Chapter IV The balance of trade

The main purpose of this chapter is to estimate the net cost in terms of resources (i.e. the excess of exports over imports measured at 1963 prices) of maintaining a satisfactory balance of payments position. The previous chapter has examined the balance sheet of foreign assets and liabilities together with balance of payments flows (long-term capital, trade credit, property income and transfers) which affect the net reserve position, in order to establish the size of surpluses or deficits on trade in goods and services which would be required to maintain a satisfactory level of reserves in relation to short-term liabilities over the entire period 1960-75. These trade targets which the par economy is required to achieve in order to satisfy the balance of payments objectives, included in the definition of par (see the introductory chapter), are given in detail in Appendix Table 5 and summarised in Tables IV-1 and IV-2 below.

2. The results of the previous chapter make it possible to obtain predictions of the effect on the reserve position of any assumed actual balance of trade flows. In this chapter we shall therefore also estimate the impact on the reserve position of GDP growth at 4.5% per year from 1971 to 1975 under the assumptions

(a) no devaluation of the exchange rate (Projection I),

and (b) substantial devaluation at end-1973 (Projection II).

These estimates will show the problems which may arise as the economy is brought back to the par pressure of demand in the next few years.

Summary of conclusions

3. Table IV-1 below compares the net resource cost of the trade deficits and surpluses actually achieved from 1961 to 1971, and expected under the assumptions of paragraph 2(b) above for 1972-5, with the resource cost to the par economy achieving its required trade targets. On average the resource cost (in 1963

prices) of achieving a small positive target (at current prices) has over the period 1960-70 been a small positive amount. By 1971 external circumstances appear to have become particularly favourable in the sense that an actual trade surplus of about £600 million has been achieved at a very modest resource cost (£118 million at 1963 prices) and the par economy can earn a target surplus of £105 million at a negative net resource cost. The projections to 1975 imply that the cost of achieving a positive trade surplus will have risen, by 1975, to a level similar to that which would have been required in the 1960's.

Table IV-1 The resource cost of trade surpluses

£ million, annual averages

	Actual		Par	
	Trade surplus (current prices)	Resource cost (1) (1963 prices)	Trade target (current prices)	Resource cost (1) (1963 prices)
1961-5	-258	-229	8	16
1966-70	-93	-105	80	41
1971	602	118	105	-149
Projected (2)				
1972-5	-76 (3)	-230 (3)	190	-29
1975	212 (3)	203 (3)	250	168

(1) Exports less imports of goods and services at 1963 prices.

(2) Value of trade surplus deflated to 1970 values (see paragraph 11).

(3) Hypothetical projection assuming 4.5% per year growth of GDP and devaluation at end-1973 (Projection II). See paragraphs 2 and 32.

4. Table IV-2 below shows the effect on the net reserve position of balance of trade flows. From 1961 to 1970 the net reserve effect of actual trade deficits and surpluses was on average almost exactly equal to the trade balance because, as the previous chapter has shown, net earnings on property income

supplemented by increased IMF drawing rights just about balanced the net outflow of transfers, long-term capital and trade credit. In 1971 the non-trade items (including £125 million of SDR's and a net inflow of long-term capital) augmented the effect of a large trade surplus to produce a net reserve improvement of over £1,000 million. But for 1972-5 adverse non-trade flows combine with trade deficits projected under the hypothetical assumptions of paragraph 2 above to produce a large depletion of reserves net of short-term liabilities. The table also shows how the par economy is required to achieve rising trade targets, and accumulates net reserves up to 1971 partly in order to absorb some of the adverse non-trade flows by reducing net reserves in the period 1972-5.

Table IV-2 Reserve effects of the balance of trade

Totals over period, £ million, current prices

	Actual		Par	
	Trade balance	Net reserve effect	Trade target	Net reserve effect
1961-5	-1290	-1273	41	58
1966-70	-464	-443	400	421
1971	602	1040	105	543
Projected(1) 1972-5	-305(2)	-1470(2)	760	-405

(1) Deflated to 1970 values (see paragraph 11).

(2) Hypothetical projection assuming 4.5% per year growth of GDP and devaluation at end-1973 (Projection II).

Assumptions and method of analysis

5. The par economy is assumed to achieve its required trade target without any deflation of demand (i.e. continuously maintaining 2.5% unemployment) by the use of measures (such as exchange rate changes) which strengthen or weaken the competitiveness of U.K. producers, and in so doing shift the terms of trade

by raising or lowering export prices relative to import prices. This assumption is the most favourable, as regards the resource cost of meeting potential shortfalls on the balance of trade, which could be made. If deflation is used as a method of balance-of-trade adjustment the resource cost of achieving the trade target would obviously be very much greater.

6. Our analysis proceeds in two main stages. First, starting with the actual balance of trade on goods and services (as measured in the national income accounts) we estimate the volume and value of imports and exports which would be the counterpart of a par pressure of demand, assuming no change in the actual competitiveness of U.K. producers. The second stage of analysis starts with a comparison of this 'full-employment' balance of trade with the required trade target; the difference represents the potential trade gap remaining to be closed by an adjustment of the competitiveness of U.K. producers. An estimate is made of the effect on the value and volume of imports and exports of the effective devaluation or revaluation required to close the trade gap. The excess of the volume of exports over the volume of imports estimated in this way is the resource cost to the par economy of achieving the trade target.

<u>Adjustment for the pressure of demand</u>

7. The first adjustment defined above (i.e. the adjustment of the actual balance of trade to the par pressure of demand) is in fact calculated as an adjustment of the volume of imports alone leaving unchanged the terms of trade and volume of exports. If there were strong evidence that a change in the pressure of demand directly affects export volumes or values, it would be necessary to adjust exports at this stage; but the available evidence on this point is weak. There is some reason to expect a change in the import price index (based at 1963) accompanying a change in the pressure of demand because the price index for imports of manufactures, for which the marginal import propensity may be high, has risen faster than prices of imported food and raw materials. Thus an increase in the pressure

of demand would have tended to raise the import price index in recent years and reduce the index in years before 1963. We have not been able to establish the quantitative importance of this effect and therefore assume that the terms of trade are insensitive to the pressure of demand.

8 The marginal propensity to import, defined as the ratio of changes in the volume of imports to changes in the postulated level of GDP, must be assumed in our analysis to be higher than the average ratio of imports to GDP since the adjustment of demand from actual to par levels is assumed not to comprise any change in public expenditure on goods and services which itself has a below-average import content. Using input-output estimates of direct and indirect import contents of different categories of expenditure in 1963 and 1968 and making allowance for changes in the composition of demand, the marginal import propensity (at 1963 prices) for adjustment from actual to par levels of GDP is estimated to have risen from 25% in 1960 to 36% in 1971, and is projected to continue rising by 1% per year to 1975.

Adjustments to close the trade gap

9. The second stage of adjustment in our analysis requires us to estimate the effects of a change of competitiveness sufficient to close any gap between the trade target and the 'full employment' trade balance (the actual surplus or deficit adjusted to the par pressure of demand). We assume that a change in competitiveness is reflected in a shift in the terms of trade and leads to a change in the volume of exports but does not affect the volume of imports. This assumption is made principally for convenience and has almost no effect on the estimated resource cost of meeting the target balance of trade. It is hard to find evidence in recent U.K. experience that devaluation has had any significant influence on the volume of imports, so that in any case our assumption may not be too unrealistic.

10 The increase in the volume of exports assumed to follow from a forced deterioration of 1% in the terms of trade is 4.3%. This implies an improvement in the balance of trade equal to 3.3% of the value of exports, and a resource cost (in current values) of £130 million for an improvement of £100 million in the balance of trade. These quantitative adjustments do not directly define the elasticity of foreign demand for UK exports because part of the terms of trade shift might be obtained through a change in the dollar price of UK imports. If the terms of trade is shifted through an exchange-rate devaluation or revaluation the sterling prices of imports and exports may be expected to change substantially; but again, the assumptions made above do not commit us to any particular view about the change in sterling prices or the elasticity of supply of exports.

11 To avoid the need for assumptions about changes in price levels we express par imports and exports at 'constant 1970 values', abstracting from price movements not reflected in the terms of trade (because they are common to both import and export prices) by deflating current values by the import price deflator (based at 1970). The value of par imports (measured in this way) is therefore unaffected by terms-of-trade changes, and the entire balance of trade adjustment, not only of volumes but also of values, is thrown onto exports. Trade flows measured in 1970 values are denoted in the Appendix Tables and in formulae given below by a suffix 70. The problem of relating the balance of trade expressed in this way to non-trade flows and to the net reserve position has been discussed in the previous chapter (paragraphs 11 and 21-4).

<u>The par balance of trade, 1960-71</u>

12. Given the general method outlined in the preceding paragraphs, the steps followed in calculating the resource cost of achieving the target balance of trade at the par pressure of demand in the period 1960-71 may now be described. Adjustment of the volume of imports using the estimated marginal propensity

discussed in paragraph 8 above is given by

$$\bar{M}^* = \bar{M} + (0.25 + 0.01t)(Y^* - Y)$$

where $\bar{M}^*$, $\bar{M}$ are par and actual imports at 1963 prices, Y^*, Y are par and actual levels of GDP, and t is a trend rising from 0 in 1960 to 11 in 1971. The value of par imports at current prices, M^*, is estimated as

$$M^* = \bar{M}^* \frac{M}{\bar{M}}$$

where M is actual imports at current prices. The 'full-employment' trade balance is now obtained as $X - M^*$, where X is actual exports at current prices.

13. The estimated full-employment trade balance shown in Table IV-3 below is positive throughout the period 1960-70, with the exception of the years 1960, 1964 and 1967-8, because actual GDP was well above par up to 1969 and the adjustment to par GDP more than compensates for recorded trade deficits. But by 1971 the shortfall of actual compared with par GDP is sufficiently large for the adjustment to absorb a large part of the recorded trade surplus, reducing the 'full-employment' balance to under £200 millions. The detailed results are given in Appendix Table 6.

14. The trade gap at par levels of GDP can now be calculated as the difference between the trade target, BT*, and the 'full-employment' trade balance, X - M* (see Table IV-3 below). Up to 1966 this gap fluctuates; it is large and positive for 1967-8, and negative for 1969-71.

Table IV-3 The trade gap at the par level of GDP, 1960-71

£ million, 1970 values(1)

Year	Target balance of trade	'Full-employment' balance of trade	Trade gap
1960	-50	-154	104
1961	-30	172	-202
1962	-10	84	-94
1963	10	124	-114
1964	30	-172	202
1965	50	213	-163
1966	70	313	-243
1967	80	-280	360
1968	90	-112	202
1969	100	331	-231
1970	100	231	-131
1971	100	168	-68

(1) See paragraph 11

15 The trade gap, defined as above, is of course also equal to the difference between the required value of exports and the actual value assumed in the 'full-employment' trade balance. Expressing the trade target and the value of imports at 1970 values (see paragraph 11 above), the required value of exports is

$$X^*_{70} = BT^*_{70} + M^*_{70}$$

and the trade gap is equal to

$$X^*_{70} - X_{70}$$

where X_{70} is the actual value of exports, deflated by the import price deflator (based at 1970).

16. The second stage of analysis requires us to estimate the changes in UK competitiveness, reflected in adjustments of the terms of trade, required to close the trade gap. An initial estimate, $\widehat{TT}$, of the terms of trade which would be sufficient to close the trade gap is given, under the assumptions of paragraph 10 above, by the formula

$$\widehat{TT} = TT \quad 1 - \frac{1}{3\ 3} \frac{X^*_{70} - X_{70}}{X_{70}}$$

where TT is the actual terms of trade. This formula provides estimates of the required par terms of trade in each year which still reflect year-to-year fluctuations in the actual terms of trade and which implicitly assume an instantaneous response of exports to the terms-of-trade adjustment.

17. A smoothing procedure is then used to calculate a par terms of trade, TT^*, bearing in mind the need to allow some lag in the reaction of the balance of trade to exchange rate adjustments and at the same time smoothing to some extent fluctuations provoked by the irregular movement in the terms of trade resulting from erratic changes in the price of food and raw materials imports and in actual export prices.

18. As noted in paragraph 14, the trade gap at the par pressure of demand has fluctuated over the period 1960-70, showing alternating positive and negative values. The smoothed par terms of trade is therefore much the same, on average, as the actual terms of trade and like the latter shows no pronounced trend althou it begins to move up quite sharply after 1969 implying that trading conditions have been more favourable to the U K in the two years 1970-1 (see Appendix Table 7).

19. Given the par terms of-trade and the par value of exports (paragraph 15) measured relative to import prices (at 1970 values), we can obtain the required par volume of exports at 1963 prices, $\overline{X}^*$, by the identity

$$\overline{X}^* = X^*_{70} \quad \frac{100}{TT^*} \left(\frac{\overline{M}_{1970}}{M_{1970}} \right)$$

where TT* is the par terms of trade (base 1963=100) and the last term is the deflator for import prices in 1970 relative to 1963. The resource cost of achieving the trade target at the par pressure of demand is then

$$\overline{X}^* - \overline{M}^*$$

Detailed results of the sequence of calculations are given in Appendix Table 7 and the estimated resource cost has been summarised in Table IV-1.

The par balance of trade, 1972-5

20. Estimates of the resource cost of achieving future trade targets will be obtained by essentially the same method as that we have used for the past period (1960-71). The first stage of analysis of the past period was to adjust the actual balance of trade to the par pressure of demand. In projecting the future, 1972-5, we shall start with estimates of probable changes in the balance of trade at the par pressure of demand and at hypothetical actual terms of trade. These initial estimates are in effect a projection of the full-employment balance of trade.

21. The second stage of analysis is identical to that used for the past period. Given the initial projection of the 'full-employment' balance of trade and a required trade target (obtained in the previous chapter), we estimate the terms-of-trade adjustment required to achieve the trade target and hence the resource cost of the par balance of trade. We find that the par terms of trade will have to fall back by 1975 to about 100 (base 1963) from the level of 102.5 which was adequate in 1971, and that the resource cost of achieving the trade target (itself substantially higher by 1975 than in 1971) will increase from 1971 to 1975 by over £300 million at 1963 prices (see Tables IV-1 and Appendix Table 7).

22. The initial projection, which establishes the expected future 'full-employment' balance of trade, assumes that the actual terms of trade (which rose sharply from 100.9 in 1970 to 103.7 in 1971) will gradually return to a level of about 103.0 in 1975. This assumption is based on the expectation that U.K. competitiveness will not deteriorate rapidly, and that by 1975 world prices of food and raw materials will catch up with the inflation of world prices of manufactures and make good some of the ground lost in 1970-71.

23. Given this terms-of-trade assumption, we estimate the growth of the volume of exports and imports at the par level of GDP. But before discussing these estimates we must explain the way in which we have treated the effects of entry

into the EEC. As regards trade in industrial products, the progressive reduction in tariffs must be expected to stimulate the volume of trade in both directions. No allowance has been made for this effect in our projections because we have not been able to establish any presumption as to the net effect on the U.K. balance of trade; any allowance for increased gross flows will not materially affect the results of our analysis.

24. The expected increase in the value of agricultural imports into the U K. following introduction of the Common Agricultural Policy is also not explicitly introduced in our projections. The reason for this is that a substantial saving in fuel imports is expected over the same period, as a result of the exploitation of North Sea gas and oil sources; we regard the fuel saving as largely offsetting the increased cost of agricultural imports. It is worth noting that the fuel savings do not really 'pay' for these costs of EEC entry because the counterpart of reduced fuel imports is a larger outflow of property income discussed in the previous chapter (paragraphs 14 and 19, chapter III).

25. Table IV-4 below shows the growth in the volume of exports and imports (adjusted to the par pressure of demand) in the past (1961-71), and the growth rates projected under the assumptions of the previous paragraphs for 1971-5. Exports are projected to grow at 5% per year, about the same rate as from 1969 to 1971 and rather faster than in the pre-devaluation period 1961-5.

Table IV-4. The growth of export and import volumes
(Growth rates, % per year)

	Exports of goods and services at 1963 prices	Imports of goods and services at 1963 prices adjusted to par GDP
1961-5	3.7	3.5
1965-9	6.6	6.4
1969-71	4.9	8.3
Projected[1]		
1971-5	5.0	7.5

(1) On the initial terms of trade assumption (see paragraph 22)

26. The table above shows that the par volume of imports has grown at an accelerating rate, and has increased particularly rapidly in the past two years (1969-71). The par growth rates since 1965 simply reflect the rapid growth of the actual volume of imports (4.9% per year 1965-9 and 5.7% per year 1969-71) at a time of slow growth of GDP and a falling pressure of demand. The acceleration in the total volume of imports is largely due to the rising share of imports of manufactures in the total, and partly to an acceleration in the growth of imports of manufactures themselves; imports of food and raw materials show little trend increase. The future growth of the volume of imports at the par pressure of demand is projected at 7.5% per year for 1971-5. This may prove to have been a conservative projection, but since we do not have a precise quantitative explanation of the past growth of imports it would be wrong to be too much influenced by the growth of estimated par imports in the last two years.

27. The ratio of imports to GDP, whether at actual or par levels, has risen steadily from about 22% in 1961 to over 27% in 1971. Our projection of the future growth of imports implies that the ratio of par imports to GDP will rise to 32.3% in 1975. Table IV-5 below shows the ratios of imports to GDP at factor cost in various other industrial countries in 1963 and 1969. It is notable that this ratio has increased substantially between the two years in all the countries shown in the table; the rise in imports in relation to GDP cannot therefore be explained simply as a result of the decline in the general competitiveness of each country. It is also evident from the table that the ratio of imports to GDP in the U.K. was not particularly high as compared with other European countries, particularly when allowance is made for the dependence of the U.K. on imported food and raw materials. The evidence of this table therefore reinforces our expectation that the growth of imports will substantially exceed the growth of GDP over the next few years.

Table IV-5. The ratio of imports of goods and services[1] to GDP at factor cost

Country	1963	1969 (at 1963 prices)
Japan	11.5	13.2
France	15.5	21.0
Italy	19.6	23.8
Germany	20.8	25.1
Denmark	35.2	45.2
Belgium	42.1	56.1
Norway	47.7	55.2
Netherlands	55.2	69.6
U.K.	24.1	27.1

(1) Including property income paid abroad

Source: Calculated from OECD, Main Indicators

28. The initial 'full-employment' trade balance is estimated to show a deficit of about £1,300 million (at 1970 values) by 1975 because the volume of imports is projected to grow substantially faster than the volume of exports and because of a slight deterioration in the terms of trade. The target balance of trade which the par economy is required to achieve rises to £250 million in 1975 so that the implied trade gap, at the projected terms of trade of 103.0, is over £1,500 millions.

29. In the par economy this trade gap is closed by adjustment of the terms of trade (see paragraphs 9-10 above); the smoothed par terms of trade are therefore required to fall back to about 100 in 1975 inducing an improvement in the volume of exports sufficient to achieve the target trade surplus. The resource cost of meeting the trade target is estimated to rise from -£149 million (i.e. a net gain in resources, measured at 1963 prices, from trade) in 1971 to +£168 million in 1975. The resource cost of achieving the target is of course very much less than the size of the trade gap because a large trade deficit implies a large net gain of resources (or negative resource cost) from trade.

Sensitivity of the projections

30. The estimates given in the previous paragraphs are based on very uncertain projections of the terms of trade and the growth of import and export volumes. If we assume that the par volume of imports will grow at 7.0% instead of 7. % per year, the 'trade gap' in 1975 falls to under £1,300 million, and if further the volume of exports is assumed to grow at 5.5% instead of 5% per year, it is reduced to about £1,200 million. The par terms of trade could then be improved by nearly 1% and the resource cost of achieving the target balance of trade in 1975 could be reduced by about £100 million to £70 million (at 1963 prices). Thus every 1% per year reduction in the projected growth of import volumes, or increase in the projected growth of exports, will reduce the 1975 trade gap by about £300 million (at 1970 values) and reduce the resource cost of achieving the target trade balance by about £100 million.

31. Our initial assumption is that the terms of trade could be expected to fall to 103.0 (base 1963=100) in 1975 compared with a level of 103.7 in 1971. If in fact the terms of trade improve to (say) 105.0 by 1975 without any adverse effect on the projected growth of imports and exports, the estimated trade gap will be reduced to about £1,300 million with a saving of about £60 million (at 1963 prices) in the resource cost of achieving the target trade surplus. On the other hand if the response of the trade balance to a change in the terms of trade is less elastic than we have assumed (see paragraph 10), the resource cost could be substantially greater. Bearing in mind all the uncertainties, our initial figure for the resource cost to the par economy of achieving the 1975 target surplus, estimated as £168 million at 1963 prices, may be regarded as subject to a margin of uncertainty of up to ± £150 million.

Projections assuming 4.5% per year growth of GDP

32. The par projections to 1975 can be modified by the same methods used to obtain past par estimates in order to examine the consequences for the balance of trade

of any assumed future growth of actual GDP and terms of trade The following paragraphs will describe two hypothetical projections, both of which assume 4 5% per year growth of actual GDP from 1971 to 1975 The first projection assumes that the future terms of trade will be those assumed in our calculation of the 'full-employment' balance of trade (see paragraph 22), which are in effect expected actual terms of trade The second projection assumes a substantial devaluation at end-1973 which reduces the terms of trade to below 100 by 1975

33 These two hypothetical projections suggest that 4 5% growth of GDP would lead to severe balance-of-payments problems before 1975 A trade deficit is expected by 1973, and without devaluation this deficit is projected to rise to about £1,800 million by 1975 The devaluation at end-1973 restores the trade balance to a surplus of £200 million in 1975

34 The effects of these projections on net reserves can be estimated using the projected non-trade flows obtained in the previous chapter. Table IV-6 below summarises the net reserve effects The details of the balance of trade projections are given in Appendix Table 8.

Table IV-6 Alternative projections of the balance of trade and net reserves (1)

Year	Balance of trade	Current balance	Other flows (2)	Net reserve effect	Cumulative reserve effect (3)
1972	148	425	-203	222	222
1973	-396	-191	-410	-601	-379
Projection I					
1974	-1051	-988	-500	-1488	-1867
1975	-1828	-1839	-586	-2425	-4292
Projection II					
1974	-269	-206	-500	-706	-1085
1975	212	201	-586	-385	-1470

(1) Hypothetical projections assuming 4 5% per year growth of GDP (see paragraph 32)

(2) Long-term investment, trade credit, etc (includes £118 million receipt of SDR's in 1972)

(3) Cumulative effect since end-1970

35. The table shows a projected trade surplus of £150 million (at 1970 values) in 1972, and a current surplus of over £400 million But since the receipt of Special Drawing Rights is insufficient to compensate for the outflow of long-term investment and trade credit, the improvement in net reserves is only £150 million. By 1973 the trade balance shows a substantial deficit, whose effect on the reserves is augmented by other flows Without devaluation the reserve position deteriorates enormously in 1974-5 because of large trade deficits and continued capital outflows Projection II, assuming a devaluation at end-1973, shows a trade surplus for 1975. But the non-trade items are sufficiently adverse by the latter year to produce a continued drain on the reserve position

Balance of payments difficulties, 1972-5

36 All these projections are based on uncertain assumptions about the likely growth of imports and exports, movements of the terms of trade, and changes in other balance of payments flows But even if considerably more optimistic assumptions are made the risk of a substantial balance of payments problem by 1975 still appears to be high unless the level of GDP is held down well below the projected par level consistent with 2 5% unemployment.

37. Balance of payments difficulties implicit in the projections to 1975 result from the conjuncture of several major adverse factors, compared with the 1971 position:

(a) The fast-growing category of imports, manufactures, forms an increasingly large share of total imports.

(b) The par pressure of demand, higher than that actually experienced in 1971, must be expected to raise the volume of imports relative to exports.

(c) Entry to the EEC will require substantial transfer payments and cause some increase in the cost of food imports

(d) The net outflow of long-term capital will increase as inward oil investment falls off.

(e) The net inflow of property income will be reduced as returns to recent inward long-term investment are obtained.

(f) A large net outflow of trade credit will be required to maintain the growth of exports

The only favourable factor to be expected over the next few years is the saving in fuel imports provided by the exploitation of North Sea sources.

38. The possibility of substantial balance of payments difficulties over the period to 1975 has important implications for the allocation of resources. Balance of payments problems have generally in the past led to some deflation of domestic demand; the resources available over this period could therefore be reduced below par levels if for balance of payments reasons the pressure of demand is not allowed to rise to or above par by 1974-5.