NESC REPORT NO. 16

SOME ASPECTS OF FINANCE FOR OWNER-OCCUPIED HOUSING

NATIONAL ECONOMIC AND SOCIAL COUNCIL

Some Aspects of Finance
for
Owner-Occupied Housing

No. 16

NATIONAL ECONOMIC AND SOCIAL COUNCIL

CONSTITUTION AND TERMS OF REFERENCE

1. The main task of the National Economic and Social Council shall be to provide a forum for discussion of the principles relating to the efficient development of the national economy and the achievement of social justice, and to advise the Government, through the Minister for Finance, on their application. The Council shall have regard, *inter alia*, to:

    (i) the realisation of the highest possible levels of employment at adequate reward,

    (ii) the attainment of the highest sustainable rate of economic growth,

    (iii) the fair and equitable distribution of the income and wealth of the nation,

    (iv) reasonable price stability and long-term equilibrium in the balance of payments,

    (v) the balanced development of all regions in the country, and

    (vi) the social implications of economic growth, including the need to protect the environment.

2. The Council may consider such matters either on its own initiative or at the request of the Government.

3. Members of the Government shall be entitled to attend the Council's meetings. The Council may at any time present its views to the Government, on matters within its terms of reference. Any reports which the Council may produce shall be submitted to the Government and, together with any comments which the Government may then make thereon, shall be laid before each House of the Oireachtas and published.

4. The membership of the Council shall comprise a Chairman appointed by the Government in consultation with the interests represented on the Council,

    Ten persons nominated by agricultural organisations,

    Ten persons nominated by the Confederation of Irish Industry and the Irish Employers' Confederation,

    Ten persons nominated by the Irish Congress of Trade Unions,

    Ten other persons appointed by the Government, and

    Six persons representing Government Departments comprising one representative each from the Departments of Finance, Agriculture and Fisheries, Industry and Commerce, Labour and Local Government and one person representing the Departments of Health and Social Welfare.

Any other Government Department shall have the right of audience at Council meetings if warranted by the Council's agenda, subject to the right of the Chairman to regulate the numbers attending.

5. The term of office of members shall be for three years renewable. Casual vacancies shall be filled by the Government or by the nominating body as appropriate. Members filling casual vacancies may hold office until the expiry of the other members' current term of office and their membership shall then be renewable on the same basis as that of other members.

6. The Council shall have its own Secretariat, subject to the approval of the Minister for Finance in regard to numbers, remuneration and conditions of service.

7. The Council shall regulate its own procedure.

NATIONAL ECONOMIC AND SOCIAL COUNCIL

Some Aspects of Finance

for

Owner-Occupied Housing

NATIONAL ECONOMIC AND SOCIAL COUNCIL
MEMBERS

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Abbreviations used in the text and tables

I, II etc.   Calendar quarters

1973–74   Financial year (April to March)

CPI   Consumer Price Index

ISB   *Irish Statistical Bulletin*

QB   Central Bank of Ireland, *Quarterly Bulletin*

QBHS   Department of Local Government, *Quarterly Bulletin of Housing Statistics*

PREFACE*

The Council has already completed a report on the implications of the population growth projected over the next 10 years for housing requirements. This report deals with a specific problem—the difficulties posed for first-time purchasers of houses by the size of the deposit required and the heavy incidence of repayments, relative to income, over the earlier years of the loan or mortgage. Concern for this problem arose particularly at a time when interest rates were increasing to exceptional levels. It is, however, recognised that were interest rates to decline, then the burden of repayments would be alleviated to some degree.

It concentrates mainly on the purchase of houses through building societies, but the analysis and proposals are also relevant to houses bought with local authority and other loans. The Council is not equipped to engage in detailed discussions of the proposals examined in the report with the financial institutions concerned. The Council recommends that these discussions should be initiated and pursued by the relevant Government Departments.

I. Introduction

1. This Report considers the extent to which potential borrowers have had increasing difficulty in obtaining house-purchase loans in recent years, whether due to increases in initial repayments or due to an inability to finance a deposit. The Report considers some alternative means of making home-ownership possible for households who at present cannot finance either debt-service or deposit.

2. In particular, the Report evaluates some alternative methods of financing house purchase through the building societies, which would alter the pattern of repayments over time. In order to examine these issues, it is necessary to consider the effects which the recent high rates of inflation have had—not only on the interest rate structure and the net inflow of the building societies, but also on borrowers. In the main, this Report is concerned with mortgage finance provided by the building societies, which account for about 40% of non-public funds for new housing.* However, there is some consideration of local authority loans. In principle, the alternative methods of servicing debt considered hereunder could be applied to local authority loans. This work complements the Council Report on Dwelling Needs (NESC, 1975 b).

3. The alternative methods by which a household can obtain housing services are as follows:

    (i) Rent a local authority dwelling, if the cost of acquiring a dwelling of a reasonable standard is beyond its means.

    (ii) Rent a dwelling in the private sector.

    (iii) Obtain a local authority loan. These are repayable in most

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*See Appendix B, Tables B1 and B2. Furthermore some 60% of the dwelling stock is held by owner-occupiers, and almost 70% of annual dwelling completions are for owner-occupation (Appendix B, Tables B3 and B4).

cases over 30 years. The income of the borrower—subject to some qualifications—cannot exceed £2,350 a year, and the loan cannot exceed £4,500. The interest rate on these loans at present—which is fixed for the duration of the loan—is 11·5%.

(iv) Obtain a loan from an assurance company, in association with a life assurance policy. The borrower pays interest on the loan, generally at a fixed rate over 20 to 30 years, and also pays the premium on the life assurance policy. These loans tend to cover the relatively more expensive houses.

(v) Obtain a loan from a building society. The borrower makes monthly payments, which comprise interest on the outstanding balance of debt (calculated at yearly intervals), plus repayment of the loan. This means that the effective rate of interest which is charged is somewhat higher than the quoted rate, since interest is charged on the principal which is repaid during the year. For the first few years of the loan the payments mainly consist of interest rather than capital payments. Unlike the interest rate on local authority loans, the interest rate on building society loans is variable. In a period of rising interest rates, the annual repayments of existing mortgagors will increase, unless the term is increased.

(vi) Obtain a loan from an Associated Bank. This option became available from July 1975, when the major Associated Banks introduced a scheme to provide about £40 million over two years, through the issuing of mortgages. The interest rate is 13·0%, with a maximum repayment period of 20 years.

4. There is a wide range of issues which relate to the distributional impact of the subsidies which are given to housing—e.g. the effects between tenure groups and between income groups. These issues are not considered here, but are regarded as an area for future consideration by the Council. The only distributional effects considered in this Report are those between building society depositors and their borrowers.

II. Payments Required of Borrowers

Interest Rates on Mortgage Loans

5. In recent years, the interest rates on mortgage loans have not fully reflected the relatively high rates of inflation. If building societies were to hold steady the *real* rate of interest* on loans, and if the rate of inflation increased, the lending rate would have to be increased. For example, if the real rate were 2% and the long-run rate of inflation increased from 10% to 13%, then it would be necessary to raise the mortgage rate from 12% to 15%. The actual trend in mortgage rates partly reflects the resistance of borrowers to increases in repayments, since an increase in the interest rate has a decisive impact on the stream of repayments. For example, if the mortgage rate were raised from its present level of 11·5%† to 15%, then the annual repayments on a £5,000 mortgage over 20 years would increase from £649 to £799, an increase of 23%. If the loan were $2\frac{1}{4}$ times the income of the borrower—a typical case—then the repayments as a proportion of gross income would increase from 29% to 36%. There would be a slight reduction in annual repayments if the term of the loan increased. But this would have only a marginal effect, since interest payments are such a large part of the total in the early years. Again taking an example of a mortgage of £5,000 at 11·5%, if the period were lengthened from 20 to 25 years the annual repayments would fall from £649 to £616.

6. Another reason why mortgage rates have not fully reflected the rates of inflation is that, at least until recently, the mortgage rate has seldom changed. This is partly for administrative reasons, since changes are costly to the societies, especially if rates have to be modified frequently. The interest rate on mortgages is set on a 'cost-plus'

*Essentially, the *real* rate of interest is calculated by subtracting the long-run rate of price increase from the nominal interest rate.

†At the time of writing (and until February 1976), this rate applies to existing borrowers, while a rate of 12·5% applies to new borrowers.

TABLE 1

Nominal and Real Rates of Interest charged on Mortgage Loans, 1966—75

Year	Rate of interest on mortgage loans (a) (1) %	Percentage change in consumer prices (2) %	Expected rate of change of prices (b) (3) %	Real rate of interest on mortgage loans (1)−(3) (4) %	Net rate of interest on mortgage loans, after allowing for tax relief (c) (5) %	Real net rate of interest on mortgage loans (5)−(3) (6) %
1966	7·5	3·0	3·6	3·9	4·9	1·3
1967	8·0	3·2	3·3	4·7	5·20	1·9
1968	8·0	4·7	3·5	4·5	5·20	1·7
1969	8·5	7·4	4·8	3·7	5·53	0·7
1970	9·0	8·2	6·0	3·0	5·85	−0·1
1971	9·0	9·0	7·0	2·0	5·85	−1·1
1972	9·0	8·6	7·4	1·6	5·85	−1·5
1973	9·8	11·4	8·6	1·2	6·37	−2·2
1974	11·25	17·0	11·5	−0·2	7·31	−4·2
1975 Jan.-Sep.	11·25	19·6	14·3	−3·0	7·31	−7·0

Note: (a) Figures for 1966—68 are representative rates. Interest rates are weighted averages of monthly figures. In cases where the interest rate changed and there was a temporary divergence between the rate for existing and for new borrowers, the former is used.

(b) Calculated from equation (2), Appendix A.

(c) Uses a marginal tax rate of 35% for the whole period.

Source: Col (1): QB; information from Central Bank.
Col (2): ISB.

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basis, i.e. it is related to the rate of interest which is paid on deposits. As a result of inflation, combined with the "stickiness" in mortgage rates at present a real rate of interest of about zero is charged on mortgages, compared with a rate of around 3% which existed in the mid-1960s.* (see Table 1). If allowance is made for tax relief on interest payments, then the real rate of interest on mortgage loans is negative. The spirit of the calculations in Table 1 is shown in the following hypothetical case—a householder sells a house after one year and makes an untaxed capital gain of £200; at the same time the interest payment on the mortgage loan, after tax relief, is £200. In this case the real rate of interest on the loan is zero.†

7. Invariably building societies do not meet all the demands for mortgage loans at the going rate of interest. Firstly, there are conditions regarding the borrower's income. At present, for the larger building societies ·the criteria are *either* that the borrower's gross income must be at least three times the annual repayments, *or* that the loan must equal at least 2 to $2\frac{1}{4}$ times the borrower's annual income. Secondly, there are other criteria, which include conditions regarding both the length of time a borrower must have had a deposit with a building society and the size of this deposit; the definition of income; the treatment of a wife's income and the restricted eligibility of women as borrowers. An example of the stipulation in the case of a woman is that she must be in professional employment and is allowed only a portion of her income. It is accepted that building societies must pay attention to the possible risks of default on loans. The fact that mortgage losses have been rare (Cleary, 1974, p. 38) indicates that the societies have certainly not been capricious in their judgements. Nevertheless, some of the above criteria which have been used by the societies can have little bearing on the risks of default by borrowers.

*Ideally a measure of price increase for houses should be used in Table 1, rather than the CPI, but a price index on second-hand houses is not available for the whole period. However, what evidence there is suggests that second-hand house prices have increased at about the same rate as the CPI since 1960. This evidence is discussed later.

†The monthly rate of interest paid by owner-occupiers on mortgage loans exceeds the real rate of interest by the rate of price increase in houses—for a demonstration, see Evans (1974).

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TABLE 2
Rental Cost of Owner-Occupied Housing

| Financial Year | Initial repayments required for mortgage on average-priced house (a) | | Index of repayments: Col (2), deflated by CPI (mid-Nov. 1968 = 100) | Index of average earnings per week for males on adult rates, manufacturing industry (b) 1968–69 = 100 |
| | Amount | Index: 1968–69 = 100 | | |
	(1)	(2)	(3)	(4)
	£			
1968–69	350	100·0	100·0	100·0
1969–70	407	116·3	108·5	111·2
1970–71	448	128·0	109·3	128·7
1971–72	503	143·7	112·8	147·4
1972–73	557	159·1	114·8	169·1
1973–74	765	218·6	140·4	199·9
1974: April-Dec.	963	275·1	152·4	234·6
1975: Jan-Sept.	1,057	302·0	143·1	278·0 (c)

Note: (a) Uses the average gross price of houses for which loans were approved by building societies. Assumes a 75% mortgage throughout the period. Makes the following assumption regarding the average term of loans on new houses: 25 years in 1968–69, gradually declining to 20 years in 1973–74, and remaining at 20 years subsequently. (This is in line with the fall in the modal value of the term from 25 to 20 years which has occurred in the period considered in this table). Finally, for each year an average loan rate is used: the monthly rate weighted by the number of months in force.

(b) Data for 1968–69 and for first quarter of 1969–70 are based on trend of earnings of all workers in manufacturing industry.

(c) Estimate.

Source: Col (1): QBHS.
Col (4): ISB.

Effects of inflation on borrowers

8.   There are two principal constraints on the ability of a household to obtain a mortgage: one relates to income, and the other to liquid asset-holdings. Firstly, those households whose incomes are relatively low (or who have little accumulated assets) are unlikely to meet the 'income' criterion of building societies (i.e. the minimum ratio of income to repayments). Secondly, an initial deposit is required, which is the residual remaining after the loan, the State grant and the local authority grant (if applicable) are deducted from the gross house price. The movements of repayments and of deposits in recent years are now considered, in turn.

   (i) *Annual repayments*
      Firstly, the trend in repayments is shown. Table 2 illustrates the movements in the initial repayments on building society loans since 1968–69. This table shows that the initial repayments, for a mortgage on a house of average price increased from £350 in 1968–69 to £1,057 in January-September 1975—in effect an increase of 202%.* This increase in the initial repayment is the result of both an increase in the price of houses† (shown in Table 3), an increase in mortgage interest rates and a reduction in the typical length of term on loans. *Secondly*, the change in the level of repayments must be considered in relation to the trend in incomes. In the period under review the average money earnings of adult males in manufacturing industry rose by 178%.

   (ii) *The size of deposit*
      The initial deposit which is required from the borrower will be determined by two sets of factors:

*The initial repayments in real terms using the CPI as a deflator increased by 43% in this period.

†A qualification regarding the house price index in Table 3: this is not a "true" price index, since the mix of houses may change over time. Ideally a price index should relate to a homogeneous good (of constant quality), or else refer to a uniform basket of goods. An attempt at producing such an index of new house prices for certain specific house types in the Dublin suburbs was made by Shanley and Boland (1972) for the period from mid-1967 to May 1972, but this is not necessarily a representative series. These data do show a somewhat higher rate of increase in house prices than the figures for County Dublin in QBHS which relate to average price of new houses for which loans were approved by all agencies.

TABLE 3

New House Prices, 1968-75

Financial Year	Index of average gross price of new houses for which loans were approved (a)		Consumer Price Index 1968-69 = 100	House price index relative to CPI, 1968-69 = 100	
	Building societies (1968-69 = 100)	Local authorities (1968-69 = 100)		Houses financed through building societies Col (2) ÷ Col (4)	Houses financed through local authorities Col (3) ÷ Col (4)
	(2)	(3)	(4)	(5)	(6)
1968-69	100·0	100·0	100·0	100·0	100·0
1969-70	105·7	107·7	107·2	98·6	100·5
1970-71	114·9	118·6	117·0	98·2	101·4
1971-72	127·1	133·2	127·3	99·8	104·6
1972-73	137·9	143·6	138·6	99·5	103·6
1973-74	167·1	168·6	155·6	107·4	108·4
1974: April-Dec.	202·0	194·7	180·3	112·0	108·0
1975: Jan.-Sept.	221·6	208·9	210·9	105·1	99·0

Note: (a) Gross price includes the State grant, and excludes the capitalised value of ground rents.
(b) Data cover houses purchased from speculative builders only, and exclude, for example, houses built by farmers.

Source: QBHS; ISB.

—the maximum loan which building societies are willing to give. At present, in the case of the larger building societies the maximum is 75% of the value of the house, although in some cases loans of up to 90% can be obtained—conditional on an indemnity bond;

—the criteria mentioned in paragraph 7, which essentially are based on the relation between the borrower's income and the price of the house.

Even if the rate of increase in money income equals the rate of increase in house prices, the discrepancy in money terms between the borrower's loan and the house price will increase. Table 4 shows that, between the financial year 1968-69 and January-September 1975, the average deposit required for new houses financed through building society loans increased from £971 to £2,436. The increase in the deposit which was required for new houses financed through local authority loans was much greater: from £405 to £2,861 (or from £130 to £2,536 where the supplementary grant was payable*) over the same period. These are in nominal terms. For many potential borrowers, this increase in the required deposit must have severely impeded their ability to obtain a loan. Moreover, in some cases it must have resulted in recourse to secondary credit sources in order to finance loans. It should be noted that such secondary sources generally charge a relatively high rate of interest.

In summary, the combined effect of real increases in the size of deposit and in annual repayments has been that those on lower incomes have found it increasingly difficult to finance house-purchase.

9. It is evident from the above data that repayments as a proportion of income can be relatively high in the early years of a loan. However, in later years the burden of repayments can decline significantly, as

*The supplementary grants payable by local authorities (if the income of the borrower is below a certain figure) are applicable to about half of the dwellings which are financed through local authority loans.

TABLE 4

Average Deposit Required on Houses being Purchased, 1968–75

Financial Year	Financed through building society loans (a)		Financed through local authority loans			
			Where no supplementary grant is payable (b)		Where supplementary grant is payable (c)	
	Nominal	Deflated by CPI (mid-Nov. 1968 = 100)	Nominal	Deflated by CPI (mid-Nov. 1968 = 100)	Nominal	Deflated by CPI (mid-Nov. 1968 = 100)
	£	£	£	£	£	£
1968–69	971	971	405	405	130	130
1969–70	1,041	971	687	641	412	384
1970–71	1,156	987	1,088	929	813	652
1971–72	1,259	988	1,276	1,002	951	746
1972–73	1,393	1,005	1,158	835	833	601
1973–74	1,757	1,128	1,379	886	1,054	677
1974: April-Dec.	2,191	1,214	2,339	1,296	2,014	1,116
1975: Jan.-Sept.	2,436	1,155	2,861	1,355	2,536	1,202

Note: (a) Assumes a 75% loan on average-priced house, and deducts grant to calculate the average deposit. State grant of £275 is used over period 1968–69 to 1970–71, and maximum grant of £325 (which applied to houses commenced after 31 December 1970) is used for subsequent period.

(b) Uses the maximum loan which is allowable, and the average-priced house; deducts the State grant from the gross price. In years when the maximum loan changed, the limit which existed mid-way through the year is used.

(c) Deducts not only the State grant but also the supplementary grant from the gross price. In almost all cases the supplementary grant is equal to the State grant.

Source: QBHS.

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the borrower's money income increases over the term of the loan. This decline in the repayments/income ratio is likely even if interest rates are being gradually adjusted upwards due to inflation. This is shown in the following example, using the 1965 earnings for the median adult male worker in manufacturing industry of £692, which implies that he would have paid no income tax in that year. It is assumed that the median worker obtained a loan equal to $2\frac{1}{2}$ times his annual income, i.e. £1,729. The mortgage interest rate then was 7·5%, which implied annual repayments of £155 a year on this loan. In 1974 the earnings of the median worker in manufacturing industry are estimated to be £2,101, thus the average increase in money earnings was 13·2% a year over the period 1965–74.* Assuming that the worker is married and has four children, the income after tax in 1974 amounts to £1,971. In the intervening period the mortgage interest rate increased a number of times and was 11·25% in 1974. It is assumed that each time the interest rate changed, the median worker's mortgage repayments were adjusted so that the loan could be paid off within the original 25 year span. In 1974 the annual repayments amounted to £200 gross, and the repayments after tax relief were £158. From this example it can be seen that:

(i) gross repayments as a proportion of income declined from 22% in 1965 to 10% in 1974—despite the increases in interest rates which occurred in the period.

(ii) net payments as a proportion of income decreased from 22% in 1965 to 8% in 1974.

*The *real* incomes (money incomes deflated by CPI) of the median worker increased by an average of 4·8% a year in the period 1965–74. Median earnings in 1974 are estimated, based on the mean earnings in manufacturing industry. It is assumed that the relationship between the mean and the median in 1974 is the same as existed in 1965. These data do not capture any additional earnings which might be obtained by these workers, thus they are not synonymous with total earnings. A further qualification is that the data up to 1968 refer to the average earnings of male wage-earners of 18 years and over in a pay week in October each year, but since 1969 they refer to men who are on adult rates of pay in a week in September. Since the data for the period from 1969 exclude some workers who would have come within the scope of the pre-1969 series, the average will shift up. However, this effect should not be serious when all manufacturing industry is taken. (Source: *Statistics of Wages, Earnings and Hours of Work,* and ISB.)

One implicit assumption in these calculations is that the house is not sold during the period. In practice as real incomes rise the desired standard of housing is likely to increase, thus a house may be sold, a capital gain obtained and a higher priced house purchased. This could result in a lower reduction in the ratio of repayments to income, in any period.

III. The Net Inflow to Building Societies

10. In recent years both deposit rates and mortgage rates have been negative in real terms. In these circumstances there is redistribution between mortgagors (who gain in real terms) and depositors (who lose in real terms) in building societies. Since interest rates have not reflected fully the rate of inflation, the real interest rate which is offered to depositors declined markedly since 1970 and is at present a negative one. Table 5 shows the differences in interest rates between the building societies and the Associated Banks in the period since 1967. While there was an exceptional situation in 1974 when this differential fell to zero, it has once again become over a percentage point (grossed-up) in favour of the building societies. The net inflow of deposits to the building societies has been responsive to this differential;* for example, in 1974 when the Associated Banks offered the same interest rate on deposits as that offered by building societies, the net inflow declined (see Chart 1).

11. Since May 1973 the rate of interest charged on mortgages has been below the equilibrium rate† partly because of a Government subsidy. In May 1973 the Government decided, as a temporary measure, to give a subsidy to the building societies. This happened at a period when, due to a general rise in interest rates, the building societies had to increase their deposit rates twice—from 5½% in March to 7% in May 1973. This subsidy enabled the building societies to increase the rate of interest to depositors from 7% to 8%, while keeping mortgage rates at 11·25%, which was about 1·25 percentage points below the mortgage rate which

*The Technical Annex, which may be obtained on request from the secretariat, uses quarterly data for the 1970–75 period, and tests the hypothesis that the net inflow responds to changes in building society interest rates, competitive interest rates, and income. The net inflow has been quite responsive to interest rates at building societies and at the Associated Banks and also to real income changes.

†Defining this as the rate at which the value of mortgages demanded is brought into equality with the value of mortgage funds supplied.

would otherwise have obtained. From July 1975 the rate of subsidy was reduced from 1% to 0·75%, and the subsidy has now been terminated, with effect from February 1976. This subsidy had distributional consequences, since the existing borrowers benefited.*

12. Variations in the net inflow to the building societies have an impact on their level of advances. Other things being equal, a rise or fall in the trend of the net inflow will lead to an increase or decrease in the trend of advances—unless the societies' liquidity ratios change. The level of advances has, in turn, an effect on activity in house construction.

TABLE 5

Deposit Rates at Building Societies and at Associated Banks, 1968–1974 (a)

Year/ quarter	Building Societies' share accounts (1)	Building Societies' share accounts grossed-up (b) (2)	Associated Banks (c) (3)	Associated Banks, grossed-up (d) (4)	Difference between interest rates (1)–(3) (5)	Difference between grossed-up interest rates (2)–(4) (6)
	%	%	%	%	%	%
1968: I	4·5	6·92	4·25	6·54	0·25	0·38
II	4·5	6·92	4·25	6·54	0·25	0·38
III	4·5	6·92	4·25	6·54	0·25	0·38
IV	4·5	6·92	3·5	5·38	1·0	1·54
1969: I	4·5	6·92	3·67	5·65	0·83	1·27
II	5·17	7·95	4·5	6·92	0·67	1·03
III	5·5	8·46	4·5	6·92	1·0	1·54
IV	5·5	8·46	4·5	6·92	1·0	1·54
1970: I	5·5	8·46	4·5	6·92	1·0	1·54
II	5·5	8·46	4·5	6·92	1·0	1·54
III	5·5	8·46	4·5	6·92	1·0	1·54
IV	5·5	8·46	4·5	6·92	1·0	1·54

*In order to make a firm judgement about the distributional consequences, information on the relative incomes of borrowers and of depositors would be needed.

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TABLE 5—continued

Deposit Rates at Building Societies and at Associated Banks, 1968–1974 (a)

Year/ quarter	Building Societies' share accounts (1)	Building Societies' share accounts grossed-up (b) (2)	Associated Banks (c) (3)	Associated Banks, grossed-up (d) (4)	Difference between interest rates (1)–(3) (5)	Difference between grossed-up interest rates (2)–(4) (6)
1971: I	5·5	8·46	4·5	6·92	1·0	1·54
II	5·5	8·46	3·75	5·77	1·75	2·69
III	5·5	8·46	3·75	5·77	1·75	2·69
IV	5·5	8·46	3·0	4·62	2·5	3·84
1972: I	5·5	8·46	3·0	4·62	2·5	3·84
II	5·5	8·46	3·0	4·62	2·5	3·84
III	5·5	8·46	3·33	5·12	2·17	3·34
IV	5·5	8·46	4·0	6·15	1·5	2·31
1973: I	5·67	8·72	5·25	8·08	0·42	0·64
II	6·33	9·74	5·83	8·97	0·50	0·77
III	7·0	10·77	6·5	10·0	0·50	0·77
IV	8·0	12·31	7·67	11·8	0·33	0·51
1974: I	8·0	12·31	8·0	12·31	0·0	0·00
II	8·0	12·31	8·0	12·31	0·0	0·00
III	8·0	12·31	8·0	12·31	0·0	0·00
IV	8·0	12·31	8·0	12·31	0·0	0·00
1975: I	8·0	12·13	7·83	12·05	0·17	0·26
II	8·0	12·31	7·25	11·15	0·75	1·16
III	8·0	13·01	7·25	11·79	0·75	1·22

Note:

(a) The interest rates in columns (1) and (3) are quarterly figures, being weighted average of monthly figures.

(b) That is pre-tax equivalent for a taxpayer. A marginal tax rate of 35%, throughout the period, is used, except for 38·5% in 1975 III.

(c) For deposits under £5,000. Up to 1971, the data cover deposits under £25,000.

(d) Column (3) grossed up to obtain the pre-tax equivalent for a taxpayer, since the first £70 per annum of interest earned by an individual is not subject to income tax. A marginal tax rate of 35%, throughout the period, is used, except for 38·5% in 1975 III.

Source: QB.

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CHART 1

A. Building Societies:

(i) Liquidity ratios (%)
(ii) Loans paid on all houses, 1970 price (£ mn)
(iii) Net inflow, 1970 prices (£ mn)
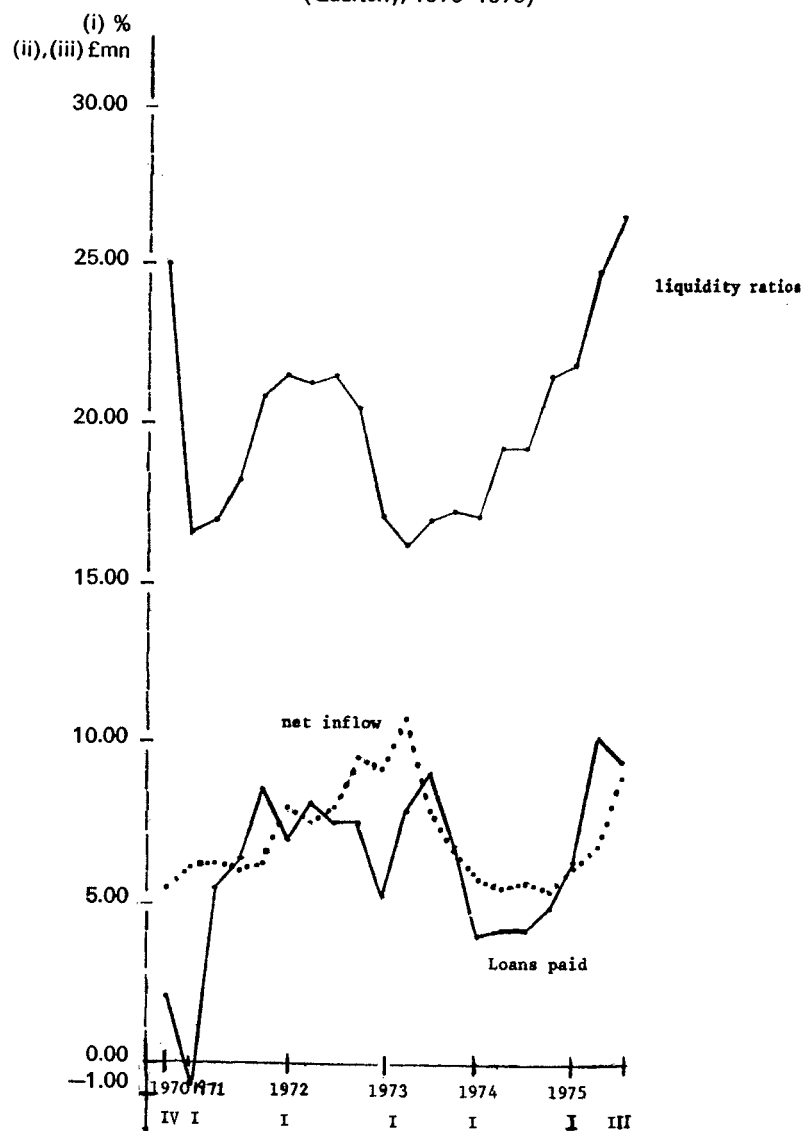
(Quarterly, 1970–1975)

Chart 1 shows that the trend in the level of advances is related to the net inflow. The broad relationships between building society advances, housing starts and house prices, are given in Chart 2. This chart shows that the level of advances and the level of starts tend to move together over the cycle. To a certain extent the societies have let their liquidity ratios increase at times of high net inflow (Chart 1). To the extent that this leads to compensating reductions in liquidity ratios at times of low inflow, it helps to smoothen the fluctuations in advances.

CHART 1—continued

B Net inflow to building societies
  (i) Net inflow, 1970 prices (£mn),
  (ii) Difference: interest rates at building societies and at Associated Banks (% points)

(Quarterly, 1970–75)
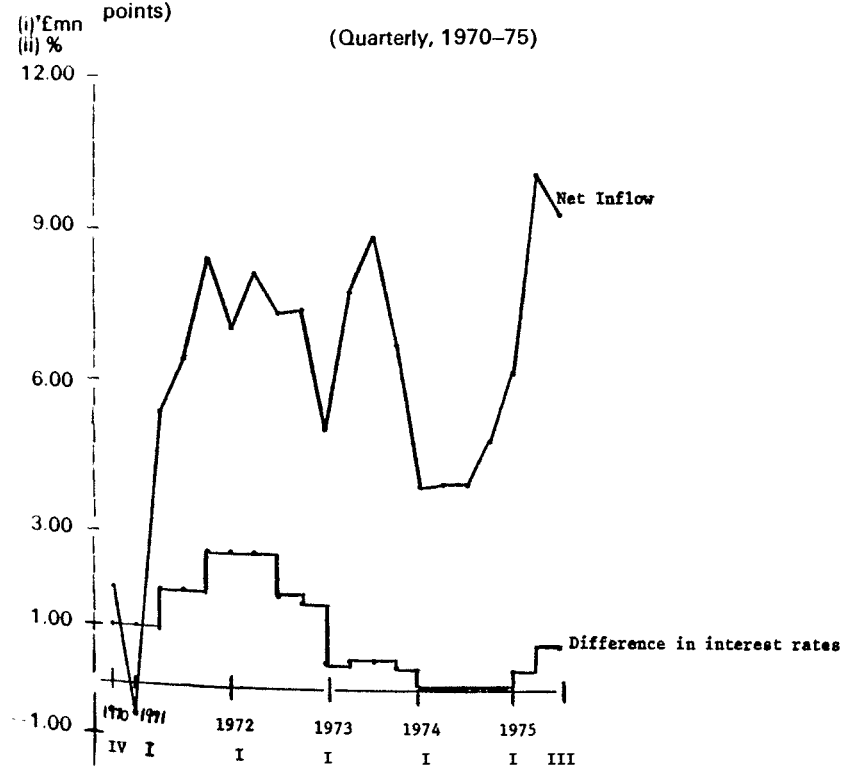
Note: (a) 1971 I affected by ending of banks' dispute.
    (b) Loans and net inflow are each deflated by index of average price of new houses for which loans approved by societies, 1970 I =100.

Source: QB; QBHS; Appendix B, Table B5.

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CHART 2

(i) Building society loans paid on all houses, 1970 prices (£ mn)
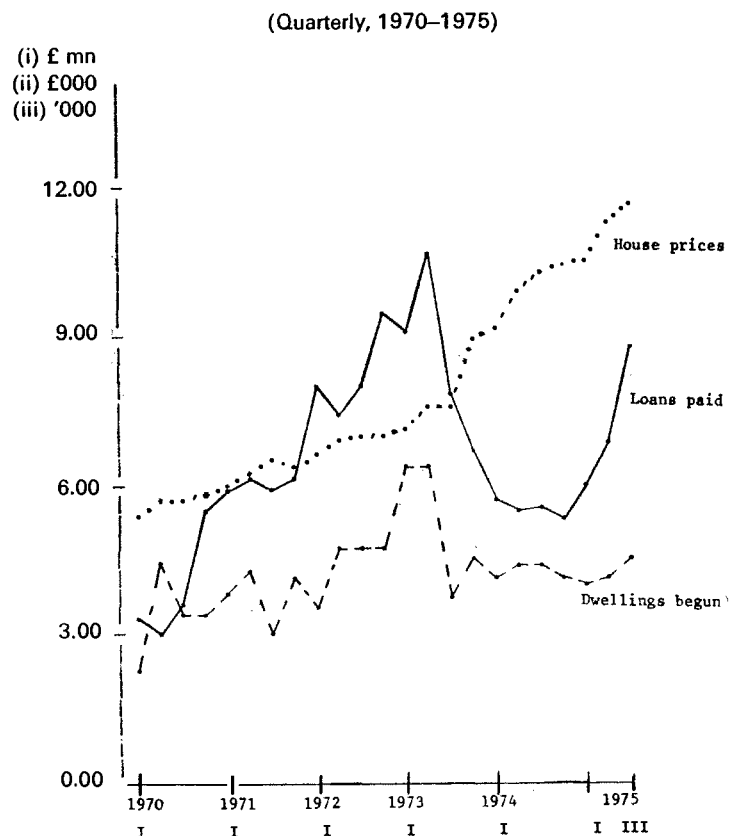
(ii) Average gross price of new houses, for which loans by building societies (£)

(iii) Dwelling begun ('000)

(Quarterly, 1970–1975)

(i) £ mn
(ii) £000
(iii) '000

Note: Loans—same deflator used as for Chart 1. Dwellings begun: (a) exclude local authority dwellings, and conversions and non-grant dwellings; (b) data for 1972 IV and 1973 I are averaged, since this was an exceptional period due to the introduction of house price control in February 1973.

Source: QBHS.

IV. Some Alternative Methods of Mortgage Finance

13. This section examines a number of different methods of mortgage finance, whereby a borrower's money repayments would gradually increase over the term of the mortgage. These schemes* would lessen the impact of the initial down-payment, and of high interest rates which affect the borrower's repayments. One of the principal arguments in favour of these methods is that there is a need to lessen the resulting high repayments in the early years of a mortgage, which affect both existing borrowers (as their interest rates change) and potential borrowers.† The methods examined in turn are—the real value mortgage; a mortgage where payments increase each year by a stipulated percentage; and a mortgage where repayments are a specific proportion of income.

The Real Value Mortgage

14. Under the real value mortgage, the pattern of money payments would be altered over time. Real payments would be constant, while money payments would increase at the rate of inflation and the debt would be repaid by the original term of years. At present the real payments typically decline over the term of the mortgage while the money payments remain constant. It must be emphasised that, in the real value mortgage, the present value of the stream of money payments required to service the mortgage is precisely the same as

*E.g., Black (1974). A recent article which examines the real value mortgage and which derives the formula for this mortgage, is Whitley (1974). For contrasting critiques of the index-linking of mortgages see OECD (1975)—which also contains a taxonomy of indexing—and Modigliani (1974), or Cohn and Fischer (1975). Hughes (1974, 1975) considers many different methods of finance, including one where the lending agency takes an equity share in the house. Among the schemes which Richardson et al (1971) consider are some which would not only affect the demand for mortgages, but also would result in an increase in the supply of mortgage funds.

†Other arguments have been presented for linking mortgage repayments to the rate of inflation, some of which are examined briefly in Section VI.

in the conventional mortgage.* Under the real value mortgage the repayment of the principal takes place at a slower rate, compared with the conventional mortgage, and thus the capital outstanding falls more slowly. Indeed when a realistic example is taken, the total repayments in the early years are insufficient to cover the interest payment on the remaining debt. This shortfall is added to the outstanding debt, and as a result the nominal debt actually increases. Since the average money debt which is outstanding is greater than in the conventional mortage, the total money payments over the life of the mortgage are greater.

15. Tables 6 compares the repayments under a real value mortgage with those in the conventional mortgage, in a simple case where the principal of the loan is £1,000, the term is five years. In this simplified example a real interest rate of 1·8% and a rate of inflation of 10% per annum are assumed,† which implies a nominal interest rate of 12% per annum. The present value of the gross payments,‡ discounted at a rate of interest of 12%, is £1,000.

16. The repayments and debt for a more realistic case are shown in the charts in Appendix C. In the example in Appendix C a representative house price of £11,042 is used. This was the average price of all new houses for which building society loans were approved in January-September 1975. A mortgage of 75% of the value of the house, which is the most usual loan given at present, implies a loan of £8,300. A twenty

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*In deriving present values, future payments are discounted, using an interest rate to simulate a borrower's preference for making repayments later rather than now, and a depositor's preference for cash now rather than later. Accordingly, payments made on different dates cannot be added up. If the going interest rate is 10%, then an investment of £1 yields £1·10 in a year's time. Thus the present discounted value of £1 payable a year from now is equal to £1 ÷ 1.10.

†It is possible to allow for changing rates of inflation each year, but the calculations here assume for simplicity a steady rate of inflation. In practice, the inflation rate in the previous year could be used by building societies, with constant money repayments per month.

‡The effects of the tax relief on mortgage interest payments are that, while the gross repayments increase over time at an annual rate of 10%, the net repayments after tax increase at a higher rate. Due to the tax relief the present value of net repayments is less than that of gross repayments.

TABLE 6

Three schemes of servicing a £1,000 loan over 5 years at 12%

A. Conventional

(£'s)

Year	Payment	Interest Payment	Net Payment, after tax(a)	Capital Outstanding	Present Value of Payment	
					gross	net
1	277·4	120·0	246·2	842·6	247·7	219·8
2	277·4	101·1	251·1	666·3	221·2	200·2
3	277·4	80·0	256·6	468·8	197·5	182·7
4	277·4	56·3	262·8	247·7	176·3	167·0
5	277·4	29·7	269·7	0	157·4	153·0

Present value of gross payments: £1,000.
Present value of net payments: £922·7.

B. Real Value Mortgage, where real rate of interest 1·8%, rate of inflation 10%

(£'s)

Year	Payment	Interest Payment	Net Payment, after tax(a)	Capital Outstanding	Present Value of Payment	
					gross	net
1	232·2	120·0	201·0	887·9	207·3	179·4
2	255·4	106·5	227·7	739·0	203·6	181·5
3	280·9	88·7	257·9	546·8	199·9	183·5
4	309·0	65·6	291·9	303·4	196·4	185·5
5	339·9	36·4	330·4	0	192·9	187·5

Present value of gross payments: £1,000·0.
Present value of net payments: £917·4.

TABLE 6—continued

Three schemes of servicing a £1,000 loan over 5 years at 12%

C. Payments increase by 5% per annum

(£'s)

Year	Payment	Interest Payment	Net Payment, after tax(a)	Capital Outstanding	Present Value of Payment	
					gross	net
1	253·8	120·0	222·6	866·2	226·6	198·8
2	266·5	103·9	239·5	703·7	212·5	190·9
3	279·8	84·4	257·9	508·3	199·2	183·5
4	293·8	61·0	278·0	275·5	186·7	176·6
5	308·5	33·1	299·9	0	175·1	170·2

Present value of gross payments: £1,000.
Present value of net payments: £920·0.

Note (a) The net payment assumes that the borrower pays tax at a marginal rate of 26%.

year term is assumed.* The first set of calculations assume a real interest rate of 1·8% and an inflation rate of 10% throughout the term, which implies a nominal interest rate of 12%. The first year's gross payment is much lower than in the conventional scheme: £549 compared with a payment of £1,111 in the conventional scheme. The payment increases at a rate of 10% a year, but does not exceed the payment made under the conventional mortgage until the ninth year. Allowing for tax relief, the net payment in the first year is £406 compared with £852 under the present method, and net payments are lower than under the present method until the tenth year.

17. As has been mentioned, one very noteworthy feature of the real value mortgage is the behaviour of the debt outstanding. At a 12% rate of interest, the first year's interest payment required on the mortgage is £996. This is £447 greater than the gross payment which is made, and the balance is added to the debt which is outstanding. Hence, in the early years of a real value mortgage the debt outstanding will typically

*This is at present the maximum which the larger building societies will allow, with one exception where the term may go to twenty-five years.

increase. This effect is pronounced with the relatively high rate of inflation which is chosen in this exercise, where the debt outstanding increases until it reaches £11,730 in the tenth year. The decline in the outstanding debt at the end of the mortgage is quite precipitate: over the last four years £8,800 of debt is repaid. But this is all in nominal terms. In real terms—that is at base year (1975) prices—the capital outstanding falls from the first year onwards, as is seen in Chart C3.

18. An alternative set of calculations for a real value mortgage is in Appendix C, where the rate of inflation is assumed to be 5% a year. The same real interest rate of 1·8% is assumed, and thus the assumed nominal interest rate is 6·9%. A mortgage of £8,300 at this interest rate would entail annual repayments of £778 under the present system. Under the real value mortgage, gross repayments exceed those which would arise in the conventional scheme from the ninth year onwards. The value of the capital outstanding is very sensitive to the 5% rate of inflation. The nominal debt hardly increases at all, and peaks much earlier—in the third year. The peak debt of £8,300 is significantly lower than the peak debt at a 10% rate of inflation.*

Payments increase each year by a stipulated percentage
19. Under this arrangement the money payments would increase each year by a certain percentage. As long as the rate of inflation exceeded the stipulated percentage, there would be a decline in the real payments over time—although not as steep a decline as occurs in the method used at present. The higher the annual percentage increase in money payments, the lower the money payment in the first year. As in the real value mortgage, the present value of repayments is equal to that in the conventional mortgage.

20. In the following example, the same mortgage of £8,300 is taken, and repayments are assumed to increase by 5% per annum. The interest rate on outstanding balances is assumed to be 12%. The detailed

*The calculations are quite sensitive to the length of the term. If the term is 25 years the first year's payment falls from £549 to £458 and there is a pronounced effect on the capital owed which rises to a peak of £15,800 in the fifteenth year.

figures on repayments and debt are in Appendix C, which also gives the results for an alternative example where repayments increase by 3% a year. If repayments grow by 5% a year, then the repayment in the first year is £801, compared with £1,111 under the present method. The gross repayment does not exceed that made in the present method until the eighth year. The net repayments exceed those made in the conventional mortgage from the ninth year onwards. The amount of debt outstanding increases a little over the early years until the seventh year when it reaches a peak of £9,148.

21. A special case of this scheme is where the first year's payment is at least as great as the interest payment.* In this case, for the same mortgage of £8,300 the first year's payment would be £996 compared with £1,111 in the conventional scheme. Thus, the burden of the initial repayment would only be slightly lowered. This would guarantee that the nominal debt would never increase. In this example, an annual rate of increase in payments of about 2% would be required. If interest rates were lower, this case would have more effect: e.g. at 10% rate of interest, a reduction from £975 to £830 in the first year's payment. There is a scheme which operates on this basis—the low-start mortgage scheme operated by the Greater London Council. The borrower, who must be under 30 years of age, pays only the interest in the first year, and the repayment increases regularly in each succeeding year. The maximum loan which the Council offers is related to the applicant's family income: the monthly repayment cannot be greater than 22% of this income.

Repayments as a specific proportion of income
22. Here the net payments would be a certain proportion of the income of the head of the household, and there would be no fixed term for the mortgage.† In Appendix C (Table C6) there is an example where net

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*A method where the first year's payment would be the interest payment is discussed in National Economic Development Office (1972). Other variants are possible. For example, there could be only interest payments for, say, the first five years, with the repayment of principal being made over the remaining period of the loan.

†See Hughes (1974).

repayments are fixed at 15% of income before tax—a proportion which is significantly lower than would typically arise in a conventional mortgage. The estimated median earnings of male workers (on adult rates) in manufacturing industry in 1974 are used in this example, i.e. £2,320. It is assumed that money incomes—and thus the net repayments in money terms—increase by 10% a year. The value of the debt outstanding* rises very slightly until the sixth year. By the seventeenth year the total debt is paid off. By contrast, under the present method of finance, the net payment in the first year (for a twenty year loan at 12%) would be £777 or 33% of income.

23. Total payments at base year prices could decrease over time, but this would depend on the trend of the borrower's *real* income. One of the features of this formula is that the term is flexible—the greater the increase in incomes the shorter is the term. This scheme has the advantage, from the point of view of the borrower, that it removes any possibility that payments as a proportion of income might increase over time. By contrast, under the alternative schemes, the proportion of income spent on repayments could increase in later years.

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*The mortgage is assumed to be 2½ times income, i.e. £5,800.

V. Comparison of Alternative Methods

24. The first year's payment is compared in the alternative schemes* (see Table 7). The scheme with the lowest repayments in the first year is the real value mortgage.† Of the non-conventional formulae, the one with the highest payment in the first year is the scheme where payments rise by 3% a year. As a proportion of income, the payments in the first year vary from a low of 17% in the real value mortgage,‡ to a high of 33% in the conventional scheme. These comparisons are only designed to bring together some of the salient features of the schemes which have been discussed. They cannot be used to reach an unequivocal conclusion about them, since only a limited range of options within the different schemes is examined, and many variations are possible within each scheme. Neither has an exhaustive set of sensitivity tests been made—for example, with regard to the sensitivity of values to the rate of inflation chosen (in the real value mortgage), or to the rate of increase in payments which is used.

25. Table 8 examines the speed with which the nominal debt is repaid under the alternative methods of finance, excluding the one where repayments are a fixed proportion of income. This table shows that the speed of repayment under the real value mortgage is sensitive to the rate of inflation chosen.

*The assumption is made that the borrower's loan amounts to two and a half times his income, which implies an annual income of £3,320.

†The method whereby net repayments are a fixed proportion of income is comparable with the others only in regard to the *proportion* of income which is spent on repayments.

‡The repayments in the first year under the real value mortgage are not very sensitive to the rate of inflation chosen, e.g. if the rate of inflation was 5%, the first year's repayment would be £524.

TABLE 7
First year's payment as proportion of income, in various schemes

Value of mortgage: £8,300
Mortgage rate : 12%
Term : 20 years

Type of mortgage	Gross payments		Net payments (after tax relief)	
	Amount	As percentage of income(a)	Amount	As percentage of income(a)
	£	%	£	%
Conventional	1,111	33	852	26
Real value, at 10% rate of inflation, 1·8% real rate of interest	549	17	406	12
Payments increase by fixed percentage each year:				
(i) 5% a year	801	24	593	18
(ii) 3% a year	919	28	680	20
Net payments are 15% of net income (b)	529	23	348	15

Note: (a) Income is assumed to be £3,320 in first year except in last row where it is assumed to be £2,320.

(b) Here the value of mortgage is £5,800.

Source: Appendix C, Tables.

TABLE 8
Comparison of amount of loan repaid, in various schemes

Value of mortgage: £8,300
Mortgage rate : 12%
Term : 20 years

Type of Mortgage	At end of year		
	5	10	15
	£	£	£
Conventional	732	2,022	4,295
Real value, at 10% rate of inflation, 1·8% real rate of interest	−2,162	−3,431	−1,571
Payments increase by fixed percentage each year			
(i) 5% a year	−762	−569	1,735
(ii) 3% a year	−169	514	2,856

Source: Appendix C, Tables.

VI. Possible Effects of the Alternative Methods of Finance

26. The likely effects of the alternative methods on price of houses, demand, cash flow of the building societies, lenders' security, and other effects are now assessed. The discussion of the effects of the alternative schemes on price, demand and cash flow of the building societies is necessarily based on the assumption that other things are equal—in particular it is assumed that the supply of funds to the building societies remains the same.

The price of houses

27. Firstly, the supply of loans is examined. If liquidity ratios are held constant, the supply of loans will be partly dependent on whether there is an increase in the net inflow of deposits to the building societies. Hence, if there was an increase in deposits, the building societies would lend the additional funds, unless they wished to see their liquidity ratios* increase. It is assumed here that there would be some increase in the supply of building society loans. Secondly, the demand for housing is considered. The particular demand function for housing stock that is assumed holds constant the size and structure of population. Demand is assumed to be a function of real personal disposable income, the size of household assets, the price of owner-occupied houses, the rents on local authority and other housing, the mortgage rate and the availability of finance. If the supply of building society advances increased, there would be a lag before it achieved its impact through increasing the demand for owner-occupied housing.†

28. Borrowers face an income constraint, because of the 'income' criteria of the building societies which were mentioned earlier. *Firstly,* it

*The liquidity ratios in recent years are in Appendix B, Table B6.

†Strictly speaking, a shift in demand is predicted only if the mortgage rate does not adjust often to clear the mortgage market. This is a plausible assumption, and means that the prime determinants of demand are relative prices, income and the availability of finance.

is necessary to consider the rule about the relation of income to loan repayments. Since the initial repayments are lower in the alternative schemes, many households who are at present excluded would now qualify. *Secondly,* there is the alternative rule about the ratio of loan to income. At first sight the new schemes do nothing to ease this. But the aim of the loan-income criterion is presumably to ensure that repayments are in a reasonable relationship with income. Thus, if the repayments in the early years of the loan were lowered, this rule might be relaxed.

29. Paragraphs 26 and 27 suggest that there would be an increase in the demand for owner-occupied housing, under the alternative formulae. In addition, there is a crucial and imponderable question regarding people's expectations under the alternative financing schemes. If borrowers had over-optimistic expectations regarding their future incomes, demand would be stimulated over and above what would be expected purely on the basis of ability to pay. There would also be an increase in demand if borrowers did not take fully into account the higher money repayments which they would be making in future years. For example, if borrowers make decisions about house purchase on the basis of the maximum initial repayment which they can afford, some might well purchase a higher priced house under the alternative schemes than under the present method.

30. In short, housing is a classic case of a market where the quantity supplied changes slowly, in the short-run at least, since it takes some time for new construction to become available, and the only other source of marginal supply is from conversions (leaving aside the possible interactions with the rented sectors). Therefore, other things being equal, the effect of increased demand in the short-run could be a rise in the relative price of houses—rather than an increase in quantity.* It is

*A concern about the effects of increased demand on house prices leads Foster and Whitehead (1973) to suggest that, while building societies could allow buyers who bought houses in recent years to reduce their payments for a short period (this loan being added to the capital which has to be repaid), such an option would not be offered to new borrowers. This is in order to obviate any incorrect expectations which could be formed about what buyers might afford.

important to recognise that this situation would arise unless there were a simultaneous increase in the supply of housing.* Given the rigidities in the market, there is no guarantee that the price effect would be moderated substantially in the long run. However, the effect on prices would depend on the level of capacity utilisation in the building industry. Furthermore, the effect on prices could be lessened if there were a limit placed on the absolute size of loan, and also through the effective operation of the certificate of reasonable value. In particular, a limited provision of non-conventional mortgages would be unlikely to have significant effects on prices.

Cash Flow of the Building Societies

31. Under the alternative schemes, the flow of funds to the building societies would decrease, other things being equal, since the initial mortgage repayments would be lower. This would affect the ability of building societies to make new advances, since capital repayments are new funds which can be used to make advances. Dowling (1973–74) shows that the building societies were more dependent in recent years on capital repayments in order to finance their mortgage advances. The deficiency in the cash flow could last about ten years, before repayments increased sufficiently. A rough estimate of the effects on the cash flow† is made using the average loan of £6,566 for mortgages which were approved in January-September 1975. Under the present system, for a twenty year term at a 12% rate of interest, there would be annual payments of £879 for this average mortgage. If it were converted to a real value mortgage, assuming a steady inflation rate of 10% a year, the repayments would begin at £434 a year. The resulting deficiency in cash flow to building societies would last until the eighth year

*Experience in European countries lends weight to this point—"This undesirable outcome (rises in construction and land costs) has been observed frequently in Member countries when financial or tax incentives to step up demand for housing have been adopted without complementary measures acting on the supply side". (OECD, 1974, p. 31).

†In order to estimate these effects precisely, data on the distribution of mortgages by length of term of the loan would be needed.

inclusive. The deficiency in cash flow would lower the liquidity ratio of the society (other things being equal). In the first year the deficiency in capital repayments would be £445 and this would be £415 in the eighth year. By the eighth year the cumulative shortfall in *total* repayments would be £2,069. The ability of individual building societies to absorb the effects of a reduction in cash flow need not reflect the aggregate liquidity ratio.

32. However, the scheme whereby a proportion of income is spent on net payments would have a different effect on cash flow. If the income of borrowers increase then the loans are paid off more quickly, thus this could compensate the building societies for at least some of the shortfall in receipts. Finally, all these predictions on the cash flow of building societies are based on the assumption that other things are equal, including the maintenance of the broad magnitude of the difference between deposit rates at the societies and at other savings media.*

Security and Lending Criteria of Building Societies

33. Under the alternative formulae the nominal debt which is outstanding could well increase in the early years. If this implied a greater risk to the lenders, then the building societies might impose stiffer lending conditions, or else they might operate with higher liquidity ratios. However, the risk is more accurately measured by the relation between the nominal debt outstanding and the value of the house which secures the loan. As long as the current market value of the house at least kept pace with the increase in the nominal debt outstanding, then the risk would be unaffected. First, consider the market value of the house: the data available on prices of second-hand houses indicate that they

*In order to counteract the reduction in the cash flow of building societies, Hughes (1975, p. 132) suggests a widening of the range of liabilities issued by building societies to include medium-term to long-term bonds, and the offering of different rates to investors who deposit funds for different lengths of time.

keep pace, at least, with the Consumer Price Index.* Second, the security would be affected by the increase in the nominal debt outstanding. In the example where the inflation rate is 10%, the greatest proportional increase in debt outstanding occurs in the first year (5·1%), and this rate of increase gradually declines in subsequent years.

34. The other variable which affects risk to the lender is the trend in the income of the borrower. This paragraph considers whether the security under the alternative formulae would depend on continual increases in money incomes, and indeed on increases in real incomes. Firstly, under the scheme where the net payments of the borrower are a fixed proportion of income, the risk of default in payments is evidently minimal. Secondly, in the case of the real value mortgage, which can be taken as representative of the other non-conventional formulae, the situation is not quite so clear. If a rate of inflation of 10% a year is assumed, and if the borrower's *money* income also rises at a rate of 10% a year, then the burden of *net* payments in relation to income, under the real value mortgage, would remain the same until at least half way through the term. Thereafter, this burden would increase somewhat. It must be recognised, however, that the burden of gross payments in relation to income would remain the same in each year (see Appendix C, Table C7).

35. A conclusion on lenders' security: the increase in the nominal debt is a weakness in the alternative schemes for two main reasons. First, from the point of view of lenders' security, the increase in nominal

†Admittedly, these data are not ideal for the purposes of this report: what is needed is the price 'history' of successive vintages of houses. The price index for second-hand houses over 1965–70 shows that these prices rose by 41%, which outpaced the rise in the CPI of 29% (source: QBHS). There is also an index of prices of semi-detached houses—derived from prices in newspapers—in Shanley and Boland (1972), which must be treated with great reserve since there is no indication of the extent to which the mix of houses in the sample changed over the years, and the sample may be non-random. The overlap between the two indices is the period 1968–70, when they give identical results. In the period 1967–71 the index in Shanley and Boland rose by 38%, which was again greater than the 33% rise in the CPI. There is now a new series produced by the Department of Local Government on the average price of second-hand houses for which loans were approved by building societies, and this shows that between 1973–74 and January-September 1975, the average price rose by 36%. This is exactly equal to the rise in the CPI in the same period.

debt would hardly affect a buyer who remained in the same house for 20 years. But for those who moved house a number of times, a short-run fall in house prices could affect the lender's security.* The second reason for concern relates to borrowers' resistance. Even if repayments as a proportion of income decline, there is likely to be reluctance on the part of borrowers to accept an increase in the nominal debt.† These considerations lead to the conclusion that the schemes of loan repayment where the nominal debt does not increase would be preferable—i.e., schemes where the first year's payment is at least equal to the interest payment.

Other Effects

36. One of the most obvious effects of an alternative scheme, offered by building societies, would be to reduce the demand for local authority loans. This situation would arise because the building society and the local authority loan markets are inter-dependent.‡

37. Finally, a number of possible effects on economic welfare and on resource allocation are considered. Firstly, it has been argued§ that the methods which result in a lower initial repayment lead to a net social gain, since they enable the real cost of housing to be borne in a manner preferred by households. This is based on the willingness of households to spend more on purchasing than on renting housing, and the acceptance by borrowers of a higher financial cost if the path of real payments over time is changed; this argument is based in turn on the fact that

*The average life of all mortgage loans in 1972 was 12 years (Cleary, 1974) which suggests that many loans are repaid well within the standard term.

†There is evidence that this can occur from the period when there was linkage of mortgage loans (which ended in 1967) in Israel: "(a) Commission found that linkage to the consumer price index created popular discontent because the debt itself increased and because mortgagors had not understood the increase that linkage would bring" (Robinson, 1971, p. 176).

‡For example, the experience of 1973-74: the advances of building societies declined, the limit on local authority loans was increased from £3,400 to £4,500 and the income limit on these loans was increased from £1,800 to £2,000. The amount of local authority loans almost doubled from £11 million in the financial year 1972–73 to over £21 million in 1973–74 partly because of these changes.

§Hughes (1974).

owner-occupiers spend a greater proportion of income on purchasing housing than do other households. Admittedly, owner-occupiers do spend a higher proportion of their income on housing than do other tenure groups.* But this does not in itself justify the case about a net social gain, since the owner-occupied and the local authority sectors are affected by subsidies,† and allocation of local authority houses is not done through the price system. Thus, nothing can be inferred about willingness to pay from figures on proportions of income spent on housing.‡

38. Secondly, it has been said§ that building societies would be prepared to change interest rates more often to remain competitive with other savings media, leading to less fluctuations in the net inflow of deposits at building societies. It is not possible to make a judgement on this issue given present data, and it would be facile to assume that any one instrument could result in an evening out of fluctuations in the net inflow. In any event, the aim is to achieve a stable level of advances,

and this partly depends on the extent to which fluctuations in the net inflow can be cushioned through changes in liquidity ratios. A thorough study of the means to achieve a more stable level of advances would have to consider the comparative merits of various policies. These would include, for example, a stabilisation fund whereby building societies would contribute to a reserve fund in periods of high liquidity, or the use of a greater number of investment outlets by the societies.

*For example, in 1965–66 those who owned houses with a mortgage devoted 11·3% of their expenditure to housing, compared with 6·7% for those who rent from local authorities, and 8·1% for all households (source: *Household Budget Inquiry* 1965–66, Table 4A). This cannot be explained by the fact that the owner-occupier households have a higher average income than those who rent houses, since the elasticity of housing expenditure with respect to income is about unity (Pratschke, 1969). But this leaves aside the question as to whether tastes differ between the sectors.

†It is not possible to reconcile the case that a net social gain results from increased owner-occupation *per se*, with the evidence from Rowntree and Social Survey studies that most of those who want to move—and one fifth of those who actually buy houses—would prefer to rent if they could find adequate housing (cited in Donnison, 1967, p. 262). There is also contrary evidence, cited in Wray (1969). Such statements are all of limited value since they reflect the mix of subsidies which are given to housing.

‡Ideally the change in consumer surplus should be estimated when dwellers move from the local authority sector to the owner-occupied sector, which gives the maximum amount which the tenants would be prepared to pay for owner-occupied housing.

§See Whitley (1974), who also holds that the allocation of resources should be less distorted due to a rise in the real rate of interest on house-purchase loans, consequent on the index-linking of building society interest rates. But this is a large assumption, which assumes the existence of a smoothly functioning price system.

VII. Summary and Conclusions

39. The real interest rate on mortgage loans is at present negative. However, the combined effects of increases in nominal interest rates and in house prices have resulted in an increase in real terms in the initial repayments on a mortgage taken out on a house of average price. Since 1968–69, there has been an increase in the average down-payment required on houses being purchased; this has been more pronounced in the case of houses financed through local authority loans. As a result of these trends both in the average deposit and in the annual repayments, it must have become increasingly difficult for those on lower incomes to finance house-purchase. However, for those who can finance a loan, the annual repayments, in real terms, decline significantly over the term of the mortgage (Section II).

40. The net inflow of deposits to building societies is quite responsive to relative interest rates on deposits. The magnitude of loan advances by building societies depends, in part at least, on the level of the net inflow. Furthermore, the level of building societies' advances and the level of non-local authority housing starts move in phase over the cycle (Section III). Hence, any instability in the net inflow can be transmitted to activity in housing construction, through variations in the level of building society advances.

41. In view of the increasing burden of debt-service and of size of down-payment in recent years, there is a need to consider ways of helping potential owner-occupiers who have relatively low incomes. In this regard, some alternative methods of mortgage finance, in which the initial repayments would be reduced by comparison with the present system, have been examined (Section IV). All these methods would reduce the impact of high interest rates on loan repayments in the early years of a mortgage. The *first* formula considered is the real value mortgage, whereby money repayments would begin at a lower level than under a conventional mortgage, and would increase over time at the rate of inflation. The *second* formula would embody repayments which rise by a fixed percentage each year (which typically would be lower than the rate of inflation). The *third* formula is a method which relates repayments after tax relief to the income of the borrower. Further variants on these three schemes are possible, e.g. payments could rise at a faster rate in the early years of a loan than in the later years. All the alternative methods would entail a significantly lower ratio of repayments to income of the borrower, in the early years of a loan (Section V).

42. The effects of these schemes on price and output in housing, and on the building societies, have been considered on the basis that the supply of funds to the building societies are held constant (Section VI). The principal effects are as follows. Firstly, the effects of the alternative schemes on the price of housing would depend on the volume of loans which were made, on the level of capacity utilisation in the building industry, and on the supply of housing. Given a limited volume of loans and a sufficient increase in the supply of housing, the effects on price should not be substantial. It is likely that an adoption of one of the alternative repayment schemes could result in a shift in the demand for housing from the local authority sector to the owner-occupied sector, and thus result in less pressure on local authority accommodation for rent. Secondly, if one of the alternative schemes was adopted, the cash flow of the building societies would decline, other things being equal, in the medium-term. Thirdly, the effects of trends in nominal debt, and in the income of borrowers, on the security of lenders were considered. It was concluded that there could be resistance on the part of borrowers to any increase in nominal debt.

43. It is not clear that loans under the alternative schemes would go to those borrowers who are at present unable to obtain mortgages. This is because the alternative schemes might not be altogether attractive to those first-time buyers with little assets and those with relatively low incomes, particularly if they had not firm expectations about the trend of their future incomes. By contrast, the borrowers who might be most attracted to these alternative schemes are likely to be those with the firmest expectations regarding future incomes. Many

of them could be intra-marginal borrowers, e.g. those who are on incremental salary scales.*

44. It is recommended that one of the alternative schemes be considered. Initially any alternative scheme adopted should be an *optional* one, available *on a limited basis* to new mortgagors. It would be desirable that in any alternative scheme which is operated, the nominal debt of the mortgagor did not increase—this implies that the first year's repayment would at least cover the interest on the principal. It also implies that the annual rate of increase in payments would be relatively low. In order to concentrate on borrowers who at present cannot obtain loans, and in order to lessen the impact on demand, any alternative scheme adopted should be restricted, either through an absolute limit on the size of the loan or through an upper limit on the income of the borrower (above which this option would not be available). A final point about the alternative formulae—in cases where a building society's criterion is based on the relation between the size of the loan and the borrower's income, this would need to be relaxed if those borrowers, whose incomes are at present too low, were to become eligible for loans. If one of the alternative schemes were accepted, it is neither likely nor desirable that many of the existing mortgages be converted to some type of real value mortgage. There could be legal and economic difficulties in making such conversions, and there would be a significant impact on the cash flow of the building societies.†

45. As mentioned above, it is preferable that the nominal debt of the borrower does not increase. But the alternative formulae which embody this principle would be of only marginal help to those for

*It is usually accepted that earnings increase with age over much of the life-cycle (Mincer, 1970). However, data for the UK show that there is a difference in the age-earnings profile between manual and non-manual workers. For male manual workers the peak is reached at age 30–39, but the profile is very flat once the 25–29 age band is reached. The profile for the male non-manual workers has a more positive slope, and peaks at age 40–49. (Source: New Earnings Survey for 1970: *Department of Employment Gazette*, January 1971.)

†If any of the alternative repayment schemes were adopted, careful consideration would have to be given to any practical problems facing building societies in implementing them, for example as regards frequency of change in nominal payments, or the option to reversion to the standard method of repayment.

whom debt service is a burden—although if interest rates were lower, an interest-only payment in the first year could be a significant reduction. Thus, there is need to consider other means of helping the potential owner-occupiers who have relatively low incomes, and of widening the choice which householders have at present. Some alternative means of doing this are as follows:

(i) An *option mortgage* scheme, whereby those borrowers, whose earnings are such that they are not eligible for income tax, could obtain a mortgage at a rate of interest equal to the gross rate net of tax relief. Thus, these borrowers would forego the possibility of future tax relief, in return for a reduction in the rate of interest. The building society would receive a subsidy equal to the interest foregone.

(ii) Alternatively, marginal purchasers could be facilitated through a reduction in the size of the down-payment that would have to be paid. This would be through the provision of 90 *or* 100% mortgages on a limited basis to households, subject to a minimum income criterion. Such an approach would make it easier for those households who have little accumulated savings and thus who are at present unable to afford the down-payment, to purchase a house. Even if a house-purchase loan were increased from the present maximum of 75% to 90%, the down-payment required in conjunction with a £7,000 mortgage would markedly decline—from £1,425 to £375. If the provision of 90 or 100 per cent mortgages resulted in an increased rate of default and in an unacceptable level of risk, then this problem could be met by a central insurance facility, which would cover the extra risk involved in providing these loans. Alternatively, any higher risk could be covered by a marginal increase in interest rates.

(iii) Another way to channel help to those with lower incomes would be to put an upper limit on the amount of mortgage obtainable on "cost-plus" terms, with any excess being financed at the typically higher market rates of interest.*

*See OECD (1974, p. 99).

46. There is a need for explicit building society criteria regarding the granting of loans: for example, through a points system. Such criteria should be solely related to the potential risk of default. For example, it is more difficult to obtain loans on older dwellings, and it is not clear that this is related to the risk of declining values of these dwellings. Similarly it is not evident that the difficulty which women face in obtaining a loan, and the partial allowance of their incomes are related to potential risk. In all of these cases there is scope for a central re-insurance facility, which would cover any differential risks involved in giving these loans.

47. Finally, there is the proposition that the index-linking of building society interest rates would lead to a dampening of the cyclical volatility of the net inflow, and thus of the variability in loan advances by the societies. A case can be made for measures which would lead to a steadier level of advances by the societies,* but this subject requires a fuller consideration of the alternative means of achieving this (Section VI). Stability in the building industry can aid the achievement of the dwelling needs which were outlined in the Council's earlier Report.

APPENDIX A

A measure of price expectations

This Appendix explains the data on price expectations in Table 1. Price expectations are not observed directly. A plausible assumption is that people's expectations are based on recent experience, where the most recent periods have the greatest effect. A standard method of computing a series on price expectations is to assume that over time people's expectations are continually adjusted in the light of their experience. The adaptive expectations hypothesis is that the expected price is revised over time in proportion to the difference between the actual price and the price which was formerly expected, i.e.:

$$PE(t) - PE(t-1) = a\{P(t) - PE(t-1)\} \qquad (1)$$

where $P(t)$ is the percentage change in the price level at time t and $PE(t)$ is the expected rate of change of prices at time t. This leads, by repeated substitution, to:

$$PE(t) = a \sum_{i=0}^{\infty} (1-a) P(t-i) \qquad (2)$$

Thus, price expectations are a weighted average of past rates of change of prices, where the weights decline, the more distant is the time period. This underlies the measure of expectations in Column (3) of Table 1, where i is arbitrarily set at 0·6 and the series is truncated after four years. This implies an average lag of 1·5 years.

*See Chart 2.

APPENDIX B

Statistical Tables

TABLE B1

Sources of Capital for New Housing, Financial years 1973–74, 1974

Category	Financial Year 1973–74	April-December 1974
	£ million	£ million
Public Capital Programme		
Local authority housing	32·0	31·5 (a)
House purchase and reconstruction loans from local authorities for private housing	20·0	27·3 (a)
Grants by State and by local authorities, and expenditure by State Bodies, for private housing	14·3	12·3 (a)
Private Sources		
Building societies	30·1	20·0
Assurance Companies	7·4	4·9
Other (b)	45·5	31·0
Total	149·3	127·0

Note:—(a) Preliminary.

(b) Principally these are personal savings, finance provided by banks, monies received from selling of houses. It is not possible to extract the loans provided by banks. The figures in this "other" category are approximate, since they are based (in the source) on data which are calculated as a residual.

Source:—Department of Local Government (1975), and equivalent in 1974; QBHS, quarter ended 30th September 1975; information from Department of Local Government.

Loans paid by building societies, 1966–75

Financial Year	Loans for new houses		Loans for other houses		Loans for all houses in real terms, at 1968–69 prices (b)
	Total	Loans by building societies as percentage of total loans paid(a)	Total	Loans by building societies as percentage of total loans paid(a)	
	£ million	%	£ million	%	£ million
1966–67	2·9	29·1	3·7	64·7	7·3
1967–68	4·9	39·0	4·9	67·4	10·3
1968–69	4·0	27·7	5·7	67·9	9·7
1969–70	4·6	25·4	6·8	70·7	10·8
1970–71	9·6	45·8	9·4	79·4	16·6
1971–72	16·5	54·1	14·2	83·2	24·2
1972–73	26·0	63·8	17·3	84·8	31·4
1973–74	30·1	52·6	15·7	76·5	27·4
1974:April-Dec.	20·0	38·3	10·2	63·6	14·9
1975: Jan-Sept.	22·3	42·0	22·0	76·0	20·0

Note: (a) The total is for building societies, assurance companies and local authorities.

(b) Deflator is the average gross price of new houses for which loans were approved by building societies. These data are not available for 1966–67 and 1967–68; for these years the CPI is used as deflator.

Source: QBHS.

TABLE B3
Private dwellings by nature of occupancy, 1961 and 1971

Nature of occupancy	1961 Percentage	1971 Number	1971 Percentage
	%	'000	%
Rented from local authority	18·4	112·7	15·5
Rented other than from local authority	17·2	96·9	13·3
Owner occupied	53·6	428·4	59·0
Tenant purchase or vested cottage scheme	6·2	71·2	9·8
Other	4·6	17·2	2·4
Total	100·0	726·4	100·0

Source: *Census of Population of Ireland* 1961, Volume VI, Table 16A;
Census of Population of Ireland, 1971, Bulletin No. 38, Table 7.

TABLE B4
Dwelling completions by tenure, 1966–1975

Financial Year	Local Authority dwellings for letting or purchase	Dwellings Completed with State aid(a)	Other (b)	Total	Local Authority dwellings for letting or purchase, as percentage of total
	'000	'000	'000	'000	%
1966–67	4·1	6·5	0·4	11·0	37·1
1967–68	4·0	7·5	0·5	12·0	33·7
1968–69	4·6	8·0	0·5	13·0	35·4
1969–70	4·7	8·4	0·5	13·6	34·5
1970–71	3·9	9·1	0·7	13·7	28·3
1971–72	5·1	10·1	0·7	15·9	32·1
1972–73	5·8	15·1	0·8	21·6	26·7
1973–74	6·5	17·8	1·0	25·4	25·8
1974 April–Dec.	4·6	12·9	0·8	18·3	25·3
1975 Jan.–Sept.	5·9	12·6	0·8	19·3	30·6

Note: (a) Dwellings completed with grants from Department of Local Government, and other State-aided dwellings.
(b) Conversions, and dwellings completed without grants.
Source: QBHS.

TABLE B5
Net receipts of building societies, 1970–1975

Year/Quarter	Net receipts (a)	Net receipts, deflated by CPI (mid-Nov. 1968 =100)
	£ million	£ million
1970: IV	1·9	1·6
1971: I (b)	–0·7	–0·6
II	6·2	5·0
III	7·6	6·0
IV	9·8	7·6
1972: I	8·4	6·4
II	10·1	7·5
III	9·4	6·8
IV	9·4	6·8
1973: I	6·6	4·6
II	10·8	7·3
III	12·2	8·0
IV	11·0	7·0
1974: I	6·5	4·0
II	7·2	4·1
III	7·6	4·2
IV	9·1	4·9
1975: I	11·9	5·9
II	20·8	9·7
III	19·8	9·3

Note: (a) Change in shares and deposits in the quarter, data include accrued interest.
(b) Affected by ending of banks' dispute, which led to an above-average withdrawal of deposits.
Source: QB.

TABLE B6
Building Societies' Liquidity ratios, 1968–1975

Date	Liquid assets (cash, bank balances and investments)	Liquid assets as a percentage of shares and deposits
(December each year)	£m	%
1968	7·8	15·3
1969	11·0	18·5
1970	20·0	24·8
1971	21·4	20·7
1972	28·6	20·3
1973	31·1	17·1
1974	45·1	21·3
1975 (June)	60·1	24·6

Source: QB.

Charts and Tables on Alternative Payment Systems

CHART C1

Mortgage of £8,300: money payments each year
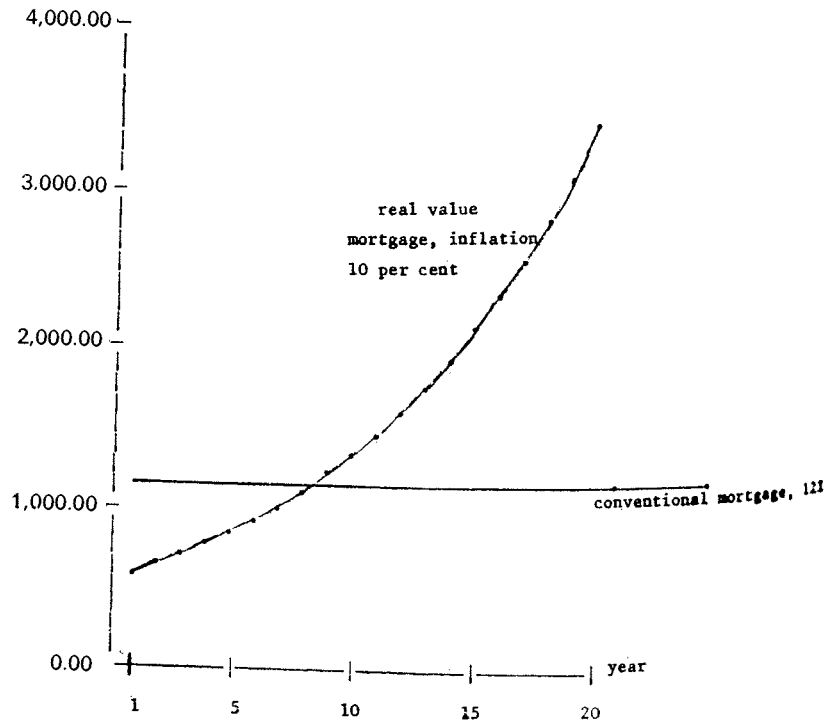
Source: Table C1, C2

CHART C2

Mortgage of £8,300: payments each year at constant prices (of the base year)
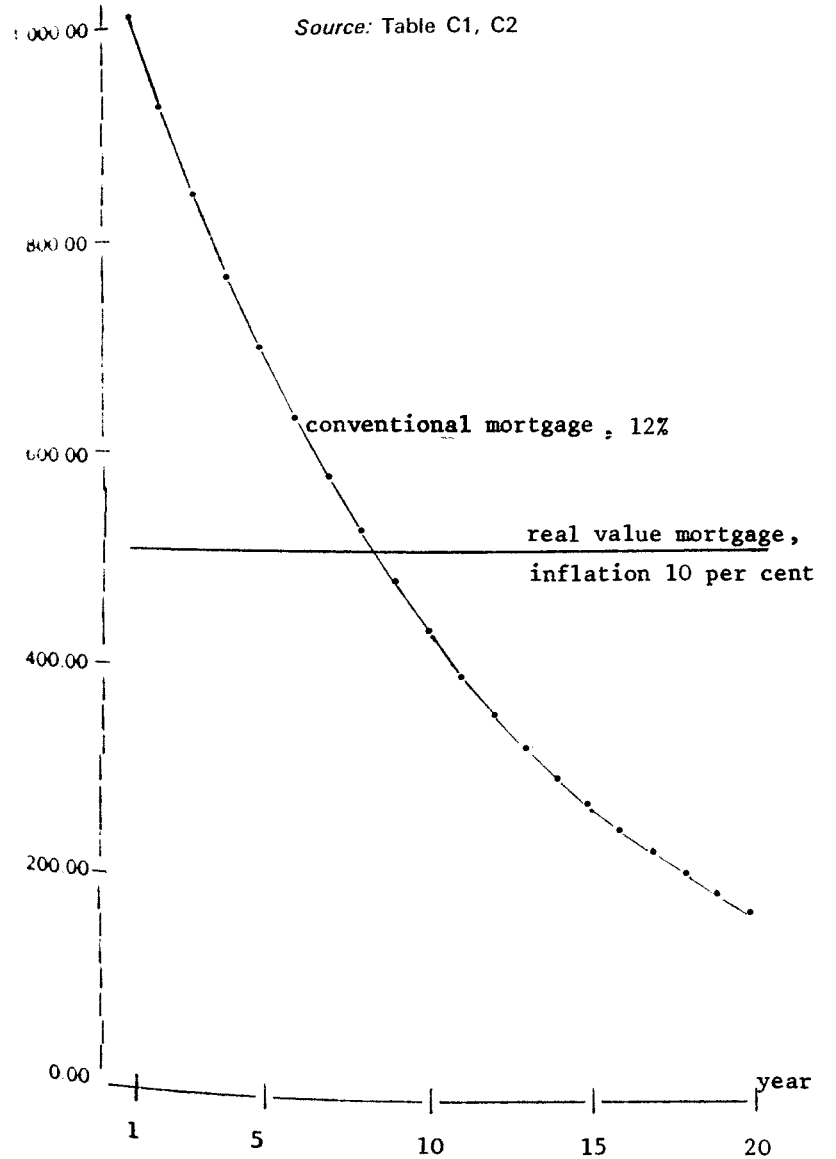
Source: Table C1, C2

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CHART C3

Mortgage of £8,300: debt outstanding in money terms

Source: Table C1, C2.
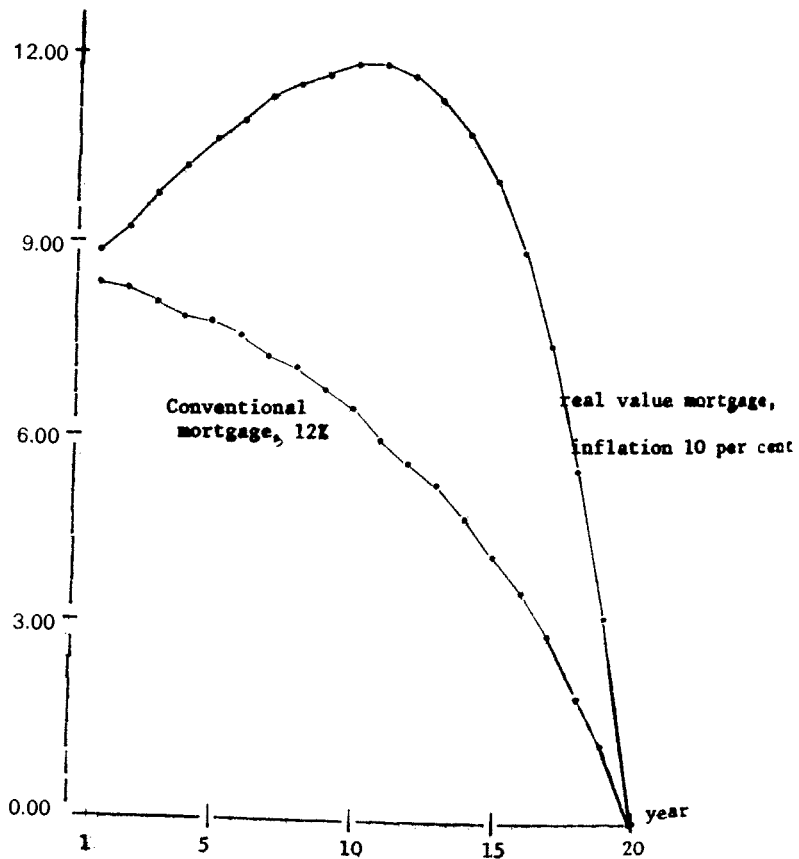

CHART C4

Mortgage £8,300: debt outstanding at constant prices (of the base year)
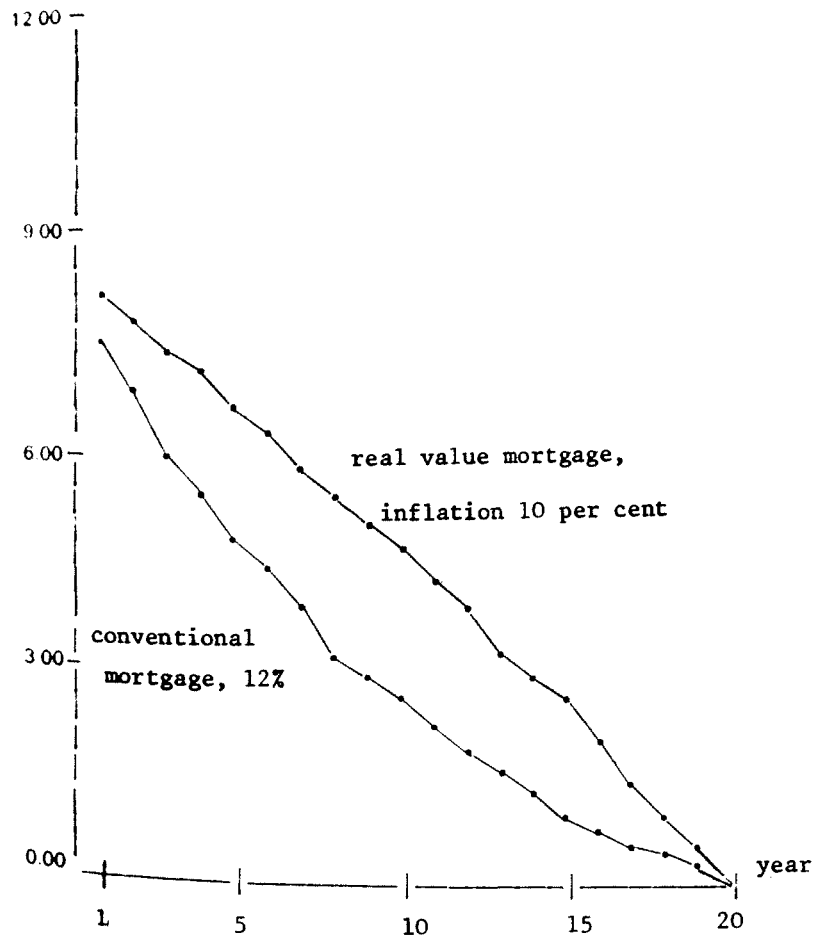
Source: Table C1, C2.

TABLE C1

Mortgage of £8,300 at 12%, under the present method

term: 20 years

Year	Payment	Net payment after tax relief	Capital outstanding	Capital outstanding at base year prices
	£	£	£	£
1	1,111	852	8,185	7,441
2	1,111	856	8,056	6,658
3	1,111	860	7,911	5,944
4	1,111	864	7,749	5,293
5	1,111	869	7,568	4,699
6	1,111	875	7,365	4,157
7	1,111	881	7,138	3,663
8	1,111	889	6,883	3,211
9	1,111	896	6,598	2,798
10	1,111	905	6,278	2,421
11	1,111	915	5,921	2,075
12	1,111	926	5,520	1,759
13	1,111	939	5,071	1,469
14	1,111	953	4,568	1,203
15	1,111	969	4,005	959
16	1,111	986	3,375	735
17	1,111	1,006	2,669	528
18	1,111	1,028	1,878	338
19	1,111	1,053	992	162
20	1,111	1,080	0	0

Present value of gross payments (discounted at 12%): £8,300.
Present value of net payments: £6,700.

TABLE C2

Mortgage of £8,300: real value

Term: 20 years
Real rate of interest: 1·8%
Rate of inflation: 10% per year
Nominal mortgage rate: 12%

Year	Payment	Net payment after tax relief (a)	Capital outstanding	Capital outstanding at base year prices
	£	£	£	£
1	549	406	8,747	7,952
2	603	447	9,194	7,598
3	664	491	9,633	7,237
4	730	540	10,059	6,870
5	803	594	10,462	6,496
6	884	654	10,834	6,116
7	972	719	11,163	5,728
8	1,069	791	11,433	5,334
9	1,176	870	11,629	4,932
10	1,294	957	11,731	4,523
11	1,423	1,057	11,715	4,106
12	1,565	1,200	11,556	3,682
13	1,722	1,361	11,221	3,250
14	1,894	1,544	10,673	2,811
15	2,083	1,750	9,871	2,363
16	2,292	1,984	8,763	1,907
17	2,521	2,248	7,294	1,443
18	2,773	2,545	5,396	971
19	3,050	2,882	2,994	489
20	3,355	3,262	0	0

Present value of gross payments (discounted at 12%): £8,300.
Present value of net payments: £6,600.
Note: (a) Calculations assume that tax relief is given on the interest which the borrower actually pays.

TABLE C3

Mortgage of £8,300: real value

Term: 20 years
Real rate of interest: 1·8%
Rate of inflation: 5% per year
Nominal mortgage rate: 6·9%

Year	Payment	Net payment after tax relief (a)	Capital outstanding	Capital outstanding at base year prices
	£	£	£	£
1	524	388	8,350	7,591
2	550	407	8,377	6,923
3	577	427	8,378	6,295
4	606	456	8,351	5,704
5	637	487	8,291	5,148
6	668	519	8,196	4,626
7	702	555	8,060	4,136
8	737	592	7,880	3,676
9	774	632	7,651	3,245
10	812	675	7,367	2,840
11	853	721	7,023	2,461
12	896	770	6,613	2,107
13	940	822	6,129	1,775
14	987	877	5,565	1,465
15	1,037	937	4,912	1,176
16	1,089	1,000	4,163	906
17	1,143	1,068	3,307	654
18	1,200	1,141	2,336	420
19	1,260	1,218	1,237	202
20	1,323	1,301	0	0

Present value of gross payments (discounted at 12%): £8,300.
Present value of net payments: £6,900.
Note: (a) See note (a), Table C2.

TABLE C4

Mortgage of £8,300: payments increase by 5% a year

Term: 20 years
Mortgage rate: 12%

Year	Payment	Net payment after tax relief (a)	Capital outstanding	Capital outstanding at base year prices
	£	£	£	£
1	801	593	8,495	7,722
2	842	623	8,672	7,167
3	884	654	8,829	6,634
4	928	687	8,961	6,121
5	974	721	9,062	5,627
6	1,023	757	9,127	5,152
7	1,074	795	9,148	4,695
8	1,128	842	9,118	4,254
9	1,184	900	9,029	3,829
10	1,243	962	8,869	3,419
11	1,305	1,029	8,628	3,024
12	1,371	1,102	8,292	2,642
13	1,439	1,181	7,848	2,273
14	1,511	1,266	7,278	1,917
15	1,587	1,360	6,565	1,572
16	1,666	1,461	5,687	1,238
17	1,749	1,572	4,620	914
18	1,837	1,692	3,337	600
19	1,929	1,824	1,809	296
20	2,025	1,969	0	0

Present value of gross payment (discounted at 12%): £8,300.
Present value of net payments: £6,500.
Note: (a) See note (a), Table C2.

TABLE C5

Mortgage of £8,300: payments increase by 3% a year

Term: 20 years
Mortgage rate: 12%

Year	Payment	Net payment after tax relief (a)	Capital outstanding	Capital outstanding at base year prices
	£	£	£	£
1	919	680	8,377	7,615
2	947	701	8,435	6,971
3	975	722	8,473	6,366
4	1,004	743	8,485	5,795
5	1,034	770	8,469	5,259
6	1,065	801	8,420	4,753
7	1,097	835	8,333	4,276
8	1,130	870	8,202	3,826
9	1,164	908	8,022	3,402
10	1,199	949	7,786	3,002
11	1,235	992	7,485	2,623
12	1,272	1,039	7,111	2,266
13	1,310	1,089	6,654	1,927
14	1,350	1,142	6,102	1,607
15	1,390	1,200	5,444	1,303
16	1,432	1,262	4,666	1,015
17	1,475	1,329	3,751	742
18	1,519	1,402	2,682	482
19	1,565	1,481	1,439	235
20	1,612	1,567	0	0

Present value of gross payments (discounted at 12%): £8,300.
Present value of net payments: £6,500.
Note: (a) See note (a), Table C2.

TABLE C6

Mortgage of £5,800, net payments equal to 15% of income

Mortgage rate: 12%

Year	Payment	Net payment after tax relief (a)	Capital outstanding	Income (b)
	£	£	£	£
1	529	348	5,967	2,320
2	569	383	6,114	2,552
3	612	421	6,236	2,807
4	658	463	6,327	3,088
5	707	510	6,379	3,397
6	759	560	6,385	3,736
7	816	617	6,335	4,110
8	876	678	6,220	4,521
9	940	746	6,026	4,973
10	1,009	821	5,741	5,470
11	1,082	903	5,348	6,017
12	1,160	993	4,830	6,619
13	1,243	1,092	4,166	7,281
14	1,331	1,201	3,335	8,009
15	1,426	1,322	2,310	8,810
16	1,526	1,454	1,061	9,691
17	1,188	1,155	0	10,660

Note: (a) Using a marginal tax rate of 26%. See Note (a), Table C2.
(b) Money income of median male (adult rates) in manufacturing industry in 1974 in year 1, assumed to increase by 10% a year.

TABLE C7

Payments-income ratio in real value mortgage:[*]
sensitivity to income changes

(Year 1 = 100)

Index	Year			
	5	10	15	20
Gross payments	146	236	380	612
Net payments	146	236	431	803
Gross payments as a proportion of income				
If incomes increase at:				
0% per annum	146	236	380	612
5% per annum	120	152	192	242
10% per annum	100	100	100	100
Net payments as a proportion of income				
If incomes increase at:				
0% per annum	146	236	431	803
5% per annum	120	152	218	318
10% per annum	100	100	113	131

*Where real interest rate is 1·8%, rate of inflation 10%—the case considered in Table C2.

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REFERENCES

Black, J. (1974), "A New System for Mortgages", Lloyds Bank Review, No. 111, 9–16.

Cleary, E. J. (1974), Building Societies in Ireland. National Prices Commission, Occasional Paper No. 14.

Cohn, Richard A. and Fischer, Stanley (1975), "Alternative Mortgage Designs" in New Mortgage Designs for Stable Housing in an Inflationary Environment. The Federal Reserve Bank of Boston, Conference Series, No. 14.

Department of Local Government (1975), Current trends and policies in the field of housing, building and planning: Ireland 1975 (mimeographed).

Donnison, D. V. (1967), The Government of Housing. London: Penguin.

Dowling, Brendan R. (1973–1974), "The Development of the Financial Sector in Ireland 1949–1972", Journal of the Statistical and Social Inquiry Society of Ireland, Volume XXIII, 57–102.

Evans, Alan (1974), "Suggestions for the reform of housing finance", in: Centre for Environmental Studies, Papers from the Urban Economics Conference 1973, Volume 1. London: Centre for Environmental Studies.

Foster, C. D. and Whitehead, C. M. E. (1973), "Mortgages", New Society, 20 September, 1973.

Hirsch, Fred (1973), The Guardian, 4 September, 1973; 29 October, 1973.

Hughes, G. A. (1974), Inflation and Housing, London: The Housing Research Foundation.

Hughes, G. A. (1975), "New Approaches in Housing Finance", in: Institute for Fiscal Studies, Housing Finance.

Mills, G. (1965), "Housing mortgages in an inflationary and growing economy", Bulletin of the Oxford University Institute of Economics and Statistics, 135–149.

Mincer, Jacob (1970), "The Distribution of Labour Incomes: A Survey", Journal of Economic Literature, Volume 8, pp. 1–26.

Modigliani, Franco (1974), "Some economic implications of the indexing of financial assets with special reference to mortgages". (Mimeo). Forthcoming in Proc. of Conference on The New Inflation.

NESC (1975a), Income Distribution: A Preliminary Report. Dublin: Stationery Office.

63

NESC (1975b), *Population Projections 1971–86: The Implications for Social Planning—Dwelling Needs*. Dublin: Stationery Office.

National Economic Development Office (1972), *Low-start Mortgage Scheme*. London: National Economic Development Office.

Pratschke, John L. (1969), *Income-Expenditure Relations in Ireland 1965–66*. ESRI Paper No. 50.

OECD (1974), *Housing Finance: Present problems*. Paris: OECD.

OECD (1975), *Flexibility in Housing Finance*. Paris: OECD.

Richardson, Harry W., Vipond, Joan and Walker, J. B. (1971), *The Finance of House Purchase* (Mimeo). University of Kent at Canterbury: Centre for Research in the Social Sciences.

Robinson, Harold (1971), "Readjustable mortgages in an inflationary economy—a study of the Israeli experience", *International Law and Economics*, Volume 5, 169–184.

Shanley, L. P. and Boland, T. (1972), *Report on New House Prices*. National Prices Commission, Occasional Paper No. 2.

Whitley, J. D. (1974), "Mortgages: The Case for Index-Linking", *National Institute Economic Review*, No. 70.

Wray, Margaret (1968), "Building Society Mortgages and the Housing Market", *Westminster Bank Review*, February 1968, 31–45.

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