Bank of England

Discussion Paper No. 6

'Real' national saving and its sectoral composition

by

C.T.Taylor

and

A.R.Threadgold

October 1979

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Summary

1 The principal object of this paper is to offer some quantitative estimates of inflation-adjusted saving and financial surpluses/deficits for the main sectors of the economy (persons, companies, general government, etc.) and for the economy as a whole. The only statistical innovation, but an important one nevertheless, is to introduce an allowance for real capital gains/losses on sectoral holdings of net monetary liabilities/assets, in accordance with the principle, well established in economic theory, that such gains/losses are genuine elements in 'comprehensive' income which ought ideally to be allowed for in a full accounting for inflation. The adjustments so introduced are analogous to the gearing adjustment proposed by constant purchasing power accountants for companies.

2 Given recent rates of inflation the result is, inter alia, to produce measures of saving and financial balances which are considerably different from the usual nominal measures. The general pattern is that the apparent balances in the personal sector are written down substantially, while those in the government sector (and, to a lesser extent, companies) are written up. This is because persons are typically large net holders of monetary assets, whereas general government is a large net monetary debtor (and companies likewise, to a lesser degree, on the whole). By virtue of this kind of adjustment, the general government borrowing requirement is estimated to have averaged around £1 1/2 billion per annum in inflation-adjusted terms in the period 1975-78, as compared with an average requirement of £8 billion per annum in nominal terms.

3 The paper does not claim to offer a full accounting for inflation. For example the figures exclude real capital gains/losses on non-monetary assets/liabilities - most importantly housing in the personal sector - although there is a case for including them. However, the new estimates are held to be worthwhile in themselves; and in so far as the aggregate public sector balance is concerned, the inclusion of non-monetary assets/liabilities would probably not radically change the general direction of adjustment.

4 The paper goes on to comment on the implications of the adjusted figures. The main point, perhaps a fairly obvious one, is that nominal magnitudes may be a misleading guide to the real size

and importance of sectoral savings flows, and of financial magnitudes such as the public sector borrowing requirement (PSBR) or central government borrowing requirement (CGBR); and that for some purposes more attention should be paid to the adjusted figures.

Introduction [1]

5 With the high rates of inflation of the past few years, great interest has naturally developed in their impact on economic behaviour. In the course of the debate, considerable doubt has been cast on the usefulness of conventional accounting information. Concern has been most active in the area of company accounting, and rules have been devised for the inflation-adjustment of company accounts along the current cost accounting (CCA) lines suggested by the Sandilands Committee.[2] These have been fairly widely accepted, but they have been criticised by exponents of constant purchasing power (CPP) accounting principles on the ground that they fail to allow for the gains that accrue to the equity interest in companies through the effect of inflation in eroding the real value of monetary liabilities.[3] As a result of this criticism, draft proposals for a new accounting standard with adjustments which go some way to allow for holding gains on company debt have recently been drawn up by the Accounting Standards Committee.[4]

6 If such adjustments are appropriate for one sector of the economy, they must also be appropriate for others - if only for statistical consistency. In particular, economists have been impressed by the evidence that the ratio of personal consumption to income, as ordinarily measured in the national accounts, has been affected by systematic efforts to rebuild net monetary or financial assets, the real value of which has been greatly eroded by inflation.[5] This suggests that consumers' behaviour might be easier to understand if income and savings were measured net of the real capital losses suffered from holding cash,

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[1] We gratefully acknowledge the unstinting contribution from immediate colleagues in the Economic Intelligence Department, in particular S.P.Collins, C.R.Mann, C.M.Miles and M.J.Pratt, to the detailed thinking and to the extensive calculations that underly the estimates herein presented. We are also grateful for numerous helpful comments, criticisms and suggestions on a wide variety of points offered by other colleagues in EID and by individuals in the Central Statistical Office, the Inland Revenue and the Treasury. Responsibility for the figures and for their interpretation here nevertheless lies entirely with the authors.

[2] Inflation Accounting Committee (1975).

[3] For example, see Kennedy (1978).

[4] Accounting Standards Committee (1979).

[5] Townend (1976).

bank deposits, etc. in a time of high inflation. Similarly, it has been suggested that part of the rising flow of public sector debt interest payments which have contributed heavily to the PSBR - as ordinarily measured - in recent years can better be regarded as compensation to private savers for capital losses on their holdings of public sector debt, and should more realistically be treated as a real repayment of capital rather than income.[1] If so, there may be something to be said for seeking adjusted measures of income and saving which take some account of the effects of inflation.

7 With a view to taking the debate a step further, this paper presents alternative estimates of income and saving which move some way towards the concept of comprehensive income favoured by economists. Sir John Hicks long ago defined comprehensive income, according to his central criteria, as 'the maximum value which [an individual] can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning'.[2] Unfortunately, this definition, although appealing to common sense, contains an element of subjectivity in that it brings in expectations, e.g. of price changes in the relevant week, and hence is not entirely suitable for national accounting purposes.[3] For accounting purposes, a more restricted measure of income seems appropriate: the value which an individual could consume without any change in the real value of his capital.[4]

8 In what follows, attention is drawn to the 'alternative' figures of saving already published for all the main sectors of the economy in the national accounts,[5] which include adjustments exactly analogous to those recommended by CCA accountants (without specifying their

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[1] Downton (1977).

[2] Hicks (1946), page 72.

[3] Hicks preferred a version which emphasises permanence or recurrence as an essential attribute of income: 'the maximum amount of money which the individual can spend this week, and still expect to be able to spend the same amount in real terms in each ensuing week' (page 174). This contains an even larger element of subjectivity in that it brings in expectations of future income flows.

[4] For practical purposes, human capital, including stocks of knowledge relevant to income generation, must probably be excluded, although estimates for some countries have been attempted.

[5] Central Statistical Office (1978a), Table 1.8: 'Alternative Presentation'.

interpretation as such). The present paper also proposes a further adjustment designed to incorporate the effects of general inflation on monetary assets/liabilities, admittedly rather crudely,[1] and comments briefly on the resulting figures and on their meaning and implications.

9 The effect of these adjustments is to give estimates of income and saving which, although incomplete, are more convenient for some analytical purposes than are the orthodox national accounting figures. Income here includes factor income (adjusted for current transfers) net of stock appreciation and capital consumption at replacement cost plus real capital gains and losses on net monetary liabilities (i.e. claims which are fixed in money terms, defined more fully in Appendix 1, paragraphs 40-43) and net capital transfers. A further adjustment, for real gains/losses on non-monetary assets/ liabilities, would be required for completeness. Such an adjustment has not been attempted, mainly because of the size of the measurement task, although reasons will also be given for believing that for some purposes the omission is probably not a major drawback.[2]

10 In that the adjusted estimates for saving etc. given below are in an important sense corrected for the effect of general inflation, it seems reasonable to describe them as 'real' for convenience, just as inflation-adjusted profits are normally described as 'real'. However, because the inflation adjustments are not the only ones necessary to yield comprehensive income and saving, and because the resulting measures remain in current prices (although they could readily be converted to any desired constant price basis), the term 'real' here has a rather special meaning (and hence will be kept in inverted commas throughout).

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[1] Saving is adjusted for net capital transfers in order to maintain consistency with the adjustment for notional capital repayments on net monetary assets and liabilities.

[2] For example, it might be argued that a measure which excludes real gains/losses on net non-monetary liabilities is closer to the Hicksian preferred definition involving expectations of recurrent income than might initially appear. An increase in the real price of a tangible asset (for example, because of an increase in its real production costs) may in practice have no close connection with the future earning power of the asset, and if so should not be included as part of comprehensive income on this definition.

Saving measured 'at current cost'

11 For the nation as a whole, saving may be calculated as follows, using standard figures from the national accounts:

Table A

UK national income and saving, 1977[a]

£ billion

1	Total domestic income[b]	128.7
2	plus: Central government income from indirect taxes (i.e. factor cost adjustment)	17.1
3	less: Depreciation at replacement cost	- 15.8
4	less: Stock appreciation	- 5.3
5	plus: Net property income from abroad	0.4
6	National income 'at market prices'	125.1
7	less: Domestic current expenditure on goods and services at market prices	-112.7
8	less: Net current transfers abroad	- 1.2
9	less: Residual error	- 1.1
10	National saving after providing for depreciation and stock appreciation	10.1
11	10 as percentage of 6	8.1%

Source: Central Statistical Office (1978a), Tables 1.1, 1.2, 1.7.

[a] Figures later in the paper incorporate subsequent revisions to these numbers.

[b] Income (including stock appreciation) from employment and self-employment, gross trading profits of public and private incorporated businesses and rent (including imputed rent and imputed capital consumption of non-trading assets); plus the residual error between income and expenditure measures of GDP.

The adjustments in lines 3 and 4 of Table A correspond exactly with those recommended by current cost accountants, namely the deduction from income of depreciation (capital consumption) at replacement cost and stock appreciation. In this sense, these figures are at least partially inflation-adjusted, in that factor incomes are adjusted to allow for the maintenance of the real value of trading capital.

12 It should be noted that these figures include no capital gains or losses accruing to the United Kingdom in respect of external investments and debts, and are thus not consistent with the definition of comprehensive income proposed above. Yet because the United Kingdom has substantial net external liabilities of a monetary or near-monetary character, it is to be expected that net real gains will have accrued from the erosion of these liabilities in a period of high inflation, particularly where liabilities are denominated in sterling. One suggestion underlying the present exercise is that these net gains should be included as elements of national income and saving which supplement the existing measures, and estimates for them are offered in the next section.

13 Ultimately, all saving is undertaken by, or on behalf of, households, since they are the ultimate owners, individually or collectively, of all national wealth. Nevertheless, because the links between ultimate ownership and effective control are often tenuous, it greatly helps an understanding of economic behaviour if a distinction is made between saving by the main groups of economic agents or sectors, i.e. the personal sector (including life assurance and pension funds), the company sector, the public sector and the overseas sector.[1] To derive saving by sector, the framework in Table A has to be amended as follows:

(i) allowance is made for the payment of direct taxes (including national insurance contributions) on factor incomes and for subsidies and grants such as pensions, etc. in calculating disposable income; and

(ii) disposable income is measured after taking account of interest, profits and dividend flows (and tax thereon) between sectors.

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[1] More specifically, the 'company sector' represents the shareholders' (or equity) interest in companies; and the 'public sector', the taxpayers' interest in the net worth of public corporations and the general government sector. Hence company sector saving is that which is undertaken by the management of companies on behalf of shareholders: it excludes saving out of dividends. And public sector saving is that which is undertaken on behalf of households by government and the managers of public corporations. The remainder, personal saving, is in part undertaken by individuals out of their disposable income, in part by life assurance and pension funds on behalf of their beneficiaries, and in part by charities and other non-profit-making bodies.

14 As ordinarily measured in the UK national accounts [Central Statistical Office (1978a) Table 13.1] sectoral saving is before adjustment for stock appreciation or capital consumption, and is therefore both a nominal and a gross concept. Appropriate adjustments are required to bring sectoral saving into line with the net 'current cost' concept of Table A - viz. deduction of sectoral stock appreciation and capital consumption at replacement cost.[1][2] But since corresponding deductions have also to be made to convert capital expenditure to a net current cost basis, the existing estimates of sectoral financial balances[3] are unaffected, and are therefore consistent with current cost saving estimates (see Table B opposite). It can be seen from line 4 of Table B that the great bulk of saving measured at current cost in 1977 was by the personal sector either directly or through life assurance and pension funds. Companies were modest savers by comparison, while the combined public sector was a moderate dis-saver.

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[1] Stock appreciation and capital consumption as defined in the national accounts and shown in Table A are those arising on assets within the United Kingdom, even though some of them are ultimately owned overseas. Net property income from abroad is measured gross of stock appreciation but after providing for depreciation at book values. Accordingly, the inflation adjustments in Table B are those applying to saving by UK residents; they do not, for example, include parallel adjustments to saving done overseas on behalf of ownership interests in the United Kingdom.

[2] The United Nations' System of National Accounts (SNA) does define sectoral saving net of capital consumption and stock appreciation, and recommends presentation accordingly.

[3] Defined as saving plus net capital transfers less investment in fixed capital and stocks. Saving and capital expenditure may be measured either both gross, or both net, of provisions for stock appreciation and capital consumption. The sum of all sector balances (plus the residual error) is of course zero.

Table B

Saving and financial balances by domestic sector, 1977[a]

£ billion

		Personal sector	Industrial and commercial companies	Financial companies	Public corporations	General government[b]	Total
1	Saving	13.8	11.9	1.2	3.3	1.0	31.2
2	less: Capital consumption at replacement cost	-3.1	-6.3	-0.5	-4.1	-1.8	-15.8
3	less: Stock appreciation	-0.9	-4.0	-	-0.4	-0.1	-5.3
4	Saving after providing for stock appreciation and capital consumption	9.9	1.5	0.8	-1.2	-0.8	10.1
5	plus: Net capital transfers	0.1	0.3	-0.2	0.5	-0.6	-
6	Residual error	-	-	-	-	-	1.1
7	Total receipts (4+5+6)	9.9	1.8	0.6	-0.7	-1.5	11.2[c]
8	less: Net domestic fixed capital formation (increase -)	-0.9	-3.2	-2.0	-0.6	-3.0	-9.6
9	less: Value of physical increase in stocks (increase -)	-0.3	-1.0	-	0.1	-0.1	-1.3
10	Net acquisition of financial assets (7-8-9)	8.7	-2.4	-1.3	-1.3	-4.6	0.3[c][d]

Source: Central Statistical Office (1978a) Table 1.8: Alternative Presentation.

[a] Figures later in the paper incorporate subsequent revisions to these numbers.
[b] Central government plus local authorites.
[c] Identified sector balances fail to sum to this total because of the unallocated residual error.
[d] Equals net investment abroad, defined as the balance of payments on current account.

Adjustment for inflation gains and losses on debt

15 The adjustments in Tables A and B are only a very partial approach to inflation adjustment. In particular, it is important to recall that the national accounts estimates of disposable income include net interest. When prices are rising, interest payments tend to rise to compensate (although very imperfectly) for the effect of inflation on the real value of the debt. Thus, in inflationary circumstances, interest payments typically comprise two elements - compensation for inflation, to maintain the real value of the investor's capital (and perhaps to repay part of the real value of the asset in question); and a true interest payment, which is frequently negative.[1] During periods of accelerating inflation, and rising inflationary expectations, this element of negative true interest, tantamount to early repayment of the real value of the debt, increases markedly. It seems logical to regard this latter element, if unmatched by a change in consumption, as 'real' saving by the debtor and dis-saving by the creditor. This concealed saving by debtors is the counterpart of the capital gains that accrue to them when inflation erodes the real value of a debt fixed in nominal terms. But saving estimates of the kind given in Tables A and B, and the income measures which underly them, only allow for the interest flows as recorded, and may be regarded as allocating saving (and income) inappropriately between sectors and between countries.

16 A further adjustment to estimate the real saving implicit in the early repayment of debt, and to reallocate this from creditor to debtor sectors, is thus helpful. (Unlike the adjustments discussed in the previous section, this adjustment carries through from sectoral saving to the sectoral financial balances.) For consistency, real saving is struck after net capital transfers.[2] Corresponding adjustments may also be devised to show the allocation of inflation gains and losses between the United Kingdom and overseas.

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[1] For example, an asset of fixed money value depreciates in real value by x% pa if the rate of inflation is x% pa. If interest is paid annually at y% (after tax) on the asset, the true rate of interest is (y-x)%, for the owner needs x% to maintain the real value of his capital intact.

[2] The sectoral financial balances are already adjusted for net capital transfers.

17 The method used here to calculate the inflation adjustment for a given sector is to apply the actual rate of inflation, as given, for example, by the implied deflator for consumers' expenditure,[1] to the net nominal stock of debt (or net monetary assets/liabilities) for each sector.[2][3] Stocks of assets/liabilities were valued at nominal (i.e. redemption) values, rather than market values, throughout. In the case of capital-certain assets (the bulk of those included), redemption values and market values are of course always identical; but the market values of securities such as British government stocks are generally different from their redemption values, so that the choice of valuation method does affect the results somewhat. Redemption values were chosen for ease of computation, and in order to abstract from the effects of changes in the real rate of interest.[4] The approach is believed to give an acceptable accruals estimate of the amount of 'real' capital repaid during the period. The residual between the inflation adjustment and actual interest payments (positive or negative) represents the true or 'real' interest payment, viewed in a backward-looking sense.[5] The results of such a calculation for each of the main domestic sectors of the economy in three recent periods are summarised in Table C. Fuller details for the period 1967-78 and a description of the data and method of inflation adjustment, are set out in Appendix 1. It should be particularly borne in mind that the provisional balance sheet data on which the calculations are based are far from perfect and that the method of adjustment is relatively crude.

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[1] The choice of deflator is discussed in Appendix 1, paragraphs 53-54.

[2] Monetary assets/liabilities are defined as all claims with redemption values or prices fixed in money terms, including those denominated in foreign currencies. They exclude, for example, equities and all tangible assets - and all assets whose prices or redemption values move with general inflation. See Appendix 1 for further explanations.

[3] The inflation gain/loss is here calculated by multiplying an estimate of the mid-year value of the (nominal) stock of (identified) net monetary liabilities by the change in the implied deflator through the year. Although an approximation, this is thought to give an estimate of gains/loss on identified assets/liabilities which is accurate enough for present purposes.

[4] See Appendix 1, paragraphs 44-51, for further explanations.

[5] A forward-looking version would require a measure of inflationary expectations, much more difficult to identify.

Table C

'Real' saving and financial balances of UK domestic sectors 1967-78[a]

Annual averages: £ billion

	1967-70	1971-74	1975-78[b]
A Personal sector			
1 Saving[c]	1.4	3.5	9.7
2 less: Notional loss on real value of net monetary assets	-1.9	-5.5	-9.4
3 Real saving	-0.5	-2.0	+0.3
Real saving as per cent of real personal disposable income[d]	-1.8%	-4.9%	+0.4%
4 Net acquisition of financial assets	0.9	2.5	8.2
5 less: Notional loss on real value of net monetary assets	-1.9	-5.5	-9.4
6 Real net acquisition of financial assets	-1.0	-3.0	-1.2
Real net acquisitions as per cent of real personal disposable income[d]	-3.6%	-7.3%	-1.5%
B Company sector			
1 Saving[c]	1.8	2.2	2.6
2 plus: Notional gain on real value of net monetary liabilities	0.2	0.5	0.6
3 Real saving	2.0	2.7	3.2
4 Net acquisition of financial assets	-0.4	-1.5	-2.4
5 plus: Notional gain on real value of net monetary liabilities	0.2	0.5	0.6
6 Real net acquisition of financial assets	-0.1	-1.0	-1.8

[a] See Appendix 2 for fuller details, and for sources used. Figures may not add because of rounding errors.

[b] 1977 and 1978 provisional and/or Bank estimates.

[c] After providing for stock appreciation and capital consumption at replacement cost, and plus net capital transfers.

[d] Income after providing for stock appreciation and capital consumption at replacement cost, plus net capital transfers and after adding/subtracting the gain/loss on real value of net mnetary liabilities/assets; but nevertheless expressed at current prices (i.e. not deflated by a price index).

Table C (continued)

'Real' saving and financial balances of UK domestic sectors 1967-78[a]

Annual averages: £ billion

	1967-70	1971-74	1975-78[b]
C Public corporations			
1 Saving[c]	-0.1	-0.6	-0.8
2 plus: Notional gain on real value of net monetary liabilities	0.5	1.6	2.8
3 Real saving	0.4	1.0	2.0
4 Net acquisition of financial assets	-0.7	-1.1	-1.8
5 plus: Notional gain on real value of net monetary liabilities	0.5	1.6	2.8
6 Real net acquisition of financial assets	-0.2	0.5	1.0
D General government			
1 Saving[c]	2.2	1.2	-2.1
2 plus: Notional gain on real value of net monetary liabilities	1.4	3.5	6.5
3 Real saving	3.6	4.7	4.4
4 Net acquisition of financial assets	0.5	-1.3	-5.4
5 plus: Notional gain on real value of net monetary liabilities	1.4	3.5	6.5
6 Real net acquisition of financial assets	1.9	2.1	1.1

[a] See Appendix 2 for fuller details, and for sources used. Figures may not add because of rounding errors.

[b] 1977 and 1978 provisional and/or Bank estimates.

[c] After providing for stock appreciation and capital consumption at replacement cost, and plus net capital transfers.

Table C (concluded)

'Real' saving and financial balances of UK domestic sectors 1967-78[a]

Annual averages: £ billion

	1967-70	1971-74	1975-78[b]
E Total domestic sectors			
1 Saving[c]	5.3	6.2	9.4
2 plus: Notional gain on real value of net monetary liabilities	0.3	0.1	0.5
3 Real saving	5.5	6.3	9.9
Real saving as per cent of real national income at current market prices[d]	13.1%	10.0%	8.4%
4 Net acquisition of financial assets[e]	0.2	-1.4	-1.5
5 plus: Notional gain on real value of net monetary liabilities	0.3	0.1	0.5
6 Real net acquisition of financial assets	0.5	-1.3	-1.0

[a] See Appendix 2 for fuller details, and for sources used. Figures may not add because of rounding errors.

[b] 1977 and 1978 provisional and/or Bank estimates.

[c] After providing for stock appreciation and capital consumption at replacement cost, and plus net capital transfers.

[d] Income after providing for stock appreciation and capital consumption at replacement cost, plus net capital transfers and after adding/subtracting the gain/loss on real value of net monetary liabilities/assets; but nevertheless expressed at current prices (i.e. not deflated by a price index).

[e] The sum of net acquisitions by individual sectors includes the residual error between national income and expenditure.

18 As pointed out earlier, the adjusted measures of saving and net acquisitions (Table C, lines 3 and 6), and the income measures that underly them, are real in the sense that they make allowances for the effect of general price inflation on the savers' net monetary holdings as well as for the cost of maintaining tangible assets intact. They nevertheless remain in current price terms in the table, although they could be readily expressed at constant prices by dividing by an appropriate price index.

19 Total 'real' domestic saving, shown in section E of Table C, differs from national saving in Table A in that it includes an estimate of the gain to the United Kingdom from the erosion in the real value of its net external monetary liabilities due to general inflation experienced by UK residents. These net external liabilities are measured as the outstanding balance of liabilities over assets identified by the domestic sectors in combination, including assets/liabilities denominated in foreign currencies as well as those in sterling.[1] (Without an overseas sector, and ignoring errors and omissions, total monetary assets would equal liabilities.) A similar allowance is naturally also made in the calculation of the 'real' national income, and is carried through to the United Kingdom's 'real' financial surplus/deficit with the rest of the world.

20 An alternative measure of the nation's capital gain from general inflation can be obtained directly by calculating the inflation loss suffered by the rest of the world on its identified holdings of UK net monetary assets.[2] And by deducting this loss from the ordinary national accounting measure of net acquisitions of UK financial assets by overseas, an alternative measure of the United Kingdom's 'real' financial balance (with sign reversed) can be derived - as shown in Table D on the following page.

21 The inflation adjustment for net external monetary liabilities is calculated using the same principles as those adopted for other sectors - i.e. the change in the consumers' expenditure deflator (CED) is applied to the mid-year stock of net liabilities at nominal values. The CED is held to be the appropriate price index because the gain/loss in terms of real external debt repayment is deemed to be measured in terms of purchasing power over general consumer goods and services by UK residents. However, in the case of assets and liabilities denominated in foreign currencies, a modification is needed to cope with exchange rate changes. In effect, inflation gains/losses on such items are measured in this exercise net of those attributable to changes in the exchange rate. The calculation assumes that exchange rates move so as broadly to reflect differences between the rates of

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[1] The treatment of foreign currency assets/liabilities is discussed below and in Appendix 1 (paragraphs 55-57)

[2] The calculation is of course net of UK losses on its holdings of net overseas monetary assets. Again, assets/liabilities denominated in foreign currencies are included, as well as those in sterling.

Table D

Overseas sector financial balance 1968-78

Annual averages: £ billion

	1968-70	1971-74	1975-78
1 Net acquisition of financial assets [a]	-0.3	0.9	0.6
2 less: Notional loss on net monetary assets	-0.2	-0.5	-0.7
3 'Real' net acquisition of financial assets (calculated estimate)	-0.5	0.5	-0.1
4 'Real' net acquisition of financial assets (by residual) [b]	-0.6	0.8	0.1

[a] Equals, apart from change in sign, net investment abroad.

[b] From Table P (Appendix 2). Equals 'real' net acquisition of financial assets of total domestic sectors with sign reversed, except that the residual error between national income and expenditure is here excluded.

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inflation in this country and abroad. This seems a reasonable approximation for the longer run. The need to eliminate the element of gains/losses due to exchange rate changes is a recognition of the fact that items denominated in foreign currencies lose the essential characteristics of monetary claims to the extent that movements in sterling compensate for movements in UK consumer prices.[1]

22 The differences between the calculated and the implicit measures of the 'real' external financial balance in Table D are a reflection of the errors thrown up by the relatively crude adjustment procedure used. Another important kind of error arises from the existence of a substantial unidentified residual between the income and expenditure, and the financial, accounts in some sectors. This is a general problem for all sectors, including the overseas sector, where the unidentified flows represented by the balancing item in the balance of payments suggest the existence of a sizable unidentified stock of monetary assets/liabilities. The counterpart of this error is probably to be found largely in the company sector, so that the estimates for the inflation adjustment there and for the overseas sector are subject to

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[1] For further explanation, see Appendix 1, paragraphs 54-57.

a relatively large margin of error which may possibly amount to up to £1/2 billion in 1977. The existence of inaccuracies on this scale must be borne in mind in interpreting the figures.[1]

23 Subject to these qualifications, the pattern of 'real' saving and financial balances in the main economic sectors of the domestic economy, in relation to 'real' national income, emerges in Table E. For comparison, the corresponding pattern of nominal saving and financial balances is also shown, nominal saving being measured before providing for stock appreciation and capital consumption.

24 It can be readily seen that the inclusion of inflation gains/losses on debt transforms the customary pattern of sectoral saving and financial balances. In particular, the personal sector, far from appearing as an increasingly massive saver in recent years as portrayed in the published accounts, appears in these adjusted accounts as a persistent net dis-saver in real terms until about 1977, particularly during the years when accelerating inflation rapidly eroded the capital values of monetary and fixed-interest assets. This emerges even more pointedly from the path of the annual figures.[2] Although the estimates for individual years should be treated with caution, because of problems relating to the timing of capital losses on government stocks,[3] the divergence between nominal and real measures of saving must have been exceedingly large in 1974-76. Reflecting in large part the debtor's counterpart to what has happened in the personal sector, the general government sector appears after these adjustments as a persistent and substantial, but recently declining, net saver, and as a persistent (but declining) net creditor on total financial account.[4] Public corporations have also been

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[1] See Appendix 1, paragraphs 40-43.

[2] See Table K in Appendix 2.

[3] See Appendix 1, paragraphs 44-49.

[4] It might be argued that in one respect these adjusted figures for general government, as well as the usual national accounting ones, overstate the real saving undertaken by government on behalf of taxpayers, and understate personal saving. In principle, public consumption should probably be measured inclusive of the full costs of employees' accruing (but unfunded) state pension rights, and the increasing liability for these unfunded pensions should be deducted from the public sector's net worth. By the same token, personal income and saving would be written up to include the accrual of state pension rights. No such adjustment has been made in this exercise.

net savers in real terms (and increasingly so), so that the public sector as a whole has been a large and persistent net saver on this reckoning.[1] This is hardly surprising in view of the fact that the great bulk of public sector debt is held in the form of fixed-interest securities with fixed redemption values, whereas the personal sector is a very substantial holder of net monetary assets.[2] This being so, an accounting procedure that attempts to correct for the effects of inflation on stocks of monetary assets/liabilities must show real income, savings and capital accumulation in the personal sector as suffering from inflation, and the converse in the public sector. Companies as a whole have also been net gainers in these terms, for industrial and commercial companies tend to have sizable net monetary liabilities.[3] The same is not true of financial institutions, which have become increasing net holders of monetary assets in recent years (with non-bank financial intermediaries switching heavily into government stocks and liquid assets); but their losses have been outweighed by gains to industrial and commercial companies.

25 It can also be seen from the final two lines of Table E that the United Kingdom as a whole has persistently benefited from the effects of inflation on its net external monetary liabilities, although on a very modest scale when related to national income. These gains have nevertheless been just about sufficient (as demonstrated in Table D) to mean that the United Kingdom has not continued to increase its net 'real' international indebtedness in the period since 1974, despite still large current account deficits in 1975 and 1976.

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[1] The usefulness of distinguishing in these adjusted estimates between public corporations and the rest of the public sector is perhaps questionable. To the extent that the measured real capital gains of public corporations arise on monetary liabilities to general government, they imply equal losses to the latter. In that saving by both public corporations and general government is ultimately on behalf of the same group, i.e. taxpayers (who ultimately own both the equity and debt of public corporations), wealth transfers between debt and equity interests might be thought to be of little significance, and therefore best ignored. Nevertheless, insofar as public corporations are business entities which operate in some accordance with commercial principles, estimates of comprehensive income might help to explain their investment - and conceivably even pricing-behaviour - especially if they included gains on tangible assets. Somewhat similar arguments apply, although less forcefully, to the distinction between 'real' savings by the company and the personal sectors.

[2] See Table J in Appendix 2.

[3] However, the outstanding feature for industrial and commercial companies is the CCA adjustments made to reflect the costs of maintaining fixed capital and stocks, which account for more than the substantial difference between their nominal and real saving.

Table E

Summary of nominal [a] and 'real' [b] saving and financial balances by sector 1967-78

Annual averages: £ billion

	1967-70	1971-74	1975-78[c]
National income at market prices	41.9	63.1	118.1
'Real' national income[d]	42.2	63.2	118.6
Percentage of national income at market prices[e]			
A Personal sector			
Saving: nominal	6.2	8.9	11.2
'real'	-1.2	-3.2	0.3
Financial balance: nominal	2.1	4.0	6.9
'real'	-2.4	-4.7	-1.0
B Company sector			
Saving: nominal	8.3	10.7	10.8
'real'	4.7	4.3	2.7
Financial balance: nominal	-1.0	-2.4	-2.0
'real'	-0.2	-1.6	-1.5
C Public corporations			
Saving: nominal	1.9	1.8	2.4
'real'	0.9	1.6	1.7
Financial balance: nominal	-1.7	-1.7	-1.5
'real'	-0.5	0.8	0.8
D General government			
Saving: nominal	6.8	3.4	0.2
'real'	8.5	7.4	3.7
Financial balance: nominal	1.2	-2.1	-4.6
'real'	4.5	3.3	0.9
E Total domestic sectors			
Saving: nominal	23.2	24.8	24.6
'real'	13.0	10.0	8.3
Financial balance: nominal	0.5	-2.2	-1.3
'real'	1.2	-2.1	-0.8

[a] Nominal saving here is saving before providing for stock appreciation and capital consumption and additions to reserves. Net capital transfers are excluded. Nominal financial balances are from Table C, line 4.

[b] 'Real' saving and 'real' financial balances are from Table C, lines 3 and 6 respectively.

[c] 1977 and 1978 provisional and/or Bank estimates.

[d] National income at market prices plus the notional gain on net external monetary liabilities from line 2 in Table C, section C.

[e] 'Real' saving and financial balances are percentages of 'real' national income.

Meaning and limitations of the adjusted figures

26 As stated earlier, the inflation adjustments relating to net monetary assets/liabilities represent an attempt to allow for capital gains/losses arising from general inflation. It is readily admitted that they are only one of several kinds of adjustments that might be made in a full accounting for inflation. Among others that would perhaps be desirable to obtain an estimate of comprehensive income would be some allowance for changes in relative prices of different kinds of assets, tangible as well as financial; and allowance for changes in asset prices which are attributable to changes in the real rate of interest.

27 If adjustments are to be made to reflect the effects of changing relative asset prices, beyond those incorporated through the CCA adjustments included above, non-monetary assets have to be brought fully into the picture. Their omission, due chiefly to the size and difficulty of the measurement task,[1] is admittedly an appreciable drawback in seeking estimates of comprehensive income and saving, but it is nevertheless held that the present estimates, although incomplete, represent a worthwhile extension of the usual national accounting figures for the purpose of analysing savings behaviour. One partially exonerating consideration is that the prices of some, but not all, kinds of non-monetary assets tend to move broadly with general inflation in the long run, although they may clearly fluctuate extremely sharply over a run of a few years. Thus equities have been traditionally thought of as providing a hedge against inflation, although they have become less so through the last ten to fifteen years, because of the declining rate of profit on trading assets over this period.[2] In contrast, land prices have on the whole substantially outpaced inflation, doubtless in reflection of underlying scarcity, intensified by planning regulations, etc. However, most importantly for ordinary consumers, house prices, despite violent swings in recent years, tend broadly

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[1] It should, however, be possible, and worth the effort, to include non-monetary items at a later date, perhaps when the national and sectoral balance sheet exercise being co-ordinated by the CSO nears completion. Indeed, at least one preliminary but apparently comprehensive exercise to account for all of the major categories of real capital gains and losses accruing in the United States since the war has been successfully completed, and the results are of considerable interest (see Eisner, 1976).

[2] See Bank of England (1979).

to move in line with average earnings in the long run, and, therefore, to rise relatively gradually in real terms. Real capital gains associated with non-monetary items may, therefore, on the whole be less important in the longer run, although substantial for short periods, whereas those on monetary liabilities are cumulative and, for existing assets, irreversible - given that there is unlikely to be a sustained fall in average consumer prices.

28 A second consideration, particularly relevant if estimates of comprehensive income are introduced as explanations of the spending behaviour of economic agents, is that the degree of uncertainty about the size of real gains/losses on non-monetary items is likely to be far greater than that attaching to monetary items, and omission of the non-monetary category may be less serious for that reason. It is hard to escape the effect of inflation in eroding cash balances or fixed-money debts like bank loans or mortgages. But the real capital gains arising from ownership of a factory or a house are probably much less definite, in part because they are relatively seldom realised. Moreover, inflation gains and losses on monetary items are likely to have fairly immediate effects on expenditure because they impinge much more directly on liquidity than do those associated with non-monetary items.

29 Market values of financial assets which carry a rate of interest fixed in money terms inevitably fluctuate inversely with the prevailing level of interest rates. The inclusion of such assets in this exercise on the basis of their redemption values produces results which are approximately the same, averaged over a run of several years, as those that would arise from the use of market valuations and accruing nominal capital gains and losses, assuming that the real rate of interest remains constant.[1] In so far as interest rates move to reflect changes in current inflation (or expected inflation, if that is more relevant to savers' assessments of real capital gains/losses), the present results are an adequate representation of these gains/losses if averaged over several years. This is in keeping with the limited objective here, which is to adjust for the effects of general inflation only. However, it is readily admitted that real interest rates have not been constant, and have tended to fall when inflation has accelerated. A fuller exercise could attempt to account as well for real capital gains and losses

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[1] See paragraphs 44-50 of Appendix 1.

associated with changes in the real rate of interest. Because nominal interest rates have usually lagged behind changes in the rate of inflation, these latter effects would almost certainly reduce somewhat the respective gains and losses shown above.

30 The omission of capital gains/losses due to real interest rate changes, and to relative asset prices, may indeed be defended on the ground that the resulting estimates thereby bear a greater resemblance with Hicks' preferred definition of comprehensive income involving expectations of recurrent income. Thus, for example, an increase in the relative price of houses, an important component of wealth in the personal sector, may have little effect on consumption because the expected stream of real benefits from house ownership is quite likely to be unaffected by such a relative price change. Similar arguments may apply in the case of assets whose prices reflect real interest rate changes.[1]

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[1] A change in the real interest rate has an immediate inverse effect on the price of a marketable asset with fixed redemption value, but the stream of coupon interest is unaffected. Such a change therefore affects the timing of amounts that can be consumed in present and future periods but leaves their total virtually unchanged. Thus comprehensive income in Hicks' preferred sense is not much affected where these types of assets are concerned.

Implications of the adjusted figures

31 The results here are nevertheless of interest in themselves, and represent a distinct, if rough, improvement on the unadjusted figures for the purpose of analysing savings behaviour. The rationale for the various adjustments is that the real capital gains and losses arising from inflation represent genuine additions or losses to income and (unless offset by current spending) to saving and capital accumulation. But it must be emphasised that these 'real' capital gains/losses in themselves contain little guide to consequential behaviour. There is, for example, no evidence that recipients in the private economy respond to such capital gains in broadly the same way that they respond to increments in other components of income - much less that the whole of such gains will be saved.[1] Such questions must be matters for further reasoning and research.[2]

32 Some preliminary points do, however, suggest themselves. The economic behaviour of households and enterprises is likely to be determined at least as much, and in the longer run probably more, by real factors than by nominal ones - although the extent to which real factors matter depends in part on how clearly they are perceived. While illusions about real magnitudes may well be pervasive in normal times, they are less likely to be so in a period when inflation is itself as painfully conspicuous as it has been in the last few years. For example, most home-owners with mortgages will nowadays be aware of the real capital gains that accrue to them from the erosion of their mortgage debt by inflation, and their behaviour is likely to take them into account. And there is now fairly wide agreement that ordinary households have

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[1] 'Real' saving in the preceding tables is adjusted by the full extent of the calculated net gains/losses because saving is defined as the difference between income and consumption, and 'real' consumption is deemed to have been as identified in the national accounts.

[2] Empirical work in the Bank and elsewhere suggests that individuals do react differently to labour income, and to transfers like dividends or pensions, from how they react to 'real' gains/losses on their monetary holdings (see Townend, 1976). And there are suggestions, particularly in the American literature, that individuals take account of changes in the real indebtedness of the public sector in assessing their own future liabilities as tax payers (see Barro, 1974). On similar reasoning, individuals who are shareholders may react to real capital gains accruing to the equity interest in companies, insofar as they perceive them.

become acutely conscious of the loss in real value of their liquid savings in the last few years, and have attempted to restore it by further saving. If so, inflation-adjusted measures of income, saving and financial acquisitions should attract as much attention, and be given as careful consideration in explanations of spending behaviour, as are nominal (and orthodox real) measures.

33 Somewhat similar reasoning may be applied in assessing the significance of the counterpart measures in the public sector. If account is taken of inflation gains arising from the erosion in the real value of debt, general government appears to have been a net lender, in the sense that its saving was consistently in excess of the amount needed to finance investment in physical assets, in the period before 1974, and in near balance on average between 1975 and 1977, rather than a heavy borrower as ordinarily thought. However, in 1978, general government became a substantial net borrower in real terms. Nominal and inflation-adjusted measures of the general government borrowing requirement (CGBR) are shown in Table F. For reasons referred to earlier, too much significance should not be read into year-by-year swings in inflation gains/losses.

Table F

General government borrowing requirement (GGBR), 1967-78

£ billion

	Average 1967-70	Average 1971-74	1975	1976	1977	1978
Nominal GGBR	0.7	3.2	10.0	7.9	4.7	9.0
Percentage of national income at market prices	1.6%	5.0%	10.7%	7.1%	3.7%	6.3%
less: Notional gain on real value of debt	-1.4	-3.5	-9.0	-6.2	-6.2	-4.6
'Real' GGBR	-0.7	-0.3	1.0	1.7	-1.5	4.4
Percentage of 'real' national income at market prices	-1.7%	-0.5%	1.0%	1.5%	-1.2%	3.1%

These measures of the 'real' GGBR merely indicate broad orders of magnitude, for the estimation of inflation gains here as for other sectors is admittedly crude. But refinements to the method would probably not change the general result very much. And a more comprehensive approach that also included capital gains on tangible assets would almost certainly show general government in sizable 'real' financial surplus for most of the period.

34 The adjusted estimates do not in themselves contain policy implications - but they may make it easier to understand what the implications are. At the very least, they suggest that the customary measures of the Government budget deficit and the borrowing requirement may be misleading for some purposes.

35 The Government's budget balance, or more commonly changes therein, is often taken to be a useful, if crude, indicator of the thrust of fiscal policy, as indeed is the PSBR (with slightly less justification). There are a number of pitfalls in this procedure, but it would nevertheless be widely accepted that, at given levels of national output and employment, the larger is the nominal PSBR as a percentage of national income, the greater will be the expansionary thrust of fiscal policy. But to the extent that inflation is eroding the real value of the assets which are the counterpart of the national debt, and this induces additional nominal saving at a given level of income in an attempt to restore real stocks of assets to desired levels, a higher PSBR will probably be necessary if income is to be maintained at that level. In these circumstances a higher PSBR indicates, not that the Government action is leading to a higher pressure of demand than when inflation is lower, but simply that the deflationary impact of the enhanced propensity to save induced by higher inflation is being offset. Thus, it can be argued that a measure of the borrowing requirement which is adjusted to exclude the element of capital repayment should give a more useful indication of the thrust of fiscal policy than one which is not so adjusted.[1][2] This is not to deny that an inflation-adjusted measure may be as deficient as the conventional measure in other respects. But it does suggest that fiscal policy may have been substantially less 'expansionary' in the years of high inflation than nominal magnitudes of the PSBR might indicate. Such a conclusion does not necessarily imply that fiscal policy should have been different. Whether the budget balance is recorded in adjusted or unadjusted form, the effects on the economy are of course identical. And it is in terms

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[1] There is therefore a certain affinity between the inflation-adjusted budget balance, discussed here, and the familiar 'standardised' or 'constant employment' budget balance advocated by some economists. The former attempts to correct for variations in inflation; the latter for variations in activity.

[2] Since this passage was written, our attention has been drawn to an argument along similar lines by an American economist, J.J.Siegel (1979), page 83.

of these effects, seen in the light of an analysis of the whole economy, that policy must be judged.

36 The borrowing requirement is also commonly treated as a rough indicator of the weight of the Government's demand for finance on the rest of the economy. But the monetary implications of such borrowing must depend, inter alia, on the extent of the private sector's demand for government securities. This must depend in turn on, among other things, the real value of existing private holdings of securities and other assets, and on (real) income and interest rates, as well as on expectations of general inflation. Ignoring, for the moment, the crucial question of effects of government borrowing on 'confidence' and on inflationary expectations, it is important to note that, in so far as high inflation leads to high private saving in nominal terms (but not in real terms, for the reasons discussed), it probably also leads to an increase in the demand for government securities at given real rates of interest. In so far as this demand does increase, an enlarged nominal PSBR can be financed without raising money supply. The difficulty of financing an enlarged PSBR in these circumstances may therefore not be increased, or may be increased less than supposed if these considerations were not taken account of. In that the 'real' borrowing requirement calculated above allows, albeit crudely, for the erosion by inflation of the real stock of assets which are the counterpart of government lending, it presents a better measure than the nominal PSBR of the real flow supply of government debt. If the balance between the supply and demand for government debt, given prevailing rates of inflation, interest and activity, is a key consideration in assessing the acceptability or otherwise of a given fiscal policy, it can be argued that the inflation-adjusted measure of the borrowing requirement is a more useful indicator of the financial burden than the nominal measure[1] - although still of course a highly imperfect guide, as any single number must be.

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[1] Siegel (1979) pursues a similar argument: 'Real value accrual accounting may be particularly important in measuring the impact of government deficits. If equilibrium returns on government debt result from the interaction of real supply and demand for such assets, then general price inflation, by lowering the real value of government debt, has much the same impact on supply as a government surplus would under stable prices.' (Page 84)

37 The association between apparently high nominal borrowing requirements and high inflation no doubt contributes to a widespread belief that high government borrowing usually leads to high inflation, regardless of the existence or not of a genuine causal connection from the former to the latter. Yet when published monetary targets and cash limits are in operation, and effectively pursued, there would appear less ground for the belief that the PSBR has a significant independent influence on inflation, other than via its effects on the pressure of demand in the 'real' economy. The belief that changes in money supply are an influence on inflation does not entail the existence of a close link between the PSBR and money supply; indeed the link between the PSBR and money supply may be relatively tenuous, at least in the short to medium term, as a recent Treasury paper has suggested.[1] A strong residual belief may however be that a high nominal borrowing requirement signifies that the Government is spending beyond its means, and must therefore be inflationary in due course.

38 Whether such expectations are well-founded or not, if savers and investors act on them, they are likely to become self-fulfilling. This indeed may have happened to a degree in recent years, in other countries as well as in the United Kingdom. If there were greater general awareness of the Government's real financial position, as indicated by inflation adjustments of the kind discussed above, the efficiency with which public borrowing is financed might be facilitated and the long run cost to the taxpayer possibly reduced.

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[1] Middleton et al (1979).

Appendix 1

Notes on methodology for calculating the inflation adjustment for 'real' gains and losses on net monetary liabilities

39 There are a number of important problems in calculating the adjustments to be made to reflect sectoral 'real' gains or losses on net monetary liabilities, namely:

(i) in the derivation of consistent estimates of net monetary liabilities for each sector it has to be determined exactly what should count as a monetary liability or asset; errors and omissions will arise owing to the absence of complete balance sheet statistics for each sector;

(ii) on the appropriate valuation of net monetary liabilities; there is some question whether market values or nominal values of marketable debt should be used; and

(iii) on the choice of price index to be used to calculate the 'real' gains or losses, particularly in the case of monetary assets/liabilities denominated in foreign currency.

Definition of net monetary liabilities: errors and omissions

40 The detailed allocation of assets and liabilities between monetary and non-monetary items is indicated in the footnotes attached to the tables in Appendix 2, but the broad principles are as follows:

(i) monetary items are defined as assets or liabilities, the amounts of which are fixed by contract or statute in terms of units of currency regardless of changes in the general price level (see paragraph 42); and

(ii) non-monetary items, the remainder, include for example the net equity interest in companies (see paragraph 41), and all tangible assets - such as physical capital and inventories - and all assets whose prices or redemption values move with general inflation (e.g. index-linked SAYE and index-linked savings bonds).

41 The net equity interest in companies is the equity share capital plus reserves (in the case of mutual societies, reserves alone). Equity share capital is the issued share capital, excluding any part thereof which does not carry any right to participate in a distribution, in respect either to dividends or capital, beyond a specified amount.[1]

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[1] Convertible loan stocks are treated as monetary liabilities until their conversion. See Accounting Standards Committee (1977).

42 The major monetary assets/liabilities for a company (financial or industrial and commercial - which have corresponding liabilities/ assets in other sectors) are set out in Table G.

Table G

Company A

Monetary assets	Monetary liabilities
Cash and bank deposits	Bank advances
Other liquid assets:	Debentures, and other loans
tax instruments	Convertible loan stock
local authority temporary debt	Preference share capital (where only interest is paid)
deposits with other financial institutions	
Trade credit extended	Trade credit received
Other loans to person, other companies, and other sectors	Any deposits from persons, other companies, and other sectors

43 Unfortunately, only incomplete balance sheet data are available for companies, public corporations, and the overseas sector, and it has not been possible to ensure that the figures for net monetary liabilities used for each sector are fully consistent with those for the other sectors. For example, figures of the stock of net trade credit extended by companies do not exist, although the overseas and personal sectors balance sheets do identify some net trade credit. In general, the figures for net trade credit outstanding are very incomplete. The balance sheet data for financial institutions are fairly good, but those for the overseas sector are, in places, particularly weak.[1] Net errors and omissions arising from the use of inconsistent balance sheet data are shown in Table J in Appendix 2.

Appropriate valuation of net monetary liabilities

44 For most monetary assets and liabilities nominal values and market values are identical at all times (e.g. most liquid assets such as deposits with financial institutions, and bank advances), but market values of securities such as debentures and marketable public sector debt need only coincide with nominal values at the time of redemption; and perpetuities such as 2 1/2% Consols or

[1] See Central Statistical Office (1978b), pages 70-73.

3 1/2% War Loan, or preference shares, have no redemption date.[1] However, should the debtor choose to redeem the liability the maximum contractual obligation would be to repay the nominal amount. The question arises as to whether the change in general prices should be applied to the market value, or to the nominal value of the asset/liability to compute the inflation gain/loss.

45 Whichever is chosen, it is important that the same valuation is used for a given instrument in both the creditor's and the debtor's balance sheet, for otherwise the sum of the inflation gains/losses across all sectors (including the overseas sector) would not be zero. Typically, liabilities are shown in balance sheets at nominal values, but assets are often shown at market values. The estimates of gains/losses should not depend on whether the creditor's or the debtor's balance sheet values are used as the basis of the calculations.

46 There are two alternative ways of measuring the impact of inflation on the 'real' value of marketable debt, which, in principle, give the same inflation gain/loss over the full term of the debt. But they will allocate these gains and losses very differently over time. In the case of a marketable instrument issued and redeemed at par, the total gearing gain/loss over the whole life of the debt is given by:

$$D_R \cdot \left(\frac{P_R - P_O}{P_O}\right) \qquad (1)$$

where D_R = redemption value of debt

P_R = value of general price index on redemption day

P_O = value of general price index on issue day

The problem is to allocate this cumulative inflation gain/loss[2] over the term of the debt in an appropriate way.

Method A: market value method

47 The effect of inflation on a marketable security such as a gilt is twofold:

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[1] See paragraph 51 below.

[2] In terms of the general price level ruling on redemption day. Alternatively the cumulative gain/loss could be expressed in terms of the general price level prevailing at the time of issue.

(i) the increase in nominal interest rates to compensate for an increase in inflation, results in a fall in the market value of the security; and

(ii) a steady rate of inflation erodes the real purchasing power of the (stable) market value as in the inflation adjustment of (nominal) capital certain monetary liabilities.

The full adjustment for gains and losses on marketable debt arising from inflation should comprise the sum of (i) and (ii).[1]

Method B: nominal value method

48 This is easier to compute than method A because it merely applies the formula in paragraph 46 to successive years over the term of the security. For example, in year t, the inflation gain/loss would be:-

$$D_R \cdot \frac{P_t - P_{t-1}}{P_{t-1}} \qquad (2)$$

which when summed over the term of the security and converted to prices ruling in the year of redemption would equal that given by equation 1.

49 The timing of the inflation gains/losses over the life of the security differs considerably as between the two methods, as shown in Table H.

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[1] The change in the deflated market debt between two dates can be decomposed into two parts: that is

$$\frac{D_1}{P_1} - \frac{D_o}{P_o} = \frac{D_1 - D_o}{P_1} - \frac{D_o}{P_o} \cdot \frac{P_1 - P_o}{P_1} \qquad (3)$$

where the subscripts o refer to the opening date, and 1 to the closing date. The two elements refer to method A(i), and method A(ii) respectively.

Equation 3 might be described as a 'current-weighted' method of decomposition. An alternative base-weighted approach would give slightly different results:

$$\frac{D_1}{P_1} - \frac{D_o}{P_o} = \frac{D_1 - D_o}{P_o} - \frac{D_1}{P_1} \cdot \frac{P_1 - P_o}{P_o} \qquad (4)$$

Table H

A schematic presentation of inflation gains/losses on marketable securities

	Year				
	1	2	3	4	5
Nominal value (issued year 1, redeemed year 5)	100	100	100	100	100
Coupon interest	5	5	5	5	5
(Real interest rate	5%	5%	5%	5%	5%)
Price level (year 1=100)	100	110	121	133.1	146.41
(Rate of inflation	0%	10%	10%	10%	10%)
Nominal redemption yield	5%	15%	15%	15%	15%
Market value of debt	100	77.2	83.7	91.3	100
Inflation loss:					
Method A					
(i) Change in nominal market value[a]	0	22.8	- 6.5	- 7.6	- 8.7
(ii) Real erosion of market value[b]	0	10	7.7	8.4	9.1
Total at current prices	0	32.8	1.2	0.8	0.4
Total at year 5 prices	0	43.7	1.4	0.9	0.4
Method B					
At current prices	0	10	10	10	10
At year 5 prices	0	13.3	12.1	11	10

[a] Due to change in rate of inflation, with the real interest rate constant.

[b] See method A (ii), above.

50 For both methods, the total inflation loss over the whole period, at year 5 prices, is £46.4 given either by applying equation 1 in paragraph 46, or by converting the individual year losses to year 5 prices [i.e. multiplying the loss in year t (price index in year 5 price index in year t)]. It is apparent, however, that the timing of the losses in Table H is very different as between method A, which concentrates the loss in the year in which price inflation accelerated, and method B, which allocates it evenly (in nominal terms) over the period of constantly rising prices.

51 Problems arise with method B in the case of gilts issued below par and in that of perpetuities where market prices are typically below par: there the erosion of the real value of the debt is overstated over the life of the gilt, or a long period in the latter case.

No allowance has been made for this bias; given the relative unimportance of perpetuities and issues significantly below par, it is unlikely to be great.

52 There are difficult practical problems with method A because it is impossible to isolate changes in market values which are due to inflation from those arising from real interest rate movements. For this reason, and for ease of computation, method B has been used throughout.

The relevant price index

53 If consumption is the ultimate objective of all economic activity, it seems appropriate to use the price index of consumption as the numeraire for the calculation of inflation gains/losses. The choice of deflator lay between the retail price index, the consumers' expenditure deflator, and a combined implicit deflator of personal and government consumption. The consumers' expenditure deflator was used despite the inclusion of a number of imputed items which do not reflect money expenditure in its coverage, because it is considerably more comprehensive than the retail price index (RPI). The RPI, although much more familiar to spenders, does not cover all relevant money expenditure[1] and excludes consumption by higher income earners (the top 4% of households) and by pensioners from its weighting pattern. If potential command over a broader category of resource use were felt to be at issue, the implied public and private expenditure deflator could have been used, but it seemed preferable to restrict the numeraire to private consumption.

54 In the case of overseas assets/liabilities, it has to be remembered that the aim of the national accounts, and hence of this exercise, is to estimate income and saving accruing to UK residents. Accordingly, the deflator for income and for inflation gains/assets on overseas assets/liabilities of UK residents is in terms of the purchasing power of those residents. In general, the consumption of UK residents takes place in the UK market. The consumers' expenditure deflator weights exclude expenditure by foreign tourists etc. in the United Kingdom, but include consumers' expenditure abroad and thus the deflator has appropriate coverage

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[1] See Central Statistical Office (1968).

for the calculation of inflation gains and losses on both domestic and overseas assets/liabilities.

55 For monetary assets/liabilities denominated in overseas currencies, it is inappropriate to use the rate of change of the consumers' expenditure deflator to calculate inflation gains/losses on the sterling valuation of the monetary asset/liability. This is because part of the gain or loss due to domestic inflation will have been offset to the extent that the exchange rate has adjusted to reflect differing rates of inflation in the United Kingdom and in the rest of the world. If the rate of inflation in the rest of the world were zero, and the UK exchange rate adjusted to compensate perfectly for differential inflation in the United Kingdom and abroad (i.e. purchasing power parity exchange rates is assumed) the 'monetary' liability/asset would be fully indexed for inflation and, given the definitions in paragraph 40, would cease to be a monetary liability or asset. To the extent that the rest of the world's inflation rate is not zero, there will still be partial inflation gains and losses. These have been calculated by multiplying the sterling value of the asset/liability (nominally fixed in foreign currency) by the rate of domestic price inflation less changes in the exchange rate. In this exercise the adjustment is made on the basis of the percentage change in the effective exchange rate, defined in terms of foreign currency per unit of sterling.[1]

56 Formally, for a UK resident who could use the proceeds of issuing a currency debt to purchase goods in the United Kingdom, the derivation of the notional gain can be shown as follows:

Suppose that bonds with a nominal value of ¢B (B units of currency) are issued in period (t-1). The currency could be converted to sterling to give $\frac{B}{E_{t-1}}$, where E = the effective exchange rate (units = currency/£), and a basket of goods purchased.

In period t, the basket of goods could be sold to give

$$\frac{B}{E_{t-1}} \cdot \frac{PC_t}{PC_{t-1}}$$

---

[1] The weights in the effective exchange rate reflect the relative competitive importance of various countries in UK trade, both bilaterally and in third countries. A more appropriate weighting pattern might reflect the distribution of net external liabilities between different currencies.

where PC = the consumers' expenditure deflator.

The sterling gain on the transaction is:

$$\frac{B}{E_{t-1}} \cdot \frac{PC_t}{PC_{t-1}} - \frac{B}{E_{t-1}} \tag{5}$$

On the other hand, in period t, the currency bonds still have a nominal value of ¢B, now equivalent to $\frac{B}{E_t}$. The sterling gain on the bonds due to the change in rates is thus:

$$\frac{B}{E_{t-1}} - \frac{B}{E_t} \tag{6}$$

and the total gain in sterling is:

$$\frac{B}{E_{t-1}} \cdot \frac{PC_t}{PC_{t-1}} - \frac{B}{E_{t-1}} + \frac{B}{E_{t-1}} - \frac{B}{E_t} \tag{7}$$

$$= \frac{B}{E_{t-1}} \cdot \frac{PC_t}{PC_{t-1}} - \frac{B}{E_t} \tag{8}$$

The notional gain in percentage terms is:

$$\left[\left\{ \frac{B}{E_{t-1}} \cdot \frac{PC_t}{PC_{t-1}} - \frac{B}{E_t} \right\} \Big/ \frac{B}{E_{t-1}} \right] \times 100 \tag{9}$$

$$= \left\{ \frac{PC_t}{PC_{t-1}} - \frac{E_{t-1}}{E_t} \right\} \times 100 \tag{10}$$

57 In the case where foreign goods are purchased with an issue of ¢B bonds in period (t-1), the goods can be sold, in period t for currency, assuming purchasing power parity holds:

$$¢B_t \cdot \frac{PC_t}{PC_{t-1}} \cdot \frac{E_t}{E_{t-1}} \tag{11}$$

or in sterling

$$\frac{B}{E_t} \cdot \frac{PC_t}{PC_{t-1}} \cdot \frac{E_t}{E_{t-1}} \tag{12}$$

The sterling gain (the difference between the above proceeds and the sterling cost of repaying the loan in period t) is:

$$\left\{\frac{B}{E_t} \cdot \frac{PC_t}{PC_{t-1}} \cdot \frac{E_t}{E_{t-1}}\right\} - \frac{B}{E_t} \qquad (13)$$

The notional gain in percentage terms is:

$$\left[\left\{\frac{B}{E_t} \cdot \frac{PC_t}{PC_{t-1}} \cdot \frac{E_t}{E_{t-1}} - \frac{B}{E_t}\right\} \Big/ \frac{B}{E_{t-1}}\right] \times 100$$

$$= \left[\left\{\frac{E_{t-1}}{E_t} \cdot \frac{PC_t}{PC_{t-1}} \cdot \frac{E_t}{E_{t-1}}\right\} - \frac{E_{t-1}}{E_t}\right] \times 100 \qquad (14)$$

$$= \left\{\frac{PC_t}{PC_{t-1}} - \frac{E_{t-1}}{E_t}\right\} \times 100 \qquad (15)$$

This is identical to the formula for the case in which goods are purchased on the UK market. Thus, assuming purchasing power parity holds, the approach used is the same as using the world inflation rate to calculate inflation gains and losses on assets/liabilities denominated in foreign currency.

Appendix 2

Sectoral 'real' saving and financial balances, 1967-78

Table J

Notional loss/gain on real value of net monetary assets/liabilities by sector, 1967-78

£ billion

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977 [a]	1978 [a]
Sectoral net monetary assets(+)/liabilities(-) mid-year estimates:												
Personal sector	34.9	36.0	37.8	39.7	41.3	43.1	47.6	53.4	58.1	64.1	70.5	76.8
Company sector	-3.6	-3.8	-4.3	-4.7	-4.4	-3.5	-4.0	-6.2	-6.0	-4.1	-3.2	-1.3
Public corporations	-9.0	-10.0	-10.0	-11.3	-12.3	-13.0	-13.8	-15.5	-17.9	-21.2	-23.8	-25.6
General government	-26.7	-28.3	-28.8	-28.4	-27.6	-28.4	-29.0	-31.4	-37.4	-46.3	-51.7	-57.1
Total domestic sector	-4.4	-6.1	-5.3	-4.7	-3.0	-1.8	+0.8	+0.2	-3.3	-7.5	-8.2	-7.2
Overseas sector [b]	..	4.4	4.7	4.8	3.6	3.0	4.2	6.3	7.3	10.3	10.9	10.8
Total (errors and omissions)	..	-1.7	-0.6	+0.1	+0.6	+1.2	+5.0	+6.5	+4.0	+2.8	+2.7	+3.6
Change in consumers' expenditure deflator (Q4-Q4) %	2.3	6.3	4.8	7.1	7.9	7.4	9.9	20.1	24.0	13.7	12.4	8.0
Notional loss (on net monetary assets)/gain (on net monetary liabilities) [c]												
Personal sector	-0.8	-2.3	-1.8	-2.8	-3.3	-3.2	-4.7	-10.7	-13.9	-8.7	-8.7	-6.1
Company sector	0.1	0.2	0.2	0.4	0.4	0.2	0.3	1.2	1.4	0.3	0.5	0.1
Public corporations	0.2	0.6	0.5	0.8	1.0	0.9	1.3	3.1	4.0	2.0	3.3	2.0
General government	0.6	1.7	1.4	2.0	2.2	2.3	3.0	6.3	9.0	6.2	6.2	4.6
Total domestic sector	0.1	0.3	0.3	0.4	0.3	0.2	-0.1	-0.1	0.4	-0.2	1.3	0.8
Overseas sector:												
by residual	-0.1	-0.3	-0.3	-0.4	-0.3	-0.2	+0.1	+0.1	-0.4	+0.2	-1.3	-0.6
by calculation	..	-0.1	-0.2	-0.3	-0.3	-0.1	-0.2	-1.2	-1.0	+1.1	-2.1	-0.8

.. not available

[a] Bank estimates for 1978, and a mixture of provisional and Bank estimates for 1977.

[b] Assuming net portfolio investment overseas is a non-monetary item (except for related trade credit).

[c] The notional loss or gain is not exactly equal to the product (sign reversed) of sectoral net monetary assets/liabilities times the change in the consumers' expenditure deflator, because of the different deflator used for assets/liabilities denominated in foreign currencies. As outlined in Appendix 1, the rate of the change of the consumers' expenditure deflator is taken net of the percentage change in the effective exchange rate (expressed in terms of foreign currency per unit of sterling). The resulting series used was:

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Change in deflator %	-5.1	-2.6	5.3	6.8	8.6	-2.1	1.2	19.6	10.8	-8.8	18.2	7.0

Table K

Personal sector: 'real' saving and net acquisition of financial assets, 1967-78

£ billion

		1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977[a]	1978[a]
1	Saving before providing for depreciation, stock appreciation and additions to reserves	2.3	2.3	2.6	3.1	3.4	4.6	6.1	8.5	10.9	12.4	13.3	16.1
2	less: Depreciation at replacement cost	-0.7	-0.8	-0.8	-0.9	-1.0	-1.3	-1.5	-1.8	-2.3	-2.7	-3.1	-3.5
3	Stock appreciation	-	-0.1	-0.1	-0.1	-0.2	-0.2	-0.5	-1.0	-0.8	-1.1	-0.9	-0.9
4	Saving after providing for depreciation and stock appreciation	1.6	1.5	1.7	2.1	2.1	3.2	4.0	6.0	8.0	8.9	9.9	11.8
5	plus: Net capital transfers	-0.2	-0.2	-0.4	-0.4	-0.3	-0.4	-0.3	-0.5	-0.4	-	0.1	0.3
6	Saving after providing for depreciation and stock appreciation, plus net capital transfers	1.4	1.3	1.3	1.7	1.8	2.8	3.7	5.5	7.6	8.9	10.0	12.1
7	Less: Notional loss on real value of net monetary assets [b]	-0.8	-2.3	-1.8	-2.8	-3.3	-3.2	-4.7	-10.7	-13.9	-8.7	-8.7	-6.1
8	'Real' saving (6+7)	0.6	-1.0	-0.5	-1.1	-1.5	-0.4	-1.0	-5.2	-6.3	0.2	1.3	6.0
9	Net acquisition of financial assets	0.9	0.6	0.8	1.3	0.8	1.5	2.8	5.0	6.9	7.9	8.0	9.8
10	'Real' net acquisition of financial assets (9+7)	0.1	-1.7	-1.0	-1.5	-2.5	-1.7	-1.9	-5.7	-7.0	-0.8	-0.7	3.7

[a] Provisional, and Bank estimates.

[b] See Table J.

Table L

German sector: 'real' saving and net acquisition of financial assets, 1967-78

£ billion

		1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978 [a]
1	Saving before providing for depreciation, stock appreciation and additions to reserves:												
	Industrial and commercial companies	2.5	3.1	3.6	3.7	4.4	5.2	7.1	7.5	8.5	11.8	12.6	12.7
	Financial companies	0.2	0.3	0.3	0.3	0.5	0.6	0.9	0.8	0.7	1.4	1.3	2.0
	All companies	2.7	3.4	3.8	4.0	4.8	5.8	8.0	8.3	9.2	13.2	13.9	14.7
2	less: Depreciation at replacement cost (all companies)	-1.3	-1.4	-1.6	-1.8	-2.1	-2.3	-2.7	-3.4	-4.5	-5.6	-6.8	-7.7
3	Stock appreciation [b]	-0.1	-0.5	-0.6	-0.8	-0.9	-1.0	-2.4	-4.9	-4.5	-5.2	-4.0	-3.2
4	Saving after providing for depreciation and stock appreciation:												
	Industrial and commercial companies	1.0	1.3	1.4	1.1	1.5	2.0	2.2	-0.6	-0.2	1.4	2.3	2.4
	Financial companies	0.2	0.2	0.2	0.3	0.4	0.5	0.7	0.6	0.4	1.0	0.8	1.4
	All companies	1.2	1.5	1.6	1.4	1.9	2.5	2.9	-	0.2	2.4	3.1	3.8
5	plus: Net capital transfers (all companies)	0.2	0.4	0.5	0.4	0.5	0.3	0.3	0.3	0.4	0.2	0.1	0.3
6	Saving after providing for depreciation and stock appreciation, plus net capital transfers	1.4	1.9	2.1	1.8	2.4	2.8	3.2	0.3	0.6	2.6	3.2	4.1
7	plus: Notional gain on real value of net monetary liabilities (all companies) [c]	0.1	0.2	0.2	0.4	0.4	0.2	0.3	1.2	1.4	0.3	0.5	0.1
8	'Real' saving (6+7)	1.5	2.1	2.3	2.2	2.8	3.0	3.4	1.5	1.9	2.9	3.7	4.2
9	Net acquisition of financial assets	-0.1	-0.1	-0.3	-0.9	0.3	0.5	-1.7	-5.1	-1.4	-1.8	-3.0	-3.5
10	'Real' net acquisition of financial assets (9+7)	-	0.1	-0.1	-0.5	0.7	0.7	-1.4	-3.9	-0.1	-1.4	-2.5	-3.4

[a] Provisional, and Bank estimates.

[b] Industrial and commercial companies only.

[c] See Table J.

Table X

Public corporations: 'real' saving and net accuisitions of financial assets, 1967-78

£ billion

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978 [a]
1 Saving before providing for depreciation, stock appreciation and additions to reserves	0.7	0.8	0.9	0.8	0.8	1.0	1.3	1.4	1.7	2.9	3.3	3.6
2 less: Depreciation at replacement cost	-0.8	-0.9	-1.0	-1.2	-1.4	-1.6	-1.8	-2.2	-2.9	-3.6	-4.1	-4.5
3 Stock appreciation	-	-	-	-0.1	-0.1	-	-0.1	-0.4	-0.4	-0.4	-0.4	-0.3
4 Saving after providing for depreciation and stock appreciation	-0.1	-0.1	-0.2	-0.5	-0.6	-0.6	-0.6	-1.2	-1.6	-1.1	-1.2	-1.2
5 plus: Net capital transfers	-	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.5
6 Saving after providing for depreciation and stock appreciation, plus net capital transfers	-0.1	-	-0.1	-0.4	-0.5	-0.5	-0.4	-1.0	-1.3	-0.7	-0.7	-0.7
7 plus: Notional gain on real value of net monetary liabilities	0.2	0.6	0.5	0.8	1.0	0.9	1.3	3.1	4.0	2.0	3.3	2.0
8 'Real' saving (6+7)	0.1	0.6	0.4	0.4	0.5	0.4	0.9	2.1	2.7	1.3	2.6	1.3
9 Net acquisitions of financial assets	-1.0	-0.7	-0.5	-0.8	-1.1	-0.8	-0.8	-1.5	-3.0	-2.2	-1.2	-1.0
10 'Real' net acquisition of financial assets (9+7)	-0.8	-0.1	-	-	-0.1	0.1	0.5	1.6	1.0	-0.2	2.1	1.0

[a] Provisional, and Bank estimates.

[b] See Table J.

Table N

General government [a] : 'real' saving and net acquisition of financial assets 1967-78

£ billion

		1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978 [b]
1	Saving before providing for depreciation and stock appreciation	1.7	2.2	3.4	4.2	3.5	2.0	1.9	1.2	0.4	-	1.2	-0.5
2	less: Depreciation at replacement cost	-0.4	-0.5	-0.5	-0.6	-0.6	-0.7	-0.9	-1.0	-1.4	-1.6	-1.8	-2.0
3	Stock appreciation	-	-	-	-	-	-	-	-	-0.1	-	-0.1	-
4	Saving after providing for depreciation and stock appreciation	1.2	1.7	3.0	3.6	2.9	1.3	1.0	0.2	-0.9	-1.6	-0.6	-2.5
5	plus: Net capital transfers	-0.1	-0.3	-0.2	-0.1	-0.2	-0.1	-0.1	-0.1	-0.3	-0.6	-0.7	-1.1
6	Saving after providing for depreciation and stock appreciation, plus net capital transfers	1.1	1.4	2.8	3.5	2.7	1.2	0.9	0.1	-1.2	-2.2	-1.3	-3.6
7	plus: Notional gain on real value of net monetary liabilities [c]	0.6	1.7	1.4	2.0	2.2	2.3	3.0	6.3	9.0	6.2	6.2	4.6
8	'Real' saving (6 + 7)	1.7	3.1	4.2	5.5	4.9	3.5	3.9	6.4	7.8	4.0	4.9	1.0
9	Net acquisition of financial assets	-0.4	-0.3	0.9	1.6	0.7	-0.8	-1.9	-3.3	-4.9	-6.1	-4.5	-6.2
10	'Real' net acquisition of financial assets (9 + 7)	0.2	1.4	2.3	3.6	2.9	1.5	1.1	3.0	4.1	0.1	1.7	-1.6

[a] Central government plus local authorities.

[b] Provisional, and Bank estimates.

[c] See Table J.

Table P

Overseas sector: 'real' net acquisitions of financial assets 1968-78

£ billion

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978 [p]
1 Net acquisition of financial assets [b]	+0.3	-0.5	-0.7	-1.1	-0.1	+1.1	+3.7	+1.8	+1.1	-0.3	-0.3
2 less Notional loss on net monetary assets: [c]											
calculated estimate	-0.1	-0.2	-0.3	-0.3	-0.1	-0.2	-1.2	-1.0	+1.1	-2.1	-0.8
residual from domestic sectors	-0.3	-0.3	-0.4	-0.3	+0.2	+0.1	+0.1	-0.4	+0.2	-1.3	-0.6
3 'Real' net acquisition of financial assets (1+2):											
via calculated estimate	+0.2	-0.7	-1.0	-1.4	-0.2	+0.9	+2.5	+0.8	+2.2	-2.4	-1.1
via residual from domestic sectors	-	-0.8	-1.1	-1.4	-0.3	+1.2	+3.8	+1.4	+1.3	-1.6	-0.9

[a] Provisional, and Bank estimates.

[b] Equals, apart from change in sign, net investment abroad /the current account balance, plus net capital transfers (1973 and 1974 only)/.

[c] See Table J.

Notes on derivation of figures contained in the tables in Appendix 2

General

(a) Depreciation at replacement cost is the estimate of capital consumption at current replacement cost as given in CSO, (1978a), Table 11.9. 1978 figures are Bank estimates.

(b) Saving is taken before providing for additions to tax reserves, or to dividend and interest reserves. For companies and public corporations saving is undistributed income after taxation, and for general government it is the current surplus of current receipts over current expenditure, current grants and subsidies and debt interest.

(c) Lines 1, 2, 3, 4, 5 and 9 in Tables K to N inclusive and line 1 in Table P are taken from CSO (1978a), Table 1.8. Revisions for 1973 and subsequent years, and 1978 figures have been taken from Economic Trends, April 1979 and Financial Statistics, May 1979 (both published by the Central Statistical Office).

(d) Mid-1978 figures, and for some sectors mid-1977 figures, for net monetary assets/liabilities are Bank estimates. Published sources for earlier years are given in the following sections.

Personal sector (including life assurance and pension funds)

Data on net monetary assets were taken from the personal sector balance sheet published in Studies in Official Statistics No.35 (Central Statistical Office) p.25 and revised and updated to 1977 by the CSO. Market values of British government securities, listed UK debentures and preference shares and local authority debt were converted to nominal values by reference to successive December editions of The Stock Exchange Fact Book. Unit trust units and overseas and miscellaneous other assets were arbitrarily assumed to be wholly non-monetary items. The equity in life assurance and pension funds estimated by the CSO on the basis of the assets of the funds, were split between monetary and non-monetary items on the basis of the asset holdings of the funds. This is wholly consistent with incorporating the life assurance and pension funds into the personal sector.

Company sector

Data on net monetary liabilities for industrial and commercial companies are restricted. Information on selected liquid assets and liabilities was taken from Financial Statistics, Table 9.3. Estimates of the

derived by capitalising interest payments, and subsequently calculating nominal values consistent with these market values, as for the personal sector (above). Limited data for trade credit were derived from the overseas sector figures (see below).

Sources for net monetary liabilities of financial companies are more varied. Figures for banks were derived from Bank of England Quarterly Bulletin Table 6.1, and the Bank's Statistical Abstract Number 2; for building societies, the Compendium of Building Societies Statistics, Table A13 (published by the Building Societies Association; for the non-life business of insurance companies, provisional balance sheet data compiled by the Bank (for partial information see Bank of England Quarterly Bulletin 18(3) 371-376); for trustee savings banks, Annual Abstract, 1979 Edition (published by the Central Statistical Office) Table 17.21; for finance houses, Annual Abstract, 1979 Edition, Table 17.23; for unit trusts, Annual Abstract, 1979 Edition, Table 17.26; for property unit trusts, stock data compiled from Bank of England Quarterly Bulletin, Table 18 (Note: the first property unit trust was formed in March 1966); for investment trusts, Annual Abstract 1979 Edition, Table 17.26 and Bank of England estimates, see Bank of England Quarterly Bulletin, 15(2) 166-181. and for other special finance agencies, Bank of England estimates.

Public corporations

Estimates of net monetary liabilities were derived from Financial Statistics, February 1979, Supplementary Table C, and from CSO (1978a), Table 6.3.

General government

Estimates of net monetary liabilities were derived from Financial Statistics, in particular February 1979, Supplementary Table C, January 1979, Supplementary Table B, and Tables 1.3 and 11.6; CSO (1978a), Table 7.2; and CSO (1978b), Table 12.1.

Overseas sector

Estimates of net monetary liabilities were derived from CSO, (1978b), Table 12.1 and 12.2.

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