon French francs and upon gold . . . [and] not attempting to intervene in the movements of the dollar which necessarily are spasmodic and incalculable."[12] At the same time, Prime Minister Ramsay MacDonald and senior officials, including Sir Frederick Leith-Ross (now Chief Economic Adviser), were in Washington for discussions on the forthcoming World Economic Conference. During the discussions, both the operations of the EEA and the question of exchange stabilization were raised.

The British authorities were already skeptical, as they were to be for several years, of the possibility of stabilizing the pound vis-à-vis the dollar. Phillips had earlier ruled out stabilization for two reasons—the magnitude of capital flows and the exchange rate at which stabilization would occur: the Treasury still wanted a $3.40 pound and did not believe the Americans would accept so low a figure.[13] When Leith-Ross began on April 25 to discuss with James P. Warburg, President Roosevelt's adviser on monetary questions, Warburg's plan for stabilization of exchange rates between the United States, France, and Britain, his colleagues reminded him of their objections. With the agreement of the Chancellor of the Exchequer and of the Deputy Governor and others in the Bank, they pointed out that $3.40 to $3.50 was the correct rate for the pound *vs.* the dollar because sterling had been fairly stable at about that rate since 1931; that the fact that it had sometimes gone higher was irrelevant, the experience of late 1932 having shown that a higher level could not be defended; and that the U.K. balance of payments on current account was not in equilibrium despite the depreciation of the pound, the introduction of a tariff in early 1932, and restrictions on foreign lending. They further warned Leith-Ross:

> One is tempted to fear that in view of the unofficial nature of the negotiations on the American side, that their emissary may be likely to return after a little while with an intimation that his views have been rejected; or still worse that his principals accept them heartily, subject only to the minor point that the sterling-dollar exchange must be 3.90 or 4 dollars, or something of that kind. Before conclusions are reached you must know that you are really dealing with principals and that they are in a position to deliver the goods.

[12] Telegram No. 175, Hopkins and Phillips to Vansittart, Apr. 20, 1933, T.188/78.
[13] Phillips to Chancellor, Mar. 5, 1933, T.175/71.

However, they conceded that he could aim at an "oral gentleman's agreement" whereby the United Kingdom would try to keep the pound at $3.40 to $3.50 until the end of the World Economic Conference if the United States would aim to keep the dollar at par with the franc over the same period—some two to three months. There might then be a plan of *de facto* stabilization between the three countries, but even in that case each country would have to be "entitled upon notification to the others to modify its parity if its own internal economy requires it."[14]

Given the Treasury's objections and fears, it is not surprising that the Warburg plan should have come to nought, even though it initially envisaged the dollar at par with the franc and the pound at $3.50 to the dollar. The Americans apparently did take the view that the pound should be worth $4.00 rather than $3.50. The British therefore rejected both the original Warburg plan and a later version produced in May after the French had pressed for a tripartite agreement on temporary *de facto* stabilization of the three currencies. Since the dollar had now depreciated by 20 per cent from its gold par, the Treasury thought that it could manage $3.65 for sterling but no higher. The Bank of England and the Bank of France, having discussed the later Warburg plan, agreed that it "cannot be taken into consideration" without knowledge of the U.S. government's intended monetary policy. They also agreed there should be tripartite talks involving the Treasuries and the central banks before the opening of the World Economic Conference.[15]

When the tripartite talks opened at the Treasury in London on June 10, Phillips and Waley represented the U.K. Treasury, Jean-Jacques Bizot and Jacques Rueff the French Treasury, and O. M. W. Sprague and Warburg the United States. After several days of meetings, some attended by representatives of the Bank of England, the Bank of France, and the Federal Reserve Bank of New York (including the three Governors), they arrived at a temporary and very mild stabilization agreement for the period of the World Economic Conference. The agreement included a draft declaration by the three governments that they agreed on "the necessity of limiting so far as it may be feasible fluctuations in those of their currencies which are off gold" during the conference and

[14] Telegram No. 247, Leith-Ross to Hopkins, Apr. 25, 1933, "Notes for Use in Discussion with Chancellor," Telegram No. 208, Treasury to Leith-Ross, Apr. 26, 1933, T.175/83.

[15] Telegram No. 272, Leith-Ross to Treasury, Apr. 28, 1933, Telegram No. 225, Treasury to Leith-Ross, Apr. 29, 1933, Telegram No. 316, Bewley to Treasury, May 16, 1933, Telegram No. 269, Treasury to Bewley, May 19, 1933, T.175/83; memorandum by Phillips, May 21, 1933, Norman to Hopkins, May 23, 1933, T.188/78; Telegram No. 283, Treasury to Bewley, May 25, 1933, Telegram No. 355, Bewley to Treasury, May 30, 1933, T.175/83. For an account of the various discussions on the Warburg plan, see Sayers (1976, Appendix 27).

that they "will not in the absence of exceptional and unforeseen circumstances take any measures which will be incompatible with . . . monetary [i.e. exchange-rate] stability." It also included a draft technical agreement between the central banks that they would support their currencies at specified rates by the expenditure of specified amounts of gold during the conference and that they would keep the technical agreement secret.[16]

At this point, June 16, 1933, Phillips agreed

> . . . in accordance with the Chancellor's instructions . . . to a mean rate of $4, subject to the acceptance of a reservation that it is open to the British Government to raise the question of this rate again within a fortnight notwithstanding that gold has not been lost. . . .
>
> The French and the Americans were eventually got to concede our point that the rates become subject to review . . . when any country has lost £13 million of gold.

The agreement had then to be submitted to President Roosevelt, who immediately rejected it, objecting particularly to its limitation on domestic monetary policy.[17] Sixteen days later, Roosevelt delivered a message on U.S. monetary policy that effectively destroyed the conference (Moley, 1939, Chap. VII; Feis, 1966, pp. 182-187, Chap. 19; Clarke, 1973, pp. 30-36).

When Phillips agreed to a rate of $4.00 to the pound for the duration of the World Economic Conference, the pound was actually a little over $4.00. In accordance with the Treasury's March decision, the EEA had been concentrating on pegging the pound-franc rate, which it held at 86 francs to the pound during the conference. After the premature end of the conference, the U.K. authorities continued this policy and that of gradually selling off their dollar holdings, which had been about $175 million, or £45 million, at the time the United States went off gold. As

[16] Phillips to Fergusson, June 10, 1933, "Note of a Meeting on Stabilisation of Currencies held at the Treasury at 10.30 a.m. on 10th June, 1933," "Notes of a second Meeting on Stabilisation of Currencies held in the Treasury at 5.30 p.m. on 10th June 1933," "Notes of a Joint Meeting between Treasuries and Central Banks on Stabilising the Exchanges held at the Treasury at 11 a.m. on Sunday June 11th, 1933," "Notes of Joint Meeting of Treasury Representatives and Central Bank Representatives at 5 p.m. on June 11th, 1933," "Note of Meeting of Treasury Representatives on Exchange Stabilisation at 10.15 a.m. on 12th June, 1933," "Notes of Joint Meeting of the three Treasuries and the three Central Banks at 5.30 p.m. on 13th June, 1933," "Notes of a Joint Meeting between Treasuries and Central Banks held at the Treasury at 12 noon on June 16th, 1933," T.188/78.

[17] Phillips to Fergusson, June 17, 1933, T.188/78; "Notes of a conversation between the Prime Minister accompanied by Sir Maurice Hankey and Governor Cox and Mr. Warburg of the U.S. Delegation in the Prime Minister's Room at the Monetary and Economic Conference on Thursday, 22nd June 1933 at 10.50 a.m.," T.172/1816.

Hopkins put it on July 7, the EEA could not peg the pound-dollar rate because "the whole speculative world would be at us while President Roosevelt might take it as a declaration of war. And we have too many dollars already."[18]

The Treasury's policy was intended to keep the French franc on gold as well as to avoid antagonizing Roosevelt, and hence to minimize the chances of a competitive depreciation that would harm British interests. The pound was weak from July to October 1933, and this policy obliged the EEA to support the pound at a cost to reserves of £40 million. As in 1932, the peg was gradually lowered.[19] In September and October, sterling averaged about 80 francs and $4.60. In November and December, the EEA supported the franc by buying francs, which were subsequently converted into gold. Meanwhile, the pound rose against the dollar to $5.12 during the Roosevelt administration's deliberate depreciation of the dollar by gold purchases abroad (Sayers, 1976, pp. 466-467).

The Treasury and the Bank rejected further stabilization suggestions toward the end of 1933. When Leith-Ross was again in Washington in October 1933 (this time to discuss the war debt), he reported back to the Treasury that Dean Acheson (Under Secretary of the U.S. Treasury) and Lewis Douglas (Director of the Budget) had both spoken to him at length about stabilization. According to Leith-Ross, the American Treasury was trying to persuade the President to consider stabilization. The President, though he "would still prefer not to stabilise at all," had allowed that the Treasury might discuss stabilization if Leith-Ross raised it: "Acheson begged me to do so."[20] The senior British Treasury officials promptly replied to Leith-Ross that they were "anxious" about his talks on stabilization and that stabilization of the pound was "impossible." Furthermore, they thought that stabilization of the *dollar* at the present level was undesirable, as it might well cause France and the other gold-bloc countries to leave gold and require a rise in interest rates in Britain to counter flows of European capital to America.[21]

Leith-Ross continued to discuss prospects for stabilization while he was in America, with no more backing from London.[22] He also discussed the President's gold-buying program with Acheson and Governor George L. Harrison of the Federal Reserve Bank of New York, who in turn discussed it with the Governor of the Bank of England, Montagu Norman. The British authorities were naturally anxious to learn the size of the

[18] Note by Hopkins, July 7, 1933, T.175/71.
[19] Hopkins to Chancellor, July 19, 1933, T.175/71.
[20] Telegram, Leith-Ross to Hopkins, Oct. 7, 1933, T.175/83.
[21] Telegrams Nos. 419 and 420, Fisher to Leith-Ross, Oct. 10, 1933, T.175/83.
[22] Telegram No. 561, Leith-Ross to Fisher, Oct. 18, 1933, T.175/76; Telegram, Leith-Ross to Fisher, Nov. 15, 1933, T.175/83.

depreciation Roosevelt was aiming for and also hoped that the Americans would buy gold in Paris rather than in London. Harrison first mentioned a gold price of $33 to $34 an ounce as the President's aim. At the end of November, he outlined a "dual or tripartite arrangement," whereby the United States would keep the price of gold at $34 per fine ounce and the Bank of England, with the help of the Federal Reserve Bank of New York, would support the pound at $5.00 to $5.50 and 78 to 85 francs. (The French would stay on the gold standard.) This arrangement would last for, say, sixty days, to be followed, it was hoped, by *de facto* stabilization. Norman replied that there was "no possibility of the immediate devaluation of sterling or of any agreement under which sterling would be devalued at the same depreciation on gold as the dollar." The Chancellor of the Exchequer agreed that the Governor's answer was "the only possible one."[23] The U.S. administration, on the other hand, would not accept an exchange rate lower than the old parity of $4.86 to the pound (Clarke, 1977, p. 3). It eventually fixed the price of gold at $35 an ounce in January 1934.

1934-36

From 1934 to 1936, the U.K. monetary authorities continued to operate along the lines that had been established over the preceding two years, when objectives had remained the same but exchange-rate targets had been modified under the pressure of events. Early in 1934, the Treasury gave some thought to what should now be the proper exchange rate for sterling. British prices had risen by more than American prices since 1931. If $4.86 to the pound had been appropriate then, Phillips calculated, the pound should now be about $4.70. But since "there was no doubt" that the pound had been seriously overvalued from 1925 to 1931, the pound ought now to be less than $4.48 (if the pound had been overvalued by 10 per cent) or $4.62 (if the pound had been overvalued by 5 per cent) and probably between $4.30 and $4.50. This did not, however, allow for the effect of the tariff on the balance of trade, so "perhaps a figure of $4.50 to $4.60 is as near as we can get to a proper estimate." Assuming that France stayed on the gold standard at its existing parity, the sterling-franc rate would then be 67 to 69 francs to the pound. However, this should not necessarily be the target rate, Treasury officials realized, for any attempt to push the pound down would push France off the gold standard. "We ought to be content with a franc rate

[23] Telegram No. 582, Leith-Ross to Fisher, Oct. 30, 1933, T.175/56; Norman to Phillips, Oct. 31, 1933, Phillips to Chancellor, Oct. 31, 1933, T.175/81; Norman to Leith-Ross, Dec. 2, 1933, Chancellor to Norman, Dec. 4, 1933, T.188/78; see also Sayers (1976, p. 467).

of say 77 or 78 to the pound, even if that involves a dollar rate of $5.10 or $5.20," Phillips wrote. At the same time, there was no point in trying to help France by supporting the franc at 80 francs to the pound, because the strain on the franc might spread to the pound and the exercise would then prove a costly failure.[24]

The question of appropriate exchange rates in relation to price movements was pursued further in the Bank of England. The Bank appeared to be less convinced than the Treasury of sterling's overvaluation from 1925 to 1931, but there was agreement that "we must seek our appropriate exchange rates empirically after we have exhausted the lessons of price comparisons."[25]

Thus the Treasury was content to maintain the existing exchange rates, with the pound at about 77 francs and $5.04. The depreciation against the gold-bloc currencies was about 38 per cent, which was "satisfactory enough." The Treasury was now somewhat less confident about the ability to peg exchange rates: Hopkins thought that "experience shows that up to now we have never been able to hold the pound where the world thinks it ought not to be."[26] Therefore, when the pound weakened in August 1934, the familiar pattern of a period of support and then relaxation and support at a lower rate was followed again for several months.[27] Since "the only reason" for supporting sterling was to reduce the pressure on the overvalued franc, the Treasury officials assured the Chancellor that there was no need to defend it by, for example, raising tariffs. (This was a possibility that Governor Norman raised at the end of the year, reflecting that "for the last 2 or 3 years sterling has been going from bad to worse.)"[28]

The Treasury reaffirmed its reluctance to stabilize on several occasions in 1935, the Chancellor of the Exchequer in the House of Commons on

[24] Phillips, "Future Exchange Problems," Feb. 15, 1934, T.175/71.

[25] Clay to Phillips, Aug. 2, 1934, Bank of England memorandum, "The Relationship between Exchange Rates and Prices in U.K. and U.S.A. 1919-1934," T.208/177; see also Sayers (1976, pp. 472-473).

[26] Hopkins to Fisher and Chancellor, Feb. 16, 1934, T.175/71; see also Sayers (1976, pp. 467-468).

[27] Phillips to Chancellor, Aug. 20, 1934, Chancellor to Phillips, Aug. 21, 1934, Phillips to Wilson-Smith and Chancellor, Aug. 23, 1934, Chancellor to Phillips, Aug. 26, 1934, Phillips to Wilson-Smith, Aug. 30, 1934, T.175/88; Phillips, "Notes on Exchange Position," Sept. 7, 1934, T.175/88 and T.188/78; Hopkins to Fisher and Chancellor, "Exchange Position," and Hopkins to Fisher and Fergusson, Oct. 12, 1934, T.175/88; Phillips, "Exchange Position (9th November 1934)," Nov. 12, 1934, T.188/78; Phillips to Fergusson and Hopkins, Feb. 26, 1935, T.175/88.

[28] Norman to Chancellor, Dec. 29, 1934, memorandum by Phillips, Jan. 11, 1935, Hopkins to Wilson, Jan. 16, 1935, Phillips to Leith-Ross, Jan. 26, 1935, T.175/88. This target-setting exercise illustrates the difficulties involved in the sequential setting of par or target values for different currencies, which bedeviled international monetary relations throughout the interwar period.

March 7, Leith-Ross and Waley to French Treasury officials and the French Prime Minister in January, February, and March, the British Ambassador in Washington to the U.S. Under Secretary of State in March, and Leith-Ross, Phillips, and Waley to Harry White of the U.S. Treasury in May.[29] There was, indeed, much general discussion of the issue in and outside the Treasury at this time (Clarke, 1977, Chap. II; Sayers, 1976, pp. 471-472; Brand, 1935; Keynes, 1935; Henderson, 1935; Robbins, 1935; Howson and Winch, 1977, pp. 113-114). In response, Phillips wrote the Chancellor that the major objection to stabilization was the potential conflict between internal and external objectives:

> We have far more to lose, and are more likely to lose, from a setback in our internal recovery than we are likely to gain in the field of foreign trade. . . .
>
> The country has, in the last two or three years, benefitted enormously from the liberal credit policy pursued by the Bank of England. [While] it is extremely difficult to forecast the reaction of particular minds to a change in circumstances . . . having had to deal pretty closely with the people at the Bank for a long time past, I am of opinion that once a definite exchange figure is named . . . their management of credit will be likely to become decidedly less liberal than at present.

Another reason was the one-way option that *de facto* stabilization would give to speculators if the pound were stabilized at any rate (such as $4.86) likely to be acceptable to the Americans.[30]

Phillips's suspicion that Treasury and Bank views on domestic and international monetary policy did not entirely coincide was aroused again at the end of 1935. Governor Norman produced a memorandum for Hopkins on "Gold Reserves Needed in London," which he estimated to be £475 million in "conditions like those of the present year." In these conditions, there were large short-term capital flows in and out of London and a small current-account surplus in the balance of payments. The Bank, according to Norman, was hoping "to avoid the weapon of credit contraction or raising money rates so long as abnormal unemployment persists, but should of course use it to check a speculative movement in commodity markets or the Stock Exchange or a big specula-

[29] Leith-Ross, note of interview with M. Monick, Jan. 23, 1935, Phillips to Leith-Ross, "M. Flandin's Visit," undated, Leith-Ross, note of an interview with Flandin, Feb. 2, 1935, Waley, note of conversation with Monick, Feb. 27, 1935, Leith-Ross, note of an interview with Rueff and Monick, Mar. 6, 1935, Leith-Ross to Hopkins, Mar. 24, 1935, T.188/109; Phillips to Hopkins, May 18, 1935, and Hopkins to Leith-Ross, May 20, 1935, T.160/840/F13427/2; Leith-Ross, "Note of Interview with Mr. White," May 8, 1935, Memorandum by Phillips, May 15, 1935, Waley, "Note of Interview with Mr. White," May 16, 1935, T.188/116.

[30] Phillips, "Relations with U.S.A.," T.175/88.

tive movement of funds to New York." Norman followed this up with a letter and a memorandum to the Chancellor of the Exchequer proposing that the gold in the Issue Department, which was currently valued at the gold-standard price of 85s. per fine ounce, should be revalued at the current market price. An amount of the gold currently held in the Issue Department equal to the difference between the market valuation (£330 million) and the conventional valuation (£200 million) should then be transferred to the EEA.[31]

The authorities' extended and initially inconclusive discussions on these proposals led eventually to the Currency and Bank Notes Act of 1939, which revalued the Issue Department's gold at market prices (Sayers, 1976, pp. 486-489; Bank of England, 1968, p. 382).[32] The discussions are of interest here because of the Treasury officials' immediate reaction to the proposals, which was to reject them for two reasons. First, Phillips and Hopkins feared that "the fact that the Chancellor had chosen a moment when the price of gold is 141/– [per fine ounce] to order the revaluation of our gold holdings will be taken [by the market] as decisive evidence that that is about the figure at which he desires stabilisation to take place," creating speculative forces tending to keep sterling at the corresponding exchange rate ($4.96). In the course of discussion with Norman and Henry Clay (an Adviser at the Bank), they learned that this was in the Bank's view a virtue rather than a defect of the proposals. Second, Hopkins and Phillips did not want to give the Bank any excuse for a tight monetary policy. Although higher interest rates might sometime be needed for the reasons mentioned by the Bank, "it is not a question," wrote Hopkins, "on which I would want to give too many hostages to the Bank in advance of the time when the contingency arises."[33]

As in 1932, the Treasury officials' attitude toward exchange-rate policy was dictated by the unemployment situation and the cheap-money policy they had introduced to combat it. In 1932 they had expected their policy to result in a rise in prices of about 25 per cent by 1934-35, back to at least 1929 levels, and a fall in unemployment to about the 1927 official percentage (which had been just under 10 per cent, the lowest since 1920), or 1.2 million. By 1935, however, prices were no higher than they had been in 1931 and unemployment was still officially over 15 per cent at 2.5 million. Hence, the Treasury officials believed that the ex-

[31] Norman to Hopkins, Dec. 24, 1935, "Gold Reserves Needed in London," Dec. 18, 1935, Norman to Chancellor, Jan. 1, 1936, "Revaluation of Gold in Issue Department," Jan. 1, 1936, T.160/633/F14900.

[32] Files T.160/633/F14900, T.175/107, T.160/874/F15866.

[33] Phillips to Hopkins, Jan. 14 and 28, 1936, Hopkins to Phillips, Jan. 21, 1936, note by Hopkins, Feb. 28, 1936, T.160/633/F14900. The Treasury officials also objected to the Bank's estimate of desired reserves.

change-rate and interest-rate policies decided upon in 1932 should be maintained (Howson, 1975, pp. 94 and 118). There could be no thought of a fixed exchange rate for sterling, since "the overriding consideration is that we should continue the policy of cheap money so long as we have so grave a problem of unemployment to face. There might always come a time if we committed ourselves to stabilisation when we should have to choose between going back on our promise to stabilise or committing economic suicide by a policy of deflation."[34]

One consequence of this policy in the mid-1930s was that the authorities intervened heavily whenever the pound threatened to rise, thus accumulating large reserves. Total reserves nearly doubled between December 1933 and December 1936, two-thirds of this rise occurring in 1936 alone (Table A-1). The exchange rate fluctuated between $4.78 and $5.06 to the pound and 72 to 82 francs to the pound over the same period.

Another consequence of this policy was that the British authorities were the least enthusiastic party to the Tripartite Agreement. The French socialist government of Léon Blum, elected in May 1936, was immediately faced with a tremendous flight of capital from France. It initiated the negotiations between the American, British, and French Treasuries that took place in the summer of 1936 and resulted in the simultaneous announcement of the "Tripartite Agreement" and the devaluation of the French franc on September 25. U.S. Secretary of the Treasury Henry Morgenthau had earlier tried to open a channel of communication between London and Washington, but the British Government had not responded in the way that Morgenthau desired.[35] The British Treasury's initial reaction to the proposals brought to it on July 26 by Emmanuel Monick, the French Financial Attaché, is illuminating. Monick proposed that the French devalue the franc by 33 per cent to 100 francs to the pound, and the British agree to keep the pound between $4.75 and $4.97. Since the French envisaged adhering to the gold standard, though with wider gold points, and the United States was already tied to gold, the plan implied that the United Kingdom would indirectly link itself to gold. Waley wrote of this proposal:

> Our policy is to manage sterling in such a way as to suit our own economy. In practice we shall probably wish to keep the pound fairly stable in terms of gold provided that (1) this does not involve deflation or dear money; (2)

[34] Waley to Pinsent, May 28, 1936, T.160/840/F13427/3.

[35] Telegram No. 99, Lindsay to Treasury, Apr. 29, 1936, Catterns to Hopkins, May 6, 1936, Telegram No. 106, Lindsay to Treasury, May 7, 1936, Hopkins to Fergusson and Chancellor, May 12, 1936, Telegram No. 153 to Lindsay, May 14, 1936, T.160/330/F14539; Clarke (1977, pp. 22-27).

gold prices do not fall; (3) there is no unmanageable re-patriation of capital to France or other countries of the gold bloc; and (4) our balance of payments does not become permanently and dangerously unfavourable owing to the depreciation of European currencies or for other reasons. In any of these events we might need a depreciation of sterling. . . .

The most that we could tell the French is that it has never been our policy to obtain competitive advantages for our trade and that if the franc were devalued to 100 francs to £1 we should do our best to keep sterling relatively stable in terms of gold if we could do so consistently with our own economic requirements. . . .

But presumably we cannot wisely offend President Roosevelt and Monsieur Léon Blum by rejecting the idea of co-operation outright and we shall have to attempt to find some formula which means very little. . . .[36]

In the end, the U.K. authorities were able to find such a formula—rather to their surprise.[37] The Tripartite Agreement, which resembled the plan discussed during the World Economic Conference in 1933, consisted only of a declaration by the three governments of intention to cooperate in reducing exchange fluctuations and to avoid competitive devaluation, and an informal agreement between the three central banks to buy and sell each other's currencies. The latter involved intensive discussion between the central banks and was not announced until some days after the governments' declarations (Sayers, 1976, p. 480, and Appendix 28). Throughout the negotiations, the British authorities insisted on two points: they should not be committed to support fixed rates (or a range of rates) for the pound (and certainly not the $4.90 to $5.10 range that Morgenthau seemed to want), and they should be able to get gold in exchange for francs from the Bank of France.[38] Since 1934, the Americans had provided gold in exchange for dollars only to gold-standard countries, so that if France followed suit (or abandoned convertibility entirely), the EEA would have to confine its operations to the London gold market. The "24-hour gold standard" provision, whereby the central banks agreed each morning on the rate at which they would convert holdings of each other's currencies into gold at the close of business that day, satisfied these requirements. It provided the technical facility for pegging sterling while allowing changes in the peg on only twenty-four hours' notice. The provision was initially an Anglo-French arrangement, but the Americans soon decided to offer similar

[36] Note by Waley, June 22, 1936, T.160/840/F13427/4; see also draft letter, Chamberlain to Blum, July 30, 1936, in same file.

[37] Phillips to Chancellor, Sept. 10, 1936, Fisher to Chancellor, Sept. 15, 1936, Notes by Chancellor, Sept. 12 and 16, 1936, T.160/840/F13427/4. On the negotiations, see Clarke (1977, pp. 27-54) and Sayers (1976, pp. 476-481).

[38] See particularly Hopkins to Fisher, Sept. 21, 1936, T.188/167.

facilities to both France and Britain (Clarke, 1977, pp. 40-54). Some other countries, including Holland, Switzerland, and Belgium, also asked to join the new "system."[39]

After the Tripartite Agreement

When the London foreign-exchange market reopened on September 28, 1936, the sterling-dollar rate was $4.93 and the price of gold 140s. 9d. Both were regarded as "satisfactory" by the Treasury. At this time the Bank of England and the Bank of France were still arguing over what the opening sterling-franc rate should be. The compromise agreed upon on October 2 was 105 francs to the pound.[40] Over the next eighteen months, the franc depreciated until it was pegged at 179 francs to the pound in May 1938 (on the adventures of the franc and the "working" of the Tripartite Agreement, see Drummond, 1979). The pound, on the other hand, remained stable at about $4.95, while the balance of payments deteriorated.

Between 1931 and 1935, the U.K. balance of payments on current account had improved from a deficit of £114 million in 1931 to a surplus of £13 million in 1935. In 1936, a deficit of £40 million reappeared. The new deficit was due partly to rearmament and continued recovery from the slump, both of which increased the demand for imports; there was also a small fall in exports in both volume and value terms (see Table 1 above). At the same time, however, there was a large capital inflow, partly because the devaluation of the franc did not stem the outflow from France. Official U.K. reserves increased by £212 million in 1936, considerably more than in any previous year.

In official discussions of the balance-of-payments situation at the end of 1936, several views emerged. Prime Minister Stanley Baldwin asked Leith-Ross for a memorandum on the balance of payments, which was circulated to the Cabinet. Leith-Ross came to the rather obvious conclusion that exports should be encouraged somehow, since imports could not be significantly restricted without slowing down domestic activity. Deliberate depreciation of the pound was rejected because it would increase import prices and the cost of living, but any tendency for the pound to fall because of the adverse balance of payments should not be counteracted—and would indeed be the most desirable course (Howson, 1975, pp. 123-124; Sayers, 1976, pp. 474-475).

The Treasury and the Bank did not disagree with Leith-Ross's analysis but were more concerned about the problems involved in trying to main-

[39] See files T.160/885/F17657/09/1 and T.177/31.

[40] Phillips to Hopkins, Sept. 28, 1936, T.160/840/F13427/6; Siepmann to Waley, Oct. 5, 1936, T.177/32.

tain the pound at its current level in the face of the capital inflows. Governor Norman of the Bank of England favored *appreciation* of the pound. According to Hopkins, Norman thought that sterling was too low, was bound to rise sooner or later, and should therefore be allowed to rise now with the large capital inflow. Hopkins and Phillips in the Treasury thought that this view "quite overlooks the effect on trade. . . . To us it seems that it would be altogether wrong at this time to give a new impetus to imports and to impose further difficulties on exports because of a temporary crisis in regard to the movement of bad capital money . . . . It is wrong to contemplate any serious increase in the value of the pound with unemployment at the present level [2 million]." The Chancellor of the Exchequer shared his officials' views, and the authorities continued to accumulate gold.[41] The immediate problem of the depletion of the EEA's sterling resources, which were threatening to run out by January, was solved by selling EEA gold to the Issue Department, as in 1933 (Howson, 1975, pp. 126-127).

During the "gold scare" in the spring of 1937, these arguments were heard again. In the years since 1930, there had been both large increases in gold production and dishoarding of gold, thanks to the rise in the value of gold in terms of other commodities. World output of gold, valued at $20.67 per ounce, rose from $461 million in 1931 to $688 million in 1936. Eastern dishoarding of gold averaged $170 million per year over the same five years, while industrial consumption fell from $63 million in 1931 to $46 million in 1936 (Nurkse, 1944, Appendix I, p. 233). The resulting excess supply of gold had to be absorbed by the monetary authorities, in particular those of the United States and Britain. In April 1937, there were rumors that the U.S. government was going to reduce its buying price for gold. Governor Norman favored agreeing with the Americans to lower the price of gold against both sterling and the dollar while leaving the sterling-dollar exchange rate unchanged. Phillips, on the other hand, did not want to *encourage* the Americans to try the experiment. While the threat of inflation posed by the increase in the world supply of gold made it "*reasonably certain* that in the end there must be a reduction in the price of gold . . . a reduction in the price of gold is not needed at the present stage to control prices. We do not want measures to control prices until the wholesale price level (now 130 [1913 = 100]) is getting towards 150 and unemployment is getting down to 1,000,000." Joint action to reduce the price of gold would, however, be preferable

[41] Phillips, "Position of Exchange Equalisation Account," Dec. 1, 1936, T.175/94; note by Hopkins, Dec. 2, 1936, note by Chancellor, Dec. 2, 1936, T.160/1174/F8759/05/3.

to unilateral action by the United States that might demonetize gold, to the detriment of South Africa and the management of the EEA.[42]

Hopkins advised the Chancellor against a change in the EEA's buying price for gold, on the Treasury's usual grounds: until the domestic economy required deflationary measures, "it would be wrong, if it can be avoided, to reduce the price of gold." Even though the Treasury would have to increase the size of the EEA, it should continue to buy gold at the present sterling price.[43] Having sold some £180 million of gold to the Issue Department over a period of about a year, the Treasury increased the size of the EEA by £200 million by legislation in July 1937. In September, Phillips went to Washington to discuss the gold question with Morgenthau, but by then the problem had subsided with the onset of recession in the United States (Sayers, 1976, p. 485; Howson and Winch, 1977, pp. 145-147).

The spread of the recession to Britain did not change monetary and exchange-rate policies, for they had been influenced by fears of recession for some time (Howson, 1975, pp. 127-130; Howson and Winch, 1977, pp. 141-143). The recession weakened the pound, because the fall in commodity prices reduced the incomes of sterling-area primary producers, but the major problem of 1938 for the EEA was the capital flight from Europe to America induced by the threat of war. From its establishment in 1932 until the early part of 1938, the EEA had acquired on balance approximately £500 million of gold, about half of it from the Bank of France after the Tripartite Agreement. In 1938 and 1939, about 70 per cent of this gold was lost, of which about four-fifths went to America. In addition, the authorities believed that gold hoarded in London, estimated by the Bank at £93 million at the beginning of 1938 and £205 million at the end of the year, was being rapidly dishoarded in 1939, falling to an estimated £133 million by August. They responded to this pressure by allowing the pound to fall from $5.02 to $4.82 in the first seven months of 1938 and by another 20 cents during the Munich crisis of August and September.[44] The Bank then attempted to improve the spot rate for sterling by first selling dollars forward in October and then failing to renew the contracts in December, just at the time when speculators in London who had sold sterling forward during the crisis needed sterling to make up their end-year balance sheets. Under some pressure from the U.S. Treasury to support the pound, the U.K. authori-

[42] Phillips, "The Present and Future of Gold," May 11, 1937, Phillips, "The Gold Question—Views of the Governor," May 24, 1937, T.177/39 and T.175/94.

[43] Hopkins to Fisher and Chancellor, May 25, 1937, T.177/39 and T.175/94.

[44] Bank of England Memorandum, "E.E.A. Transactions since the Beginning of 1938," Aug. 17, 1939, T.236/1538.

ties informed the Americans in advance of this maneuver, which had its intended effect of a short-lived strengthening of the pound.[45]

Further measures to support the pound were soon needed, and those taken in 1939 effectively ended the 1930s float. The authorities transferred £350 million of gold from the Issue Department of the Bank to the EEA on January 6, subsequently regularizing the transfer by the Currency and Bank Notes Act of 1939. At a cost of £168 million in reserves, they managed to keep the pound at $4.68 until August. Treasury officials then advised the Chancellor of the Exchequer, now Sir John Simon, that they and the Bank thought the best course was to let the pound go, for there was no way to estimate what the appropriate exchange rate should be.[46] This was done on August 24 and was accompanied by a rise in Bank rate —the first since the introduction of the EEA—from 2 to 4 per cent. On the outbreak of the Second World War, the remaining Issue Department gold was transferred to the EEA, and sterling was pegged at $4.03 for the duration (Bank of England, 1968, pp. 382-383; Sayers, 1976, pp. 571-575).

Internal and External Balance

Before moving on to discuss the techniques of exchange-rate management used by the EEA, it is convenient to summarize what the Treasury regarded as satisfactory internal and external balance (although, of course, it did not use these terms). Internal balance was defined in terms of unemployment, which had to be reduced at least to the 1929 percentage. Raising prices was mainly a means to this end, since higher prices would lower the burden imposed by the national debt and hence by taxation, raise profits (assuming sticky wages), and hence increase investment and employment. The monetary and exchange-rate measures taken "to increase prices" were meant to increase employment by their effects on investment and exports.

External balance was seen as maintenance of the target exchange rate or as equilibrium in the current account. Furthermore, when the current target exchange rate was not unduly influenced by practical or "political" (diplomatic) considerations, it was chosen in the hope that it would produce equilibrium in the current account *at existing wage rates.* When proposing the first large-scale intervention to influence the exchange rate in March 1932, Phillips wrote: "Our eventual choice is, I believe, be-

[45] "Brief for Chancellor 21/8," T.160/877/F16003; Telegram No. 430, Bewley to Treasury, Nov. 22, 1938, "Draft Telegrams as Approved by the Chancellor, 29.11.38," Telegram No. 875, Treasury to Bewley, Dec. 22, 1938, note on conversation between Butterworth, Phillips, and Deputy Governor on Dec. 28, 1938, T.188/232.

[46] "Brief for Chancellor 21/8," T.160/877/F16003.

tween a low exchange and an attempt to cut wages severely, particularly in such trades as coal, engineering and textiles."[47] But this ultimate aim was put aside from time to time when the proper target rate would have been too difficult or expensive to maintain, when further depreciation of the pound might have annoyed the Americans, or when balance-of-payments considerations had to be subordinated to the needs of defense. There was some hope that Britain could ultimately resume its position as an exporter of capital, which would require a current-account surplus, but this was a long-term aim and was generally neglected in this period.

[47] Memorandum by Phillips, Mar. 5, 1932, T.175/57.

4 INSTRUMENTS AND OPERATING TACTICS

We have so far been concerned with *targets* for exchange rates in the 1930s (and for some other economic variables, in particular prices and unemployment). A target can be defined as a variable "that some policy-maker wants . . . to have a particular value either as an end in itself or as a means whose influence on ultimate ends is exercised outside the system of economic relationships explicitly assumed" (Fleming, 1968, p. 388). In Treasury discussions of the 1930s, the exchange rate was therefore both a target to be aimed for and an instrument for the promotion of satisfactory, if not optimal, price and employment levels. On this, Treasury policy-makers were quite explicit. Other policy instruments used in pursuit of their price and employment goals were interest rates, which they regarded as their major—and most effective—instrument, and, to a lesser extent, the budget (Howson, 1975, pp. 90-94; Howson and Winch, 1977, pp. 122-124, 127-131, 141-143). The extent to which these were coordinated with exchange-rate policy will be considered below. We shall discuss first the instruments that were or could be used in the attempt to maintain exchange rates at their target levels: spot intervention in the foreign-exchange market, forward-exchange-market intervention, and other policies designed to maintain the exchange rate or external balance.

Spot-Market Intervention

The major technique used by the EEA to influence the exchange rate was to buy foreign exchange or gold and sell sterling at current spot rates when the demand for sterling was strong, in order to prevent the pound from rising or to slow down the rate of appreciation, and to sell foreign exchange and buy sterling when the demand for sterling was falling, in order to keep the pound up to the target value, at least until reserves were reduced to some critical level. While the principle is straightforward, the practice requires decisions about which currencies to deal in and how much to intervene on any particular day, as well as about the rate at which the pound should be defended. The choice of currencies is largely a matter of convenience, but in the 1930s it was to some extent constrained by the rules of other monetary authorities; the extent of intervention involves judgment of the strength of market forces and of what the rate will do in the absence of intervention.

The authorities' actions can be determined from the data on the gold and foreign-exchange holdings of the EEA furnished by the Bank to the Treasury, supplemented by the statements of the old Exchange Account

and of holdings by the Bank of England in the months immediately prior to the official establishment of the EEA, the few published reserve figures, and the statements of intention mentioned in the previous chapter. The data are not complete, particularly for the years 1937 and 1938, but they are fairly detailed, and they can be used to construct a consistent monthly series of gold and foreign-exchange reserves for the period September 1931 to December 1936. The Appendix describes the data and provides the series. Here and in the next section on forward-exchange-market intervention, both the series and the original sources are used to outline the major features of EEA intervention in the gold and foreign-exchange markets.

Prior to the American crisis of March 1933, the U.S. dollar was the major intervention currency. Before 1931, the Bank of England's secret hoard of foreign exchange and the U.K. Treasury's Exchange Account were dollar accounts. The Bank began to hold francs in February 1931, but by the end of the year the sterling value of its franc holdings was only a third that of its dollar holdings. The authorities maintained a similar proportion when the EEA first came into being. The EEA's gold holdings were also substantial (see Table A-2).

In January 1933, the authorities began to replace their dollars with gold. They did so partly at the request of the Federal Reserve Bank of New York, which, as indicated in Chapter 3, was afraid of sudden gold withdrawals, and partly because of the possibility of an American devaluation. For similar reasons, they were also thinking of accumulating gold rather than francs. Holdings of U.S. dollars and French francs were then about £45 million and £20 million respectively. Governor Norman of the Bank of England recommended that holdings of dollars and francs should each be limited to the equivalent of $100 million, or £28 million, and the Treasury agreed.[1] In a few weeks, the EEA converted newly bought and some existing dollar and franc holdings into gold, thereby doubling its gold holdings and very substantially reducing its franc holdings, though not its dollar holdings. After the American crisis, the Treasury continued gradually to sell off its dollars, succeeding by the end of the year in reducing them to £64,000. The switch of pegging operations to the franc did *not* mean any important increase in franc holdings, and by the end of the year those holdings were only £38,000, while EEA gold holdings were £86 million. At the same time, the EEA sold in Paris the gold that it had held in New York.[2] In other words, the authori-

[1] Hopkins to Fisher and Chancellor, Jan. 16, 1933, Phillips to Hopkins, Fisher, and Chancellor, Jan. 28, 1933, Hopkins to Fisher and Chancellor, Jan. 30, 1933, T.175/71.

[2] Hopkins to Chancellor, July 13 and 19, 1933, T.175/71.

ties used the period of weakness of sterling to shed their foreign-exchange reserves and only temporarily their gold reserves.

For the next three years, the authorities held gold rather than foreign currencies in the EEA. Dollars were not held because they were no longer convertible into gold; even when the United States returned to its version of the gold standard in January 1934, it would not sell gold for dollars to non–gold-standard countries. Francs were not held because of the ever-present possibility of a French devaluation. Therefore, when the EEA bought francs it quickly turned them into gold, and it conducted operations in the gold market, as explained below.

The question thus arises: Did these perceived restrictions constrain the EEA's pegging operations in any way? The general answer *should* appear to be no, for two reasons. First, if there are orderly cross-rates between the major currencies, it should make no difference which of these currencies is used for intervention. Second, there are other techniques available besides buying and selling sterling spot for foreign currencies. The fact that the authorities continued to prefer to hold gold in the EEA after the Tripartite Agreement suggests they were not by then constrained. There were periods, however, notably in late 1933, when cross-rates were somewhat disorderly (Brown, 1940, pp. 1298-1300). Furthermore, the London gold price was "fixed" once a day (see Bareau, 1947), so that gold could not be used for *continuous* intervention. These factors reduced the amount of intervention in the winter of 1933-34.[3] On other occasions, such as in late 1932, reluctance to run down gold reserves and to use the forward market, rather than a lack of foreign-exchange reserves, contributed to reduce the amount of support given to the pound.

From mid-1935, the EEA began to intervene in other currencies besides U.S. dollars and French francs, initially holding Dutch florins and Swiss francs in very small amounts. Immediately after the Tripartite Agreement, it added Belgian belgas and increased the size of its operations in all five currencies. To these were added, in the course of the next two years, Swedish krónor, Norwegian kroner, Canadian dollars, Argentine pesos, and Indian rupees. Nonetheless, while using the various currencies for daily intervention in both spot and forward markets, the EEA continued to pile up gold through 1935-37.

The authorities' gold operations took two main forms. One was to convert foreign currencies that they acquired into gold, which was usually "earmarked," i.e. held in another central bank rather than being shipped to England. Conversion was restricted by the rules of other monetary

[3] Phillips, "The London Gold Market and Exchange Rates," Feb. 21, 1934, T.175/71.

authorities, but central-bank cooperation, which included an Anglo-Dutch agreement in 1933 and an Anglo-French arrangement in 1934, reduced the problem to some extent. Under the Bank of England's agreement with the Nederlandsche Bank, the Nederlandsche Bank would buy sterling for the Bank of England when requested, the Bank of England would repay the Nederlandsche Bank by earmarking gold in London or Paris, and the Bank of England could repurchase the gold within three months at the price at which it was earmarked. The Bank of England would similarly buy guilders for the Nederlandsche Bank. The Bank of England–Bank of France agreement allowed U.K.-owned gold held in Paris to be shipped to London.[4] These pre–Tripartite Agreement arrangements were facilitated by the U.K. authorities' willingness to defend the gold-bloc currencies.

The EEA also intervened directly in the London gold market. It would make offers for gold arriving in London at prices consistent with the current target rates for the pound. Fixing the sterling price for gold in London would automatically set the exchange rates for sterling *vs.* all other currencies on gold. When the Treasury was anticipating the departure of the gold-bloc countries from the gold standard in early 1934, it intended in that event to use the gold market to manage sterling in a world where no major currency would be convertible into gold. Since the United States was back on a gold standard (though not supplying gold for dollars to non–gold-standard countries), buying and selling gold at, say, 143s. 0d. an ounce would peg the sterling-dollar rate at £1 = $4.86\frac{2}{3}$.[5]

A minor and different type of EEA gold operation was the sale of gold to the Issue Department of the Bank of England, which increased the Bank's gold reserves and increased the ability of the EEA to offset capital inflows. This was accompanied on several occasions between December 1936 and December 1938 by a reduction in the fiduciary note issue in order to prevent the increased gold reserve from increasing the total Bank-note issue and hence to reduce the pressures for an increase in the money supply (Howson, 1975, pp. 126-127; Sayers, 1976, Appendix 38). The increase in the note issue produced by an increase in the Bank's gold reserve without a reduction in the fiduciary issue did not of itself increase the money supply, because the extra notes (the liability of the Issue Department) could be held as an asset in the Banking Department, matched by increased government deposits in the form of the sterling received by the EEA in exchange for its gold. But in the circum-

[4] "Anglo-Dutch Exchange," Aug. 11, 1933, T.160/565/F13039/1; file T.160/619/F14211; see also Sayers (1976, pp. 458 and 465).

[5] Phillips, "Future Exchange Problems," Feb. 15, 1934, T.175/71.

stances of these gold sales, the extra sterling would be used to purchase additional foreign exchange in the market. These purchases would increase the money supply and would not require an increase in the Treasury bill issue to finance them.

Another complication of these gold transactions, in the Treasury's eyes, was the "loss" sustained by the EEA because gold was sold to the Bank at the statutory price of 85s. per fine ounce after the EEA had bought it at the higher market price. This was, of course, only an accounting loss; although there was concern over possible Parliamentary criticism,[6] it does not seem to have affected EEA exchange management. The "problem" was resolved in the Currency and Bank Notes Act of 1939.

An important aspect of spot (and forward) intervention was the authorities' attempts to outwit the speculators. These were one reason for the stepwise pattern of supporting sterling when it was weak that was described earlier, and sometimes also a reason for the authorities' determination to keep the pound from rising. Since pegged exchange rates provide a one-way option for speculators betting on appreciation or depreciation by buying or selling a currency, the Bank often deliberately moved the rate around the current target rate. In the first post–gold-standard example, the Bank pushed the pound down in late September 1931 before individuals started to sell sterling in expectation of a fall. Another example may have occurred the following spring, when the rate was allowed to go up and was then brought down again. The tactic was definitely employed in the next wave of capital inflows in early 1933, although not with great success, and in the face of capital outflows in August 1934.[7]

There were apparently two related goals behind this tactic: (1) By reducing the predictability of sterling's movements, the Bank hoped to persuade potential speculators that the authorities could not or did not peg the rate. (2) The Bank hoped to induce actual speculators to take their profits and get out by allowing a small and temporary movement in the direction predicted by the speculators; the subsequent reversal would then penalize those who stayed or came in. The logical outcome would be to follow the published intention of the EEA just to iron out fluctuations about the trend and not to try to fight the trend. This was indeed the view of Governor Norman, who "always pressed the point that the Account ought not to be used to fight a marked and persistent trend."[8] Other officials, including some at the Bank, did not share this

[6] See, e.g., Phillips to Hopkins and Fergusson, Nov. 16, 1933, T.175/71; note by Hopkins, Dec. 2, 1936, T.160/1174/F8759/05/3.

[7] Phillips to Wilson-Smith and Chancellor, Aug. 23, 1934, T.175/88.

[8] Phillips to Chancellor, Aug. 20, 1934, T.175/88; see also Clay (1957, pp. 403, 405-406).

view. Of one meeting attended by the Governor and Deputy Governor, Hambro, Phillips, and Hopkins in March 1933, Hopkins reported: "The Governor . . . took the opportunity of saying that all our difficulties were due to our policy of pegging sterling in recent weeks in conditions in which a peg was impossible. . . . Nobody of course agreed with him and after a good talk we agreed to differ."[9]

Minford (1978, Part II) has argued that although speculation will probably be destabilizing immediately after a switch from a fixed- to a floating-exchange-rate regime, so that there may be a case for intervention for a period of perhaps a few years after such a switch, speculation should sooner or later become stabilizing, thus removing the rationale for intervention. This did not happen, however, in the 1930s. It is true that the task of ironing out fluctuations in exchange rates became much easier for the British authorities from 1935 to 1938 (Sayers, 1976, p. 468), but the reason for the ease appears to have been primarily the chronic weakness of the gold-bloc currencies and the persistent capital inflows to Britain. As long as the authorities were prepared to accumulate reserves, they could—and did—maintain their target rates for sterling. At the same time, capital flows were becoming more and more influenced by political factors, so that neither the rationale for intervention nor intervention itself showed much sign of disappearing. Britain's total gold and foreign-exchange reserves rose more or less steadily from £414 million to £494 million in 1935 and £706 million in 1936 (Table A-1). Black's (1973) study exhibits evidence of both stabilizing and destabilizing speculation in the years 1936-39. Since there was also much intervention going on at this time, as well as the operation of "political factors," the question of whether speculation would have become stabilizing in the absence of interference is still open.

Forward-Exchange-Market Intervention

In principle, forward-exchange-market intervention can be used to influence spot and forward exchange rates or to influence domestic money-market conditions (Herring and Marston, 1977, Chap. 3), thus complementing or substituting for spot intervention changes. In the 1930s, official forward-exchange operations came to be used as a supplement to spot-exchange operations and a substitute for interest-rate changes. Such operations, however, were to some extent inhibited by the Governor's disapproval. According to Sayers (1976, p. 420), "The traditional view of the Bank . . . was that forward markets were dominated by speculators and therefore anathema." As a result, forward operations by the Bank in London, though not in New York, "remained quite exceptional in this

[9] Hopkins, "Note of Interview at Bank," Mar. 6, 1933, T.175/71.

decade." The available data on EEA holdings show gradually increasing use of the forward markets (see Table A-1).

Sayers (1976, pp. 420n, 453) records that the Bank tried operating in the forward market in November-December 1932, despite "some qualms." After cheap money was introduced, the short-term interest-rate differential moved in favor of New York in August and September 1932 and of Paris from June to November, whereas before it had been in favor of London. At the same time, forward sterling went to a discount, in New York briefly in October and in Paris for much of the summer and autumn (Einzig, 1937, pp. 472-473, 496). There was obviously no question of raising interest rates, and spot intervention was proving expensive to the reserves. The authorities therefore sold dollars forward in order to lower the premium on forward dollars. Such a move should in theory improve the sterling rate for both spot and forward (as long as speculators do not *increase* their demand for forward dollars) and therefore allow the authorities to keep up the spot rate with less drain on the reserves (Tsiang, 1959, pp. 101-102; Fleming and Mundell, 1964, pp. 263-264). However, the reserve drain continued and the pound was allowed to drop unsupported.

When the EEA switched its pegging operations to the franc in 1933, official forward transactions became more frequent. They were initially a consequence of the delay involved in converting newly bought francs into gold. To cover itself against the risk thus posed by a weak franc, the Bank of England took to selling francs forward. When buying foreign exchange spot to cope with capital inflows, it soon became a usual technique for the EEA to cover forward, selling the foreign exchange forward for gold (Sayers, 1976, p. 470).

On other occasions, official transactions, though ostensibly hedging, could have been counterspeculative. Specifically, when the authorities, in the course of their hedging operations, sold more forward francs or dollars than they bought spot or bought more forward than they sold spot, they had an open position. The weekly data show a small open position in francs on five occasions in the summer and autumn of 1933 and many more examples in the summer, autumn, and winter of 1934. In October 1935, rather larger forward franc intervention is recorded.

At least two major forward operations occurred after the Tripartite Agreement in September 1936. Immediately after the Agreement was announced, there was a large rise in the premium on the forward dollar and some weakening of spot sterling (Einzig, 1937, p. 481). The authorities therefore entered the forward market in the last week of September. According to Sayers (1976, p. 470), "the Bank went heavily into the forward dollar market—$35m being the extreme position—for the short

time before markets settled down." Table A-1 shows that forward dollar intervention was still on a large scale (an open position of £5.8 million, or $28 million) in the last week of November. The information available on post-1936 operations, scant though it is, together with the data on late 1936 foreign-exchange holdings, suggests considerably larger transactions in forward markets than had been customary before the Tripartite Agreement (Table A-1).

In the wake of the Munich crisis of 1938, the Bank mounted a large operation in two stages. In October and November, the Bank made substantial official sales of dollars forward in order to reduce the forward dollar premium and hence ease the pressure on the spot rate. Table A-1 shows an open position in U.S. dollars of £36 million, or $173 million, on November 21. The Bank then decided not to renew the official forward contracts falling due in December, in order to force speculators who had been selling pounds forward to close their positions and buy spot the sterling that they would need for their end-year balance sheets. The Bank obtained the cooperation of seven big London banks, and the Treasury informed the U.S. Treasury Secretary. The authorities hoped this "bear squeeze" would allow them temporarily to reduce the reserve losses they had incurred in maintaining the pound at its current value of $4.65 (Bank of England, 1968, p. 382; Sayers, 1976, pp. 563-564).[10] The second stage got round the problem inherent in forward intervention in the face of a persistent weakness of a currency: unless it changes speculators' expectations, forward intervention relieves current pressure on the spot exchange rate only by shifting the pressure to a later period (Tsiang, 1959, pp. 102-105). Since the weakness of the pound and bear speculation were expected to continue, the authorities followed this intervention with moral suasion on the clearing banks to limit bear speculation in both gold and foreign exchange.[11] The combined measures were successful in moderating and even reversing reserve losses until the next international political crisis, Hitler's invasion of Czechoslovakia in March 1939.[12] In the remaining six months of "peace," the authorities appear to have persistently sold U.S. dollars forward on a large scale (Table A-1).

Other Measures

One method of exchange-rate support that was to become common after the Second World War was not used in the years 1932-39—the

[10] "Draft Telegrams as Approved by the Chancellor, 29/11/38," T.188/232.

[11] Catterns to Phillips, Dec. 31, 1938, Chancellor to Norman, Jan. 2, 1939, T.160/875/F15596; see also Sayers (1976, p. 565).

[12] Phillips, "Brief for Chancellor 21/8," T.160/877/F16003; Bank of England memorandum, Aug. 17, 1939, T.236/1538.

borrowing of foreign currency by the central bank and the government. For one thing, the authorities were usually trying to keep the pound down; for another, their 1931 experience with such borrowing was not of a kind to be repeated. Not only was it unsuccessful, but it resulted in much bad feeling on the part of other central banks that sustained losses on their sterling holdings (Yeager, 1976, p. 343). The authorities preferred to build up reserves so that in times of weakness they would not have to borrow but could let reserves run down, as they did in 1938-39. They did, however, agree in 1933 to lend francs held by the EEA to the French government against three-months French Treasury bills and in 1936-37 to arrange further credits in London.[13]

The *tariff* was introduced in the winter of 1931-32, and subsequent changes were made for reasons largely unconnected with the new monetary policy (Feiling, 1946, pp. 201-204, 212-216, 308; Howson and Winch, 1977, pp. 96-99; Drummond, 1974, Chaps. 7 and 8). Some Treasury officials regarded it as unnecessary, since depreciation of sterling would improve the balance of trade, and inconvenient, since a tariff would tend to raise the value of the pound.[14] They rejected suggested higher tariffs to support the pound in the winter of 1934-35, because they did not want the pound to be stronger. Except insofar as it slightly raised the target value of sterling, the tariff made little difference to the authorities' management of the exchanges in the 1930s. (The clause in the Anglo-American Trade Agreement of 1938 that the tariff could be renegotiated if there was a marked change in the pound-dollar exchange rate might have increased the pressures to maintain the existing exchange rate, but there were such American pressures anyway.)

There were also some *controls on capital movements.* When the gold standard was suspended in September 1931, exchange controls were imposed temporarily. But the Treasury Order, which limited the foreign-exchange transactions of British subjects or residents in the United Kingdom to normal trading requirements, pre-existing contracts, and "reasonable travelling," was withdrawn shortly before it was due to expire in March 1932 (Sayers, 1976, pp. 409-410 and Appendix 30). When the War Loan conversion was announced, an unofficial embargo on new capital issues in London was imposed. It initially covered all new issues until September 1932, and it remained on new overseas issues for the rest of the 1930s (Stewart, 1938; Sayers, 1976, Appendix 30). Several con-

[13] Leith-Ross to Hopkins, Feb. 7, 1933, Hopkins to Fisher and Chancellor, Feb. 8, 1933, T.175/71; see also Sayers (1976, pp. 464-466).

[14] Undated, unsigned memorandum by Phillips, Oct. 1931, T.175/56; "Capital Items in the Balance of International Payments," Dec. 15, 1931, T.172/1768; Phillips to Hopkins, Jan. 18, 1932, T.175/58; "The Present Position of the Pound," Feb. 24, 1932, T.175/71.

siderations influenced the imposition and relaxation of the embargo by the authorities at various times:

a. U.K. government borrowing: this was the original motive for the 1930s embargo, and it remained important after 1932.
b. The balance of payments: the major reason for the maintenance of the embargo was to keep foreign investment down to what could be covered by a current-account surplus without raising interest rates.
c. Political considerations: the first of many examples was the opening of the London capital market to the Australian government in the autumn of 1932.
d. Exchange-rate considerations per se: support for the pound was a factor in the authorities' decision not to relax the embargo in November 1932, when the pound was weak and there was anxiety about the reserves. In 1933 and again in 1937, when sterling was stronger, senior Treasury officials recommended a relaxation of the embargo on the grounds that this would help to keep the pound down and help British exports.[15]

Thus the embargo, like exchange-rate policy itself, was a consequence of the cheap-money policy. Its effectiveness was somewhat weakened by the fact that it did not cover transactions in existing securities, but this worried the authorities less as the balance of payments improved. By 1937, Phillips was doubting whether any of the reasons for the embargo still existed, except possibly political considerations.[16] However, the resulting relaxation in February 1938 was reversed later in the year, in consequence of the rapidly deteriorating exchange-rate situation. The authorities began to prepare for exchange controls, which were imposed at the outbreak of war (Sayers, 1976, pp. 567-571).

Monetary policy can, of course, be an important weapon of exchange-rate management because of the influence of interest rates on short-term capital movements. In the period of the cheap money policy, however, U.K. interest rates were certainly *not* manipulated for purposes of exchange management: the situation was rather the other way around. An important aspect of the EEA, and part of its original purpose, was the insulation of the domestic money market from international capital flows so that low interest rates could be maintained.

While monetary policy was directed to internal objectives, *budgetary*

[15] Waterfield, "New Government Borrowings," Aug. 27, 1932, Hopkins, "Note Relating to the Embargo on New Capital Issues," Nov. 13, 1932, Phillips to Hopkins, Nov. 15, 1932, T.160/533/F13296/1; Hopkins, Phillips, and Fisher to Chancellor, Nov. 30, 1933, T.175/84.

[16] Phillips, "The Kennet Committee and Investment Abroad," Nov. 17, 1937, T.175/94.

policy was accorded a role in exchange-rate management, at least in the early part of the decade. The practice of "sound finance," which involved the attempt to balance the budget, was a means to restore confidence in the pound. "Sound finance" became less important to the authorities as the decade wore on, but there was still some concern on this score when it came to the financing of rearmament (Howson, 1975, pp. 92-93, 120-126; Peden, 1979).

5 ASSESSMENT AND CONCLUSIONS

There can be no doubt that the floating pound was managed in the 1930s. Kaliski and Prachowny (1978, p. 2) have defined a managed float as a system involving "an unknown (to the public) target level for the exchange rate to which the authorities have some commitment, but the nature and strength of that commitment may vary, while the target level itself may be subject to frequent reappraisal and alteration." As the last two chapters have shown, the U.K. authorities in the 1930s certainly had exchange-rate targets, which they tried to achieve with varying degrees of effort and which they reviewed frequently and altered from time to time.

This chapter looks at two aspects of the management of the floating pound in the 1930s. After drawing some conclusions as to the reasons why the U.K. monetary authorities adopted a managed float in and after 1931 (as distinct from the reasons why Britain left the gold standard in September 1931), it considers the question whether the resulting float can be regarded as "clean" or "dirty" on various recently developed criteria.

The Adoption of a Managed Float

Of the reasons why a country might wish to manage a floating currency, three seem to have determined the U.K. monetary authorities' behavior in the 1930s: (1) freedom to pursue a monetary policy oriented toward domestic policy objectives, (2) prevention of speculative movements of the exchange rate away from the equilibrium or optimal rate, and (3) accumulation of gold and foreign-exchange reserves.

The first of these three was certainly the most important and fundamental reason for both the establishment of the EEA and the subsequent rejection of a return to fixed exchange rates in peacetime. The attempt to maintain the pound at $4.86 during the gold-standard period had constrained domestic monetary policy severely before and during the world slump. If the authorities did not make any attempt to return to a fixed-rate regime, they could introduce the long-desired policy of cheap money to combat domestic depression. The Treasury soon declared that it would not contemplate a return to a fixed-exchange-rate regime unless and until the world monetary system had been reformed so as to make such a regime less constraining than it had been in the 1920s.[1] The per-

[1] See "Report of Committee on Monetary and Financial Questions to Imperial Economic Conference at Ottawa, July-August 1932," reprinted in Sayers (1976), Appendix 26; "The Foreign Demand for the Return of the United Kingdom to Gold," Oct. 1932, T.175/70 and Cab.58/183.

sistence of high unemployment and the fears of renewed recession after 1935 later strengthened the resolve to maintain monetary independence.

The second reason, the desire to prevent destabilizing speculation, was of great importance in several instances, including the first post–gold-standard intervention of the Bank of England, the introduction of the EEA, and the EEA's behavior in early 1933 and from 1935 to 1938. In the autumn of 1931, the Bank feared an undue depreciation of the pound if it were allowed to fall by itself; in the spring of 1932, the Treasury feared an appreciation of the pound above the desired exchange rate. From 1935 to 1938, the authorities feared that the pound would appreciate above both equilibrium and optimal rates because of speculators' attitudes toward other currencies, notably the French franc, and they intervened heavily to prevent such an appreciation. The authorities also feared that any announcement of a target rate would make matters worse in this respect. As the Treasury put it in late 1932,

> When to seasonal instability is added the erratic effect of present short term capital movements, it would seem that the need for shifting the provisional parity would arise . . . frequently. . . . It is true that the [Exchange Equalisation] Fund operates as a powerful brake on erratic movements of the exchange but those responsible for its practical management hold that its usefulness in this regard would be impaired or destroyed if the attempt were made to hold sterling at a particular level announced in advance. Actual experience has shown that under present world conditions an apparent stability in the exchange value of sterling and a supposed unwillingness on the part of our currency authorities to see any departure from this value do not help in the least with the practical problem of keeping sterling under control.[2]

There was some difference of opinion among the authorities over the extent of destabilizing speculation by private participants in the gold and foreign-exchange markets. Governor Norman was inclined to believe that all speculation was destabilizing and to favor truly fixed exchange rates, i.e. the gold standard. Other advisers in the Bank, notably Henry Clay, argued that private speculation was potentially stabilizing (Sayers, 1976, p. 420). There was nonetheless worry in the Bank in general that much of the capital movement between the industrial countries was destabilizing, inspired as it was by fears of devaluations, political crises, and threats of war. Norman himself regarded "the 'panic' money which grew to such large proportions in the twenties, . . . which was the prime agent in wrecking the gold standard . . . [and which was still in 1935] capable of putting a severe strain without warning

[2] "The Foreign Demand for the Return of the United Kingdom to Gold," Oct. 1932, T.175/70.

and perhaps without adequate cause upon almost any currency" as the "main reason" for the EEA's existence (Clay, 1957, pp. 419-421). In the Treasury, Phillips, at least, thought that speculation was likely to be stabilizing in normal times, but "in the present highly disturbed period, . . . something stronger than normal recuperative forces is needed to hold exchange steady" and to avoid large movements that would be harmful to trade.[3]

The third reason for adopting a managed float, the accumulation of reserves, was influential on several occasions, particularly in the first eighteen months after the fall from gold. The authorities had long considered their reserves to be inadequate, and the possibility of an early return to the gold standard provided an argument for increasing them as soon as they could. This possibility soon receded, but a need for larger reserves was still perceived because of the size of international capital movements, the growth of sterling-area liabilities,[4] and later the prospect of war. This perceived need for reserves provided an additional reason for intervention in early 1933 and 1935-38, although the first two reasons for management were probably sufficient to result in reserve accumulation. But, on occasion, the desire for reserves provided the argument for nonintervention, notably in the fall of 1931, when reserves were being conserved for repayment of overseas borrowing, and the fall of 1932, when defense of the pound had greatly reduced the level of reserves.

In the 1920s, reserve targets were set in terms of the published figure of gold coin and bullion in the Issue Department of the Bank of England, which was valued at the statutory price of 85s. per fine ounce. In 1918, the Committee on Currency and Foreign Exchanges after the War (the Cunliffe Committee) had recommended a target of £150 million to be achieved within ten years, along with a return to the gold standard (Moggridge, 1972, pp. 17-18). This target was achieved in the mid-1920s but could not be maintained through the slump and crisis. In the winter and spring of 1931-32, published gold holdings were down to £121 million (see Table 4). With the inception of the EEA, they rose again as the Bank sold foreign exchange to the Treasury in exchange for gold in May and June 1932 (Table A-2). But after the December war-debt repayment to the United States, they fell back to £121 million, although total gold and foreign-exchange reserves—at market prices—had increased substantially since the abandonment of the gold standard (Tables 4 and A-2). The reserve accumulation of the first four months of 1933 took gold holdings well above the target to around £190 million, where

[3] Phillips, "The Present and Future of Gold," May 11, 1937, T.177/39.
[4] On which, see Bank for International Settlements (1953, Chap. III).

they remained until the massive inflows of 1936 took them over £300 million (Table 4).

In the 1930s, the Bank appears to have been aiming at a published reserve figure of about £200 million, or 50 per cent of its note issue. During the 1920s, the ratio of the Issue Department gold holdings to the Bank's note issue hovered around 40 per cent, and it fell substantially below this in 1931 and 1932. After the operations of early 1933, it stayed around 50 per cent until late 1936 (Table 4). According to a Bank memorandum sent by Norman to Hopkins at the Treasury in December 1935, "a reserve is held to give confidence as a backing to the note circulation, to meet seasonal movements, to meet a temporary adverse balance of payments, and to meet a flight of capital." For those four purposes, according to Norman, it was necessary to allow £175 million, £35 million, £50 million, and £125 million respectively in 1936, if one considered the U.K. position only. Adding the sterling area would increase the seasonal and adverse-balance-of-payments needs to £50 million and £150 million but would reduce the flight-of-capital need to £100 million, resulting in a reserve target of £475 million, of which £200 million should be held in the Issue Department. These figures were at the current market price of gold. Since existing total reserves were approximately £490 million at market prices, of which £332 million were in the Issue Department, Norman proposed in a second memorandum that the Issue Department's gold holdings be valued at the market price and the excess over £200 million be transferred to the EEA. The Treasury, however, was singularly unsympathetic: the total figure was "high for a normal" and "the whole idea that £200m of gold must be held idle and useless against notes is antiquated."[5] When the revaluation and transfer to the EEA of Issue Department gold was eventually made in 1939 (after the ratio of published gold holdings to the note issue had been well over 60 per cent for two years), published gold holdings were £226 million (at the market price) and the ratio was around 47 per cent. But only a few months later, the remaining Issue Department gold was transferred to the EEA (Table 4).

From this review of the reasons for the management of the pound in the 1930s, it is clear that the authorities wished to reduce fluctuations in the exchange value of the pound, particularly upward fluctuations. The exchange-rate movements of the pound against the U.S. dollar and the French franc reported in the accompanying chart provide one measure

[5] Bank of England, "Gold Reserves Needed in London," Dec. 18, 1935, and "Revaluation of Gold in Issue Department," Jan. 1, 1936; Phillips to Waterfield, Hawtrey, and the Treasury Accountant, Jan. 7, 1936, T.160/633/F14900. Phillips went so far as to call the Bank memoranda "inconclusive muck."

TABLE 4

PUBLISHED OFFICIAL GOLD RESERVES AND NOTE ISSUE, QUARTERLY, 1931 III TO 1939 II

(pound figures in millions)

Quarter	*Issue Department Gold Holdings*[a] *(1)*	*Bank of England Note Issue*[b] *(2)*	*(1) / (2)* %
1931:			
III	£135	£355	38%
IV	121	364	33
1932:			
I	121	356	34
II	137	359	38
III	140	362	39
IV	121	370	33
1933:			
I	173	364	48
II	191	375	51
III	192	372	52
IV	192	385	50
1934:			
I	192	372	52
II	192	380	51
III	193	379	51
IV	193	397	49
1935:			
I	193	380	51
II	193	397	49
III	194	400	39
IV	201	316	48
1936:			
I	210	405	50
II	217	433	50
III	250	446	56
IV	314	465	68
1937:			
I	314	467	67
II	326	482	68
III	326	488	67
IV	326	499	65
1938:			
I	326	481	68
II	326	487	67
III	326	485	67
IV	326	498	65
1939:			
I	226[c]	479	47
II	226	497	45

SOURCES: (1) Bank of England weekly return, from *The Economist*. (2) from Bank of England, *Statistical Summary* for appropriate year.

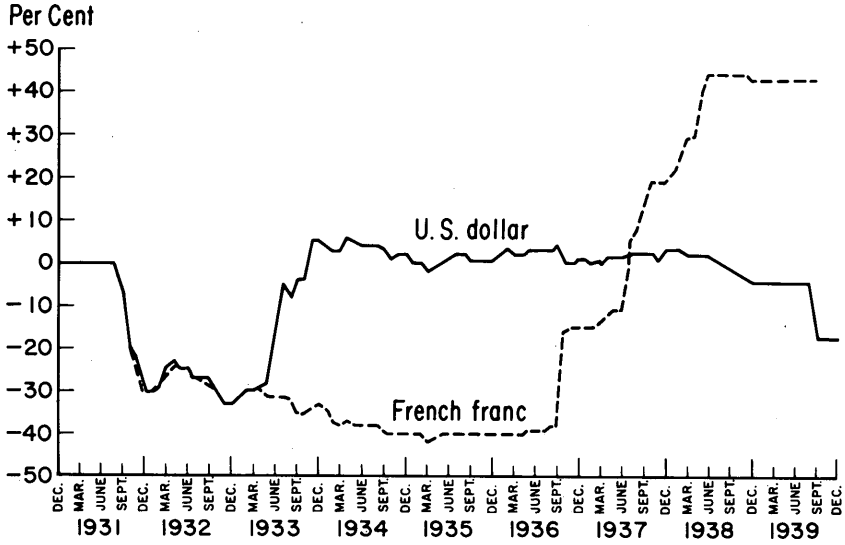
[a] Last Wednesday of quarter, at statutory price.

[b] Excluding notes held in the Banking Department. Average for last month of quarter.

[c] Under the Currency and Bank Notes Act of 1939, £200 million (at the statutory price) of Issue Department gold was transferred to the EEA in January 1939 and the remaining Issue Department gold was revalued and published at current prices from March 1939.

of their success. Another, probably better, one is provided by the movement of the effective exchange rate, various indices of which have been calculated by Redmond (1980).

DEPRECIATION AND APPRECIATION OF THE POUND STERLING AGAINST THE U.S. DOLLAR AND THE FRENCH FRANC AS A PERCENTAGE OF THE 1931 PARITY, MONTHLY, 1931-39



SOURCE: Calculated from monthly averages of daily exchange rates in London and Cambridge Economic Service, *Bulletin*, selected issues.

According to the chart, the sterling-dollar exchange rate exhibited considerable stability (at slightly above the old par) from late 1933 to mid-1938. This period was preceded by a rapid rise in the pound against the dollar in 1933 and was followed by a steady fall in the pound for eighteen months until the outbreak of war. According to Redmond's calculations, the effective exchange rate for sterling rose slowly and fairly steadily throughout the period 1933-39 and remained below the 1929-30 level until 1937. Both series show a good deal of fluctuation in 1932 and a fall in the pound in the latter half of 1934, periods when intervention was pursued less consistently than in 1933 and after 1934.

A Dirty Float?

A managed float will be nearest to, without being, a free float if intervention is confined to smoothing exchange-rate movements: such intervention is called "leaning against the wind" as long as the authorities do not lean too hard. A managed float will more nearly resemble a

fixed-exchange-rate regime if the authorities follow an active intervention policy based on strong views about "appropriate" exchange rates (Tosini, 1977, p. 1; Mikesell and Goldstein, 1975, pp. 2-3). The former would generally be regarded as a "clean" float; the latter can be regarded as "dirty" or "clean" depending on the amount of intervention and the appropriateness for the international economy of the target exchange rate. Thus, to decide whether a particular float is dirty or clean it is necessary to look at the size of the operations and their likely effects as well as at the intentions behind the operations. This was clearly recognized in the International Monetary Fund's (1977) principles for the surveillance of member countries' exchange-rate policies. We shall therefore follow the order of the principles to determine whether and to what extent sterling's float of the 1930s can be considered clean or dirty. We consider first the scale of exchange-market intervention, second other policy measures affecting the exchange rate, and third the behavior of the exchange rate.

In principle (and ignoring for the moment certain important qualifications), if a monetary authority is intervening only to moderate exchange-rate fluctuations without interfering with longer-run trends, the changes in its reserves should balance out at zero over reasonably short periods of time: changes in either direction should soon be reversed. Assuming that the relevant trends to be left alone are cyclical as well as secular, these periods of time should be short—a matter of months only—and the amount of intervention in any direction should be small in relation to external transactions (Mikesell and Goldstein, 1975, p. 5).

Table 5 shows the size of monthly and annual changes in total official reserves for the gold-standard years 1925-31 and for the subsequent five years. The monthly figures indicate that official intervention increased in the late 1920s as the struggle to remain on the gold standard became more difficult, and that from 1931 to 1936 intervention took place on a much larger scale than from 1925 to 1930. The annual figures show that positive reserve changes were not reversed in the early years of the EEA, resulting in annual reserve increases of over 40 per cent in both 1933 and 1936. The annual reserve accumulations are also large in relation to changes in the balance of trade, in the current account of the balance of payments, and in U.K. external liabilities (Tables 6 and 7). With respect to the last, the ratio of total reserves to net external liabilities in sterling rose from 51 per cent in 1931 to just over 100 per cent in 1937-39; over the twenty-three postwar years 1945-67, it averaged 20 per cent (Bank of England, 1968, Table B). Overall, the three tables suggest that compared with, say, Canada's 1950-62 float (Wonnacott, 1972, Chap. 3), Britain's 1930s float was none too clean.

TABLE 5

MONTHLY AND ANNUAL CHANGES IN GOLD AND FOREIGN-EXCHANGE RESERVES, 1925-36

(pound figures in millions at current prices and exchange rates)

Year	Average Absolute Monthly Change		Maximum Monthly Change		Annual Change	
	£	%[a]	£	%[a]	£	%[a]
1925[b]	£ 3	2%	−£ 8	− 5%	−£ 6	− 4%
1926	2	2	6	4	23	16
1927	3	2	10	6	23	13
1928	5	3	−13	− 7	− 20	−10
1929	5	3	−16	− 9	− 8	− 5
1930	3	2	− 9	− 5	7	4
1931	13	8	−42	−22	37	21
1932	20	9	43	20	38	18
1933	17	5	44	15	122	49
1934	9	2	32	9	44	12
1935	11	2	−27	− 6	80	19
1936	18	3	56	11	212	43

SOURCES: Calculated from Sayers (1976, Appendix 37) and Table A-1.
[a] Percentage of level at beginning of period.
[b] Monthly changes are for eight months (Apr. 29 to Dec. 30) only.

TABLE 6

ANNUAL CHANGES IN BALANCE OF TRADE, CURRENT ACCOUNT, AND GOLD AND FOREIGN-EXCHANGE RESERVES, 1930-38

(in millions of pounds)

Year	Change in Balance of Trade	Change in Current Account	Change in Reserves
1930-31	−£ 39	−£129	£ 37
1931-32	106	52	38
1932-33	24	44	122
1933-34	− 28	− 14	44
1934-35	37	45	80
1935-36	− 80	− 53	212
1936-37	− 73	− 17	119
1937-38	51	− 8	−210

SOURCES: Tables 1 and A-3.

Reserve changes, however, are not sufficient guides to cleanness or dirtiness. If the authorities are rebuilding inadequate reserves or if the currency is appreciating and there is a J-curve, whereby disequilibrium in the balance of payments will initially increase when a country is moving into equilibrium following a change in the exchange rate, then the authorities will accumulate reserves without necessarily indulging in "dirty" behavior (active intervention). Both these factors operated in

TABLE 7

GOLD AND FOREIGN-EXCHANGE RESERVES AND NET EXTERNAL LIABILITIES IN STERLING, ANNUAL, 1931-39

(pound figures in millions)

End of Year	*Reserves* £	*Liabilities* £	*Reserves/ Liabilities* %	*Change in Reserves* £	*Change in Liabilities* £
1931	£210	£411	51%		
1932	248	468	53	£ 38	£ 57
1933	370	538	69	122	70
1934	414	580	71	44	42
1935	494	600	82	80	20
1936	706	721	98	212	121
1937	825	808	102	119	87
1938	615	598	103	−210	−210
1939	545	517	105	− 70	− 81

SOURCES: Reserves 1931-38 from Table A-3; reserves 1939 and liabilities from United Kingdom (1951).

the first three years of the float. The pound, after the initial post-gold-standard depreciation, appreciated sharply against the dollar in 1933 (see chart above); its estimated effective exchange rate, as calculated by Redmond (1980), rose slowly for the rest of the decade. Reserves were also rising as the Bank rebuilt its depleted reserves in 1932 and 1933. To test whether there was an undue accumulation of reserves, two measures of reserve adequacy have been applied in Table 8. These suggest that the reserves were seriously inadequate in 1930 and ample, though not unduly large, by 1936-37.

The persistent increases in reserves after 1935 also do not by themselves indicate aggressive intervention by the EEA. Suppose the authorities are intervening only in an attempt to moderate fluctuations. If there are large and persistent speculative capital inflows that are expected to be reversed but are not in fact reversed, they will find themselves accumulating reserves. This would appear to have been the case for the EEA from 1935 to 1937. A related problem occurs when, by doing no more than leaning against the wind, a country facing a large speculative capital inflow has allowed its currency to appreciate or depreciate by a significant amount. Once this movement of the exchange rate has affected the balance of payments and the domestic economy, reversing it can be very costly in terms of resource allocation and politically. The authorities may then find themselves obliged to change their targets for the exchange rate. This seems to have happened to the British authorities in and after 1935, when they accepted a higher value for the pound than they, or at least the Treasury, deemed optimal.

TABLE 8

GOLD AND FOREIGN-EXCHANGE RESERVES AS A PERCENTAGE OF IMPORTS AND OF HALF THE SUM OF IMPORTS AND EXPORTS, ANNUAL, 1930-38

(*pound figures in millions*)

Year	*Reserves, End of Year (R)*	*Imports (M)*	*R/M* %	*Imports + Exports (M + X)*	$\frac{R}{\frac{1}{2}(M+X)}$ %
1930	£173	£953	18%	£1,623	21%
1931	210	786	27	1,250	34
1932	248	641	39	1,066	47
1933	370	619	60	1,046	71
1934	414	683	61	1,146	72
1935	494	724	68	1,265	78
1936	706	786	90	1,309	108
1937	825	950	87	1,564	105
1938	616	849	73	1,413	86

SOURCES: Reserves 1930 from Sayers (1976, Appendix 37); 1931-38 from Table A-3. Imports and Exports from Table 1. Measures of reserve adequacy from Williamson (1973) and Keynes (1941). It should be noted that Keynes's measure was meant to provide a *generous* quota under his Clearing Union plan.

Exchange rates can be managed by measures other than market intervention, for instance by official borrowing for balance-of-payments purposes, by capital and exchange controls, and by domestic macroeconomic policies. The use of these measures in Britain in the 1930s has already been described in Chapter 4. Official borrowing was not undertaken after 1931; the controls on capital movements were far from complete and probably had little impact (Howson and Winch, 1977, pp. 112-113); and while monetary policy and exchange-rate policy *were* closely related, exchange-rate policy was supposed to suit domestic monetary policy rather than the other way round. One can regard the resulting managed float as unjustifiable only if one regards all floats undertaken to achieve monetary independence as illegitimate.

The EEA's 1930s experience makes it very clear that distinctions cannot be made between dirty and clean managed floats in terms of the use made of exchange-rate targets. Even "clean" intervention of the leaning-against-the-wind variety requires targets, both short-term operating targets and an idea of where the exchange rate would go in the absence of intervention. To distinguish between clean and dirty managed floats, the appropriateness of the authorities' targets must be considered and hence, of course, what they are trying to achieve by their exchange-rate policy.

One way to define dirty floating is as "intervention to keep the exchange rate from moving toward its long-run equilibrium level" (Black, 1977, p. 23). The problem here, of course, is the definition of an equilib-

rium exchange rate—or rather the definition of balance-of-payments equilibrium, since that is what an equilibrium exchange rate should presumably bring about. Overall balance-of-payments equilibrium—external balance in the Mundell-Fleming sense—is not satisfactory in this context, since it is only short-run flow equilibrium: the flows of goods and securities will be continually changing stocks of real and financial assets, changing wealth and hence people's behavior. In full stock equilibrium, the current account of the balance of payments must be either exactly balanced or with a surplus or deficit that corresponds to the trend of economic growth relative to that of other countries. The corresponding equilibrium exchange rate will not be constant but will change over time at a rate depending on real and monetary factors: the rate of growth of the money supply, changes in the demand for money, and changes in tastes and productivity (Mundell, 1961; Fleming, 1962; Black, 1973; Branson, 1974; Dornbusch, 1976; Black, 1977). In principle, this concept of equilibrium would seem partly to reinstate purchasing-power-parity calculations, but their well-known difficulties remain (Officer, 1976; Kravis and Lipsey, 1978; Genberg, 1978; Artus, 1978). A better way to make the equilibrium concept operational *in the present context* might be to see whether the balance of payments on current account was moving in the appropriate direction.

Over the medium term, we would expect that after Britain's departure from the gold standard, her current-account deficit would be reduced and might become a surplus, permitting the resumption of foreign lending. Table 1 shows that, over 1932-35 as a whole, the balance-of-payments movements are in the right direction; after 1935, they go the wrong way. This implies that when the authorities were intervening most deliberately to implement a target rate that they believed would produce equilibrium in the current account, as in 1932-34, they were floating more cleanly than when they had abandoned their attempts to achieve the appropriate rate, as in 1935-38.

There is a problem with this test. Can one regard a balanced current account accompanied by high unemployment as a position of equilibrium? In the theoretical analyses of the determination of exchange rates, there is the implicit or explicit assumption that in long-run full stock equilibrium there will be full employment of the factors of production. In the real world, balance-of-payments equilibrium is rarely accompanied by full employment, and it was not in the 1930s. The position the Treasury was hoping to attain with the help of its exchange-rate policy was one of a balanced current account and higher employment at the existing level of money wages. The attainment of a small surplus on the current account in 1935 provided no reason for the authorities to

change their policy toward the exchange rate, since the problem of high unemployment remained.

When the balance of payments began to deteriorate after 1935 with unemployment still high, the goal of equilibrium presumably implied that the EEA should deliberately depreciate the pound. But the managers of the EEA felt constrained by the potential reactions of monetary authorities in other countries, particularly in the United States. They chose a target rate which they judged would not annoy other monetary authorities, because the consequences of annoyance could harm British exports and employment.

At various times, then, the EEA's management of sterling in the 1930s included aggressive intervention, deliberate rapid reserve accumulation, leaning against the wind harder than the wind was blowing, and inappropriate targets. Yet of none of these episodes can it be said that the EEA would thus have violated the principles recently adopted by the IMF. Britain did "avoid manipulating exchange rates . . . in order to prevent effective balance of payments adjustment or to gain an unfair competitive advantage" and it did "take into account in [its] intervention policies the interests of other members, including those of the countries in whose currencies [it intervened]" (International Monetary Fund, 1977). In the process, it made sterling a more stable currency that it might otherwise have been.

APPENDIX

U.K. Gold and Foreign-Exchange Holdings, 1932-39

This Appendix describes my attempts to construct weekly and monthly series of Britain's total gold and foreign-exchange reserves from 1932 to 1939. The existing published series for these years are quarterly and cover only gold holdings (with the exception of a figure for total foreign-currency holdings at the ends of 1932 and 1939) (United Kingdom, 1951; Bank of England, 1968). For the gold-standard years 1925-31, however, a monthly series showing the breakdown into U.S. dollars, French francs, and gold was published in Sayers (1976, Appendix 37). One result of the work reported here has been to extend Sayers's series through December 1936 (Table A-1).

The main source of more detailed information on Britain's official reserves from 1932 to 1939 is the statements of EEA gold and foreign-exchange holdings furnished by the Bank of England to the Treasury at regular intervals. These are to be found in Hopkins's papers in the Public Record Office (files T.175/71, 72, and 87). From the beginning of May 1932 to April 1933, the Bank provided details of its own and the Treasury's holdings for Thursdays—the day before the Friday meetings of the joint Bank-Treasury Exchange Committee. Initially, these statements appeared infrequently, covering important episodes in the management of sterling. They can be supplemented by statements of end-of-month EEA gold and foreign-exchange holdings prepared by the Treasury for each financial year; some of these are in the Public Record Office (file T.160/565/F13039/1). From May 1933, the Bank sent statements of EEA holdings every Wednesday (until October 1933), or Tuesday (from November 1933), or daily (from the beginning of November 1934). The Bank was also obliged by the Bank Charter Act of 1844 to provide the Treasury at the end of each month with details of the assets held in the Issue Department as backing for the note issue and to publish every Wednesday a weekly return showing the Issue Department gold holdings (valued at the statutory price equivalent to 85s. per fine ounce). These figures have been obtained from the Treasury and *The Economist*.

From these sources, a more or less weekly series of total gold and foreign-exchange holdings has been constructed for the period April 1932 to December 1936, broken down into spot and forward holdings in each currency and gold and by holder (Bank or Treasury). All the figures have been converted into sterling at that day's exchange rate and London gold price (obtained from *Bankers Magazine*). This series forms the

TABLE A-1

GOLD AND FOREIGN-EXCHANGE HOLDINGS, MONTHLY, SEPTEMBER 1931 TO DECEMBER 1936, APRIL 1937, NOVEMBER 1938, MARCH-AUGUST 1939

(in thousands of pounds at current prices and exchange rates; 0 < £1,000, — = nil)

Date	*U.S. Dollars*	*French Francs*	*Other Currencies*[a]	*Gold*	*Total*
1931:[b]					
Sept. 30	£ 9	£ 3	—	£167	£179
Oct. 28	19	6	—	169	194
Nov. 25	20	4	—	159	183
Dec. 30	30	8	—	172	210
1932:					
Jan. 27	41,011	9,651	—	170,134	220,796
Feb. 24	54,969	13,046	—	168,727	236,742
Mar. 30	70,182	13,543	—	156,921	240,646
Apr. 21	46,739	16,205	—	156,235	219,179
May 26	52,898	20,940	—	188,658	262,496
July 7	25,167	22,909	—	218,976	262,052
July 30	22,907	21,157	—	220,285	264,349
Aug. 31	23,648	24,167	—	227,490	275,305
Sept. 30	23,107	3,081	—	225,524	251,712
Oct. 31	13,953	5,166	—	227,602	246,721
Nov. 30	24,345	3,735	—	242,384	270,464
Dec. 31	32,342	9,606	—	206,208	248,156
1933:					
Jan. 31	48,337	22,993	—	217,083	288,413
Feb. 28	47,891	21,247	—	262,537	331,675
Mar. 31	38,282	9,402	—	314,357	362,041
Apr. 30	39,560	8,872	—	339,821	388,253
May 31	42,390	4,822	—	342,798	390,010
June 28	33,929	3,998	—	356,447	394,374
July 26	29,894	— 3,450	—	326,288	352,732
Aug. 30	25,827	841	—	325,428	352,096
Sept. 27	18,195	1,714	—	338,733	358,642
Oct. 31	10,940	3,544	—	346,014	360,498
Nov. 28	653	3,330	—	357,260	361,243
Dec. 23	64	38	0	370,178	370,280
1934:					
Jan. 30	3	709	—	401,480	402,192
Feb. 27	12	216	—	418,928	419,156
Mar. 27	28	379	—	422,419	422,826
Apr. 28	112	436	—	430,235	430,783
May 29	186	— 1,514	—	436,599	435,271
June 26	149	— 158	£ 400	429,709	430,100
July 31	176	— 751	—	425,449	424,874
Aug. 28	136	— 2,551	—	411,376	408,961
Sept. 25	66	— 2,114	—	414,179	412,131
Nov. 1	43	— 400	—	402,817	402,460
Nov. 28	41	— 671	—	408,292	407,662
Dec. 27	332	— 893	—	414,417	413,856

Table A-1 (continued)

Date	U.S. Dollars	French Francs	Other Currencies[a]	Gold	Total
1935:					
Jan. 30	88	211	—	422,311	422,610
Feb. 27	93	— 1,561	—	430,041	428,573
Mar. 27	93	— 605	—	430,408	429,896
Apr. 24	170	27	—	440,295	440,492
May 29	90	7,561	—	446,593	454,244
June 26	131	— 1,291	—	458,414	457,254
July 31	225	1,133	1	475,991	477,350
Aug. 28	289	1,798	2	490,885	492,974
Sept. 25	237	— 2,289	4	496,861	494,813
Oct. 30	41	— 721	— 100	468,285	467,505
Nov. 27	672	2,748	11	477,279	480,710
Dec. 31	769	7	1	493,358	494,135
1936:					
Jan. 29	667	717	1	515,642	516,847
Feb. 26	622	— 170	1	522,428	522,881
Mar. 25	659	— 363	2	521,559	521,857
Apr. 29	558	1,913	2	575,747	578,220
May 27	654	293	2	600,579	601,528
June 24	815	— 430	0	618,083	618,468
July 29	— 3,786	— 609	— 764	623,051	617,892
Sept. 16[c]	660	86	— 11	631,286	632,021
Sept. 30	— 541	5	— 8	638,752	638,208
Oct. 28	— 1,013	3	15	648,261	647,266
Nov. 25	— 5,807	— 30	— 235	671,000	664,928
Dec. 31	— 41	6	— 63	706,425	706,327
1937:					
Apr. 14	241	60	28	702,664	702,993
1938:					
Nov. 21	— 36,302	— 4	— 83	673,097	636,708
1939:					
Mar. 31	— 10,524	0	438	592,506	582,420
Apr. 29	— 17,275	0	1,112	566,194	549,941
May 31	— 12,106	28	315	550,078	543,315
June 30	— 11,462	22	250	541,429	530,239
July 31	— 17,657	20	209	521,970	504,542
Aug. 30	— 43,784	11	1,148	462,040	419,415

SOURCES: "Treasury Special Account," T.160/409/F1454; Sayers (1976, Appendix 37) and Professor Sayers; files T.175/71, 72, and 87, T.160/565/F13039/1; H. M. Treasury, Issue Department monthly statements, and file HF 584/02; Bank of England, EEA monthly statements, March-August 1939; United Kingdom (1951); Bank of England weekly return (taken from *The Economist*).

[a] Other currencies comprised Dutch florins and Swiss francs (from July and August 1935, respectively), Belgian francs (from September 1936), Norwegian kroner and Swedish kronor (from December 1936), Canadian dollars (December 1933, June 1934, and after 1936), and Argentine pesos and Indian rupees (in 1938 and 1939).

[b] 1931 figures in millions of pounds.

[c] The end-August figure is not available because, as the source notes, "9th Aug. to 12 Sept. 1936 not received (leave)" (Hopkins's papers file T.175/87).

basis of Table A-1, which gives the authorities' overall position (spot + forward) in each currency and gold on the last Wednesday or last day of each month. When non-Wednesday figures have been used, the previous Wednesday's published gold holdings have been increased or decreased by the Bank's gold purchases and sales in the subsequent six days, as reported by *The Economist*, and then revalued at the current market price of gold.

Table A-1 includes figures for gold and foreign exchange held by the Treasury Special Account and the Bank of England (Banking and Issue Departments) from October 1931 to March 1932, the first six months after the suspension of the gold standard. The Special Account's holdings have been calculated from the Treasury's records of its purchases (file T.160/409/F1454 in the Public Record Office). The Bank of England's holdings have been calculated from Sayers (1976, Appendix 37), further data kindly provided by Professor Sayers, and the Bank of England weekly return. Both have been converted to pounds at current exchange rates and gold prices. After December 1936, there is a gap in the monthly series because the statements of EEA holdings for the years 1937 and 1938 have not survived. The Treasury and the Bank have, however, kindly provided access to the information available on EEA gold and foreign-exchange holdings in the years 1937-39. This includes correspondence between the Bank and the Treasury and memoranda written in 1937 and 1938 describing, with examples, the appropriate form the daily statements should take, and detailed monthly Bank statements of EEA holdings for March-August 1939. The relevant information, combined with the Issue Department's gold holdings and converted to current market values, has been included in Table A-1 to take it up to August 1939.[1]

The EEA's foreign-exchange holdings in the 1930s included 23 million reichsmarks. At the foundation of the Bank for International Settlements in 1930, the British government made a deposit with the BIS, and the BIS acknowledged an equivalent liability to repay 23 million "gold" reichsmarks. This asset was transferred to the EEA in 1932.[2] The authorities usually did not include it in their regular weekly or daily statements, so it has been omitted from Tables A-1 and A-2.

Table A-2 breaks down gold and total foreign-exchange holdings into Treasury (Special Account and EEA) and Bank of England (Banking and Issue Departments) holdings for the period when the Bank was in-

[1] The series can be extended through the war years, because monthly statements of EEA transactions and holdings during the Second World War are available in the Public Record Office (files T.126/1538, 1539, and 1540).

[2] I am indebted to Professor Sayers for sorting out this puzzle (and others).

TABLE A-2

BANK AND TREASURY HOLDINGS OF GOLD AND FOREIGN-EXCHANGE, MONTHLY, SEPTEMBER 1931 TO JUNE 1933

(in millions of pounds at current prices and exchange rates; 0 < £1 million, — = nil)

	Treasury[a]			*Bank of England*[b]			
Date	*U.S. Dollars*	*French Francs*	*Gold*	*U.S. Dollars*	*French Francs*	*Gold*	*Total*
1931:							
Sept. 30	—	—	—	£ 9	£ 3	£167	£179
Oct. 28	£ 2	—	—	17	6	169	194
Nov. 25	5	—	—	15	4	159[c]	183
Dec. 30	7	—	—	23	8	172	210
1932:							
Jan. 27	14	—	—	27	10	170[c]	221
Feb. 24	29	—	—	26	13	169	237
Mar. 30	17[d]	—	—	53	14	157	241
Apr. 21	12	—	—	37	16	156	219
May 26	7	—	£15	46	21	174	262
June 9	4	—	15	41	25	187	273
July 7	18	£ 6	15	7	17	199	262
July 30	19	3	28	4	18	193	264
Aug. 31	10	10	33	14	14	194	275
Sept. 30	13	3	30	10	—	196	252
Oct. 31	8	0	22	7	5	206	247
Nov. 30	21	0	28	3	4	214	270
Dec. 31	30	7	32	2	3	174	248
1933:							
Jan. 31	46	20	37	2	3	180	288
Feb. 28	43	11	52	5	10	211	332
Mar. 31	38	0	68	0	9	246	362
Apr. 30	40	1	71	—	8	269	388
May 31	42	0	71	—	4	271	390
June 28	34	0	84	—	—	273	394

SOURCES: "Treasury Special Account," T.160/409/F1454; Sayers (1976, Appendix 37) and Professor Sayers; files T.175/71 and 72, T.160/565/F13039/1; H. M. Treasury, Issue Department monthly statements; United Kingdom (1951); Bank of England weekly return (taken from *The Economist*).

[a] Special Account up to and including June 9, 1932; EEA thereafter.

[b] Foreign exchange in Banking Department; gold in Issue Department and also some holdings by Banking Department May to July 1932.

[c] The Bank repaid the August 1931 central-bank credits in November 1931 (£20 million) and January 1932 (£30 million).

[d] The Treasury repaid £50 million of its August 1931 borrowings on March 4 and 30, 1932, and the remainder on September 10, 1932.

tervening on its own account as well as for the Treasury. It thus shows the transfers of reserves between Bank and Treasury in 1932 and 1933.

Finally, Table A-3 takes the relevant figures from Table A-1 and some other sources (including the published quarterly data) for 1937-39 to produce a quarterly series of official reserves from the end of the gold standard to the outbreak of the Second World War.

TABLE A-3

GOLD AND FOREIGN-EXCHANGE HOLDINGS, QUARTERLY, SEPTEMBER 1931 TO AUGUST 1939

(in millions of pounds at current prices and exchange rates; 0 < £500,000)

Date	*Foreign Exchange*	*Gold*	*Total*
1931:			
Sept. 30	£12	£167	£179
Dec. 30	38	172	210
1932:			
Mar. 30	84	157	241
July 7	48	214	262
Sept. 30	26	226	252
Dec. 31	42	206	248
1933:			
Mar. 31	48	314	362
June 28	37	356	394
Sept. 27	20	339	359
Dec. 23	0	370	370
1934:			
Mar. 27	0	422	423
June 26	0	430	430
Sept. 25	— 2	414	412
Dec. 27	— 1	414	414
1935:			
Mar. 27	— 1	430	430
June 26	— 1	458	457
Sept. 25	— 2	497	495
Dec. 31	1	493	494
1936:			
Mar. 25	0	522	522
June 24	0	618	618
Sept. 30	— 1	639	638
Dec. 31	— 0	706	706
1937:			
Mar. 31	—10	716	706
June 30	n.a.	792	(792)
Sept. 30	8	820	828
Dec. 31	n.a.	825	(825)
1938:			
Mar. 31	— 2	835	833
June 30	n.a.	794	(794)
Sept. 30	—16	710	694
Dec. 31	n.a.	615	(615)
1939:			
Mar. 31	—11	593	582
June 30	—11	541	530
Aug. 30	—43	462	419

SOURCES: Table A-1; files T.160/660/F13039/04, T.177/48; United Kingdom (1951).

n.a. = not available.

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