

Sectoral and national savings

This Appendix presents an analysis, conducted by the Pensions Commission, of trends in sectoral and national savings. It responds to several comments made in response to the First Report, which suggested that different conclusions might be reached if the Commission focused on total household or total national savings rather than pension savings alone. [See Figure C.1 for a summary of some of these comments.] In fact Chapter 5 of the First Report did look at the **stock** of household sector wealth held in non-pension financial assets and houses. But it did not present an integrated analysis of all categories of saving **flow** including those by non-household sectors.

This Appendix therefore now presents an integrated analysis of all categories of national saving. It is intended as a stimulus to discussion, and as an exploration of some difficult issues of interpretation. The tentative conclusions, proposed for debate, are set out in Figure C.2.

The Appendix is structured in six sections:

1. The relationship between sectoral and national savings: theory and the overall present position
2. Aggregate national savings and pension adequacy
3. Apparent long-term trends in sectoral and national savings
4. The economic meaning of equity value increases in excess of aggregate net savings
5. Household financial savings, pension and non-pension: some key trends
6. Household saving in houses: capital investment and price appreciation effects

Three annexes covering technical issues are available on the Pensions Commission's website (www.pensionscommission.gov.uk: Sectoral and National Savings Discussion Paper). They cover:

- Annex A: Understanding the external position
- Annex B: Complexities in the measurement of the corporate savings rate
- Annex C: Response to specific points made by Tim Congdon

1. Sectoral and national savings: theory and present position

The UK's gross national saving represents the extent to which, in any given year, the UK does not consume that year's GNP, but saves it, either via investment in the UK or via the acquisition of a claim on the rest of the world. National savings mathematically equals household saving plus corporate saving plus general government saving [Figure C.3].

Figure C.4 sets out the figures for gross savings for the three sectors and at the national aggregate level in 2002, with a gross national saving of £156 billion in 2002. Figure C.5 shows the derivation of net saving (gross savings minus capital consumption) and of "net lending", the financial balance of each sector given by gross saving minus investment. The minus £17 billion for the national net lending figure in 2002 represents the fact that in 2002 the rest of the world sector net acquired £17 billion of claims on the UK.

Figure C.1 Comments received on the savings analysis in the First Report

- Analysis of aggregate national savings would reveal long-term adequacy and therefore prove individual rationality in savings decisions.
- Analysis of aggregate national savings would reveal that the problem of inadequate savings is worse than first appears because of government dis-saving.
- Personal sector total wealth is now higher than ever: therefore any inadequacy of pension saving must be being offset by non-pension saving.
- Saving via the accumulation of housing assets could create adequate consumption in retirement resources for many people.
- Measured national savings underestimate real economic savings since an increasing proportion of economic investment (e.g. in R&D and know-how) is not captured in accounting measures.

Figure C.2 Some possible conclusions

- It is not possible to draw strong inferences about the adequacy of savings for retirement from the level of the aggregate national savings rate...
- ... but trends in the rate are likely to carry implications for trends in savings for retirement adequacy [See Section 2].
- The UK **gross** national rate may be on a slight downward trend but the **net** savings rate appears trendless with capital consumption trending down [See Section 3].
- Over the last 25 years UK households have enjoyed significant "wealth accumulation without saving" as a result of equity price appreciation unexplained by capital investment: but this effect is unlikely to repeat in the future [See Section 4].
- If there is a deficiency of household pension saving, it is not being offset by household direct accumulation of claims on corporate capital [See Section 5].
- But what has occurred in the last 25 years is a steady increase both in household debt liabilities and in household cash (and equivalent) assets with, effectively, increased financial flows from one part of the household sector to another (via banks and building societies) [See Section 5].
- This increase in household to household lending has arisen from and is dependent on the increased value of housing assets relative to GDP, which in turn has implications for the design of optimal pension policy, even though it derives (primarily) from price appreciation effects which (rightly) do not appear in national accounts measures of household sector or national saving [See Section 6].

Figure C.3 National saving and sectional saving

- Household sector saving (pension and non-pension)
- +
- Corporate sector saving (non-financial corporate and financial corporate)
- +
- General government saving
- =
- National saving

Figures C.4 and C.5 show significant gross saving by the household sector but also significant investment; this is primarily in residential housing. They also show that the biggest gross saving figure is in the non-financial corporate sector, matched by investment in productive business capital. And they show that in 2002 government was a significant dissaver at the net savings level. But it is important to understand that **all** wealth is ultimately owned by the household sector, and that all saving/dissaving is ultimately on behalf of the household sector. Government dissaving creates a liability which the household sector will eventually have to pay for through taxes; and corporate saving accrues to the benefit of the household sector, since it increases the value of corporate capital held by households even when households make no new acquisitions of corporate capital [Figure C.6]. Provided a number of equilibrium conditions apply [Figure C.7] and in a closed economy, any change in household wealth held in corporate capital which is not explained by household net acquisition/sale of corporate capital must be exactly explained by corporate sector net saving done on the household sector's behalf.

It would thus be possible in a closed economy in equilibrium to think about the UK's wealth holding and savings patterns as taking the form shown in Figure C.8.

- The household sector owning, directly or indirectly, two ultimate forms of wealth: the housing stock and the capital resources of companies (represented in real terms by buildings, machines, brands, patents etc. and in financial terms by equities and bonds).
- The household sector saving/investing via net investment in housing or via net investment in corporate capital.
- And different groups within the household sector lending and borrowing to one another (via financial institutions), with the value of housing used as security.

This model captures the essence of the savings process, and is a useful one to keep in mind in trying to make sense of the multitude of different figures available. But it is complicated in the real world of open economies and disequilibrium conditions by three factors:

- First, that for the last 25 years the claim on the value of the corporate sector has increased far faster than can be explained by the combination of household net acquisition of corporate capital plus corporate net saving on the household's behalf [see Section 4 below]. The household sector has as a result got richer much faster than can be explained by measured savings captured anywhere in national accounts.
- Second, a similar effect has been seen in housing, with the market value of residential housing rising far faster than can be explained by net new capital investment in housing [see Section 6]. Again households have got richer faster than can be explained by measured saving.

Figure C.4 Sectoral and national saving: 2002 £ billion

	Households	Non-financial corporations	Financial corporations	General government	National
Gross operating surplus and property income		261			
- Distributed income		-135			
- Taxes		-25			
Gross disposable income/ total resources*	735	101	21	210	1057
Final consumption	-692		-11	-209	-901
Gross saving	43	101	10	2	156

Source: Blue Book

Note: *Figure shown is after the reallocation of pension fund saving to household sector i.e. total resources.

Figure C.5 Gross saving, net saving and capital investment: 2002 £ billion

	Households	Non-financial corporations	Financial corporations	General government	National
Gross savings	43	101	10	2	156
- Capital consumption	-36	-65	-4	-10	-115
= Net saving	7	37	6	-9	41
Gross saving	43	101	10	2	156
+/- Other	3	3	0	-5	1
- Capital investment	-50	-103	-7	-15	-174
= Net lending +/-	-4	0	3	-17	-17

Source: Blue Book

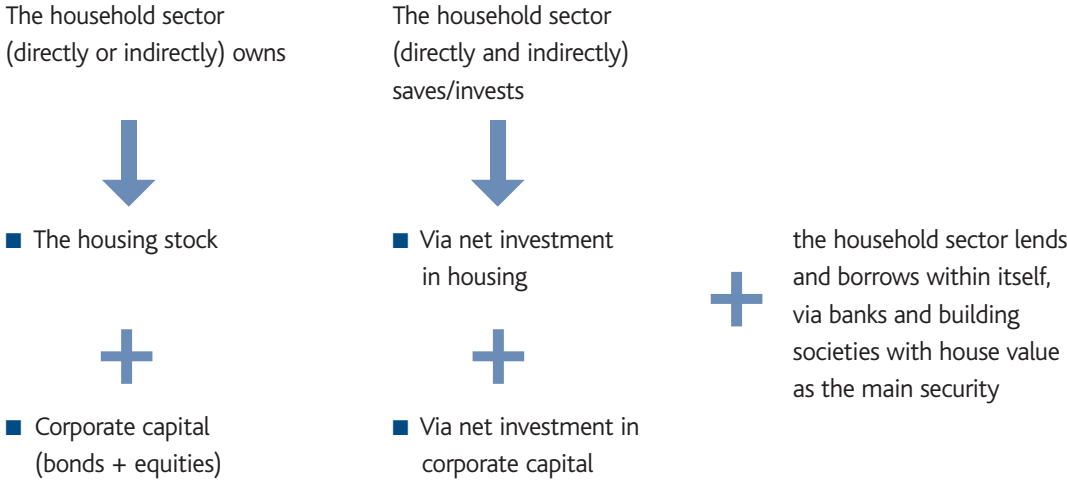
Figure C.6 Understanding corporate saving and household wealth

- All wealth ultimately belongs to people: government wealth in a collective sense, but corporate wealth in an individual property claim sense.
- Saving by the corporate sector must therefore increase household wealth in some way.
- The route is that:
 - Net saving by corporations increases the retained wealth of companies, and thus the market value of companies.
 - It does not show up in the income, gross saving, or capital investment of households.
 - But it delivers to households unrealised capital appreciation, so that on average the value of equities held (in pension funds or outside) rises by more than the next acquisition of equities.

Figure C.7 Corporate sector net saving and equity price appreciation: equilibrium conditions

- If all "investment" which increases the value of a company is covered by the accounting definitions of "capital investment"...
- ... and if "capital consumption" correctly captures the investment needed to keep the value unchanged...
- ... and if all net saving exactly earns the rate of return which shareholders expect/require...
- ... then the market value of equities equals the book value (Tobin's $Q=1$).
- And the change in market value each year equals the change in book value which is the net savings.
- So that corporate sector net savings equals unrealised capital gain by the household sector.

Figure C.8 Wealth holdings in a closed economy in equilibrium



- Thirdly, in an open economy there are a complicated set of claims by the various UK sectors on the rest of the world, and by the rest of the world on the UK sectors.

Sections 4 and 6 explore the complexities created by share price and house price appreciation; Annex A (available on the Pensions Commission's website) explains some key trends in the external accounts which need to be understood if misinterpretations are to be avoided. But before turning to these complexities, Section 2 considers what inferences for pension adequacy can and (crucially) **cannot** be drawn from aggregate national savings analysis. Section 3 then considers the apparent long-term trends in sectoral and national savings.

2. Pension adequacy and aggregate national savings

This section considers what implications for pension system adequacy can and cannot be inferred from analysis of the national aggregate savings rate. It makes the following points:

- (i) All forms of saving need to be considered in assessing the adequacy of resources for retirement.
- (ii) Whether saving for retirement is "adequate" cannot be inferred directly from analysis of the **level** of the aggregate national savings rate. Analysis of the "adequacy" of a pension system can only proceed via bottom-up analysis of the savings stocks and flows of specific groups of people.
- (iii) An argument can however be made that a low savings rate may make political conflicts over future income distribution, and in particular over the taxation/generosity balance with the state PAYG system, more severe. How far this is true depends on how pensioners define income "adequacy" in retirement.
- (iv) But trends in the national savings rate are likely to carry some implications for trends in pension adequacy.
- (v) And analysis of the implications for the national savings rate is a useful discipline in assessing proposals for pension policy changes.

(i) Pension and non-pension savings equally relevant

"Pension" saving is simply that element of total saving which happens to occur within the legal form of pension funds or pension policies (and which because taking that legal form benefits from pensions-specific tax rules). But accumulated "pension" saving is no more valuable as a potential source of "consumption in retirement" resources than any other form of savings accumulated by the time of retirement. It is therefore clear that we should analyse all forms of savings (direct and indirect) through which households can accumulate assets: pension savings, non-pension financial savings, and real assets (in particular houses).

In the rest of this section we will therefore refer to "savings for retirement" to cover all forms of savings which individuals accumulate and which they could draw upon during retirement.

(ii) The level of national savings and the adequacy of savings for retirement

There is no way to infer the adequacy of savings for retirement directly from the level of national savings. To understand this we start with definitions:

- National savings represents the aggregate national excess of current income (GNP) over current consumption. Positive net national savings (after capital consumption) increase the capital stock and, in combination with technological progress, deliver increased GDP. The national savings level captures the combined effect of savings by or on behalf of some households and dissavings by or on behalf of other households.
- "Savings in retirement" represents the accumulation of assets by people of working age. These savings are then to a degree decumulated during retirement providing consumption in retirement resources.¹ For the individual who leaves no bequeathal indeed, dissavings in retirement exactly equal savings during working life. Such a person has no net savings across the whole lifecycle, but may still have a perfectly adequate pension.

Given these definitions, there are three reasons why the **level** of national savings has no necessary implications for the adequacy of pension savings.

- First, it is at least theoretically possible for an economy to have a nil net savings rate but to have a quite adequate system of funded savings for retirement (and thus no requirement for a PAYG system). Such an economy would typically be a zero growth economy (since the capital stock would not increase). But workers could be significant net savers, accumulating savings for retirement throughout working life, and then selling off these accumulated assets to the next generation of workers

¹ More precisely pensions actually derive from the combination of asset decumulation plus investment income earned on the remaining asset balance.

during retirement. The zero adequate savings rate could be the sum of perfectly "adequate" net savings by workers matched exactly by the dissavings of retirees.

If we introduce growth in GDP and in incomes the model gets more complex. Accumulation by workers now exceeds decumulation by retirees thus producing the positive national savings required to deliver a growing capital stock. But it remains the case that the total scale of savings for retirement (the accumulation by workers) will greatly exceed aggregate national savings. And the potential adequacy of "savings for retirement" depends more on the size of the capital stock which can be bought by workers and sold by retirees, than by the flow of net savings in any particular period.

- Second, it is **possible** that the capital stock which is bought by workers and sold by retirees can increase relative to national income even if there is no net national saving. This can for instance occur via the route discussed in Section 6, an increase in the price of houses unexplained by net investment in housing. This increase does not represent national savings in either accounting or real economic terms², but it may well mean that workers devote increased resources to the purchase of houses while retirees can achieve higher retirement incomes through the sale of houses (either those that they themselves purchased or those that they inherit). Gross workers' saving devoted to the purchase of housing assets can thus rise, but with no increase in the national savings rate, because there is matching decumulation by retirees.
- Third, conversely, it is clearly possible for a high national savings rate to co-exist with inadequate savings for retirement for many people, since some people may save more than adequately for retirement while others save inadequately.

For all these reasons it is impossible to infer from the level of national savings whether a system of savings for retirement is "adequate". A low savings rate country could, at least theoretically, have a workable and stable system of inter-generational resource transfer based on the accumulation and decumulation of either corporate capital or houses; and a country with a high savings rate could have a high proportion of the population making inadequate funded provision for their retirement, with savings very unevenly distributed.

² See Gale and Sabelhaus, "Perspectives on the Household Saving Rate", Brookings Papers on Economic Activity 1: 1999, for a discussion on this and other complexities in the measurement of saving.

The only way to measure the “adequacy” of “savings for retirement” by the current generation of workers is therefore on a bottom-up basis, analysing for different groups of people the stocks of assets (of all types) already accumulated, the flows of savings (of all types) occurring, and likely accumulated funds available at point of retirement.³

(iii) A low savings rate may increase future political tensions

An important counter-argument can however be made that the level of the savings rate matters because of its effect on the growth rate, and because a higher growth rate ameliorates political conflicts over the distribution of income. An increased national savings rate, by increasing the capital stock, can increase future productivity and thus GDP. Not all the benefit of this future GDP growth will flow to providers of capital: some will flow to future workers, who will enjoy higher wages, and to future government tax revenues. The total economic cake out of which retirees can receive state PAYG pension is therefore increased: any given real pensioner income can be afforded at a lower tax rate on workers: or for any given tax rate on workers a better real value PAYG pension can be afforded. Conversely a low savings rate means less future resources and therefore greater conflict.

An article in the National Institute Economic Review 2005 (“Are we saving enough?”) illustrated this argument. It argued that a net national savings rate of 5.0%, combined with a capital stock of 4.28 times Net Domestic Product, implied that in the long-term the UK economy could only grow at 1.2% real per year. Therefore (even absent any demographic effects on dependency ratios) unless pensioners are willing to accept only 1.2% per year real growth in pensioner incomes between this generation and the next, there are political problems ahead: either unhappy pensioners, or unhappy workers on whom pensioners (via their voting power) will impose increased taxes.

³ Note however that any such analysis is crucially dependent on the assumptions made as to (i) the level of income replacement that people will consider adequate (ii) the age at which they retire (iii) the rate of return on investment.

The validity of this argument, and thus of the assertion that an increased national savings rate is required to ameliorate future pension problems depends on whether assessments of pension income adequacy are determined by reference to real income during life (plus some desired absolute level of growth) or to the average level of income in society when people reach retirement [Figure C.9].

- If the former then a more rapid rate of growth clearly eases pension adequacy problems: retirees can feel adequately provided even if the percentage of GDP flowing to retirees falls since the denominator (GDP) rises.
- If the latter case (adequacy defined relative to average incomes) more rapid GDP growth does not ease any perceptions that provision is inadequate.

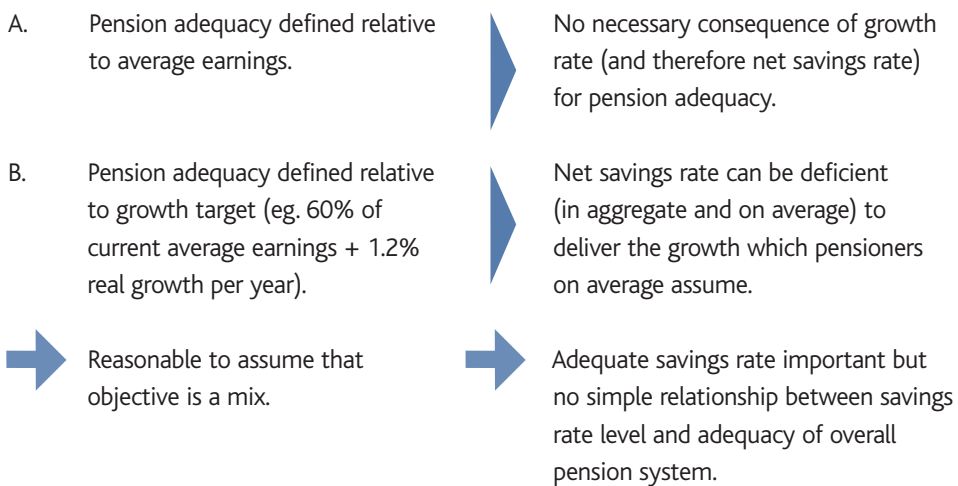
The issue of the definition of adequacy was discussed in Chapter 4 of the First Report: it is relevant to the debate on whether state pensions should be earnings indexed during retirement or price indexed. A reasonable judgement is that perceptions of adequacy probably lie between these two extremes: if they do then a higher rate of growth does to a degree mitigate pension inadequacy problems. It is noticeable for instance that countries which have achieved very high rates of GDP growth (e.g. Ireland in the last few decades) seem able to deliver pensions which many individuals consider “adequate” even while keeping pension expenditure as a percentage of GDP very low: pensioners have high real incomes relative to expectations determined by their own lifetime earnings, even though low relative to the general level of prosperity now achieved. But while this suggests that in general a higher rate of national savings and thus of GDP growth must help avoid tensions in the state pension system, it still leaves us with no straightforward way to infer overall pension system adequacy (covering both the PAYG and funded elements of the system) from the level of the national savings rate.

(iv) Trends in national savings rates relevant to pension adequacy debates

While however there is no straightforward way of inferring savings for retirement adequacy from the **level** of national savings, it is **likely** that **trends** in the national savings rate do carry some implications for trends in the adequacy of savings for retirement. An increase in the national savings rate is one possible element in the response to the demographic challenge. It can however produce disadvantages if pursued too far.

In our First Report we talked of four possible responses to rising life expectancy and a rising dependency ratio: a fall in relative pensioner incomes, a rise in taxes, a rise in the retirement age or a rise in savings. If the fourth option is taken, the current generation of workers will sacrifice current consumption in working life to deliver a higher level of total consumption in retirement than enjoyed by previous generations (i.e. where total real consumption in retirement is the annual rate of real consumption multiplied

Figure C.9 Definition of pension adequacy: implications for the importance of the aggregate savings rate



by more years). This increase in accumulation by workers will clearly deliver an increase in total national savings in the short-term, and may, under certain conditions, increase it in the long-term.

- In the short-term the total national savings rate will rise because worker accumulation has already risen, while increased retiree decumulation lies in the future.
- In the long-term, the total national savings rate **may** stay higher because each subsequent generation of workers may also have a higher accumulation savings rate, and while the total retiree decumulation rate will also increase, in a growing economy the former effect outweighs the latter. (The total capital stock/GDP ratio will also increase to a new level and the aggregate net savings rate required to maintain this higher equilibrium level will increase.)
- The caveat "may" is included however because the long-term effect is dependent on the preferences of the future workers i.e. on how the next generation of workers choose to make the trade-off between savings levels, retirement age and income in retirement. And it is possible that one generation which seeks to save its way to adequate income over a longer retirement, is followed by another which prefers to work later rather than save more. If this occurs the attempt of the current generation to save its way to prosperous and longer retirement may be frustrated by the next generation's low demand for assets. The lower relative income option will then come about by default.⁴

This caveat does not however change the conclusion that a rise in the national savings rate will (in a growing economy) be the inevitable consequence of any solution to a problem of inadequate pension provision which avoids higher retirement ages or higher taxes.

Conversely if the aggregate national savings rate is falling, it is **likely** that problems of inadequate savings for retirement are increasing. A falling aggregate national savings rate could arise **either** (i) because accumulations by current working-age people were falling; this would tend (subject to its precise distribution) to increase any problems of inadequate pension provision; or (ii) because net decumulations by existing retirees were increasing. This would however reduce inheritance receipts by the current working generation, again therefore reducing aggregate resources potentially available for consumption in retirement.

It is therefore valuable to analyse (as we do in Section 3 of this Appendix) the trend in the national savings rate, and to draw possible references of that trend for the number of people with inadequate savings for retirement, even if the level of the aggregate national savings rate can tell us little about the

⁴ See Adair Turner "The Macroeconomics of Pensions" lecture to the Actuarial Profession September 2003 for a more detailed analysis of this possible effect.

absolute scale of the problem. And it is the case that an increased national savings rate is one possible response to the demographic challenge of increased life expectancy.

One potentially negative effect of too large or rapid an increase in the national savings rate should however be noted. An increased rate of aggregate national savings **may** have negative consequences for the rate of return achieved. This would be the case in a closed economy since, everything else equal, an increase in capital/labour ratio will tend to decrease the return to capital and increase the return to labour. Such an effect could however be significantly mitigated in an open global economy, in which the additional savings could be invested outside the country. But if other countries are also simultaneously attempting to save their way to prosperous longer retirements, the falling rate of return effect could apply at the global level. Appendix B of the First Report described published analyses of these issues and estimates of the possible scale of any return reduction effects. It concluded that it was extremely difficult to produce precise convincing estimates, but that directionally there must be some tendency for higher savings to be associated with lower returns. This argues for caution against relying entirely on an increase in savings as the only response to the demographic challenge.

(v) Analysis of national savings rate effects: a useful discipline

As discussed above, analysis of trends in the national savings rate can provide useful though imperfect indications as to whether savings for retirement by the current working generation are rising in response to the demographic challenge: they provide a double-check against the bottom-up analysis (also imperfect because of data problems) which must be the key route to assessing the “adequacy” of saving for retirement.

But analysis of aggregate national savings, and in particular of the combined effects of changes in the household and government savings rates is also useful to guard against “free lunch” fallacies, i.e. policies which might appear to provide responses to the demographic challenge but which on closer inspection do not. Thus, for instance, the economic impact of any proposal to switch from an unfunded PAYG scheme to a funded scheme needs to allow for the impact on public finances. If the switch involves the government foregoing tax/NI revenue but maintaining state pension payments to the existing generation of pensioners, there will be no increase in national savings, since increased public debt will offset the additional funded savings. Only if the switch involves someone sacrificing current expenditure (e.g. by having to pay both PAYG contributions and new contributions to a funded scheme) will additional future resources to support consumption in retirement have been created.

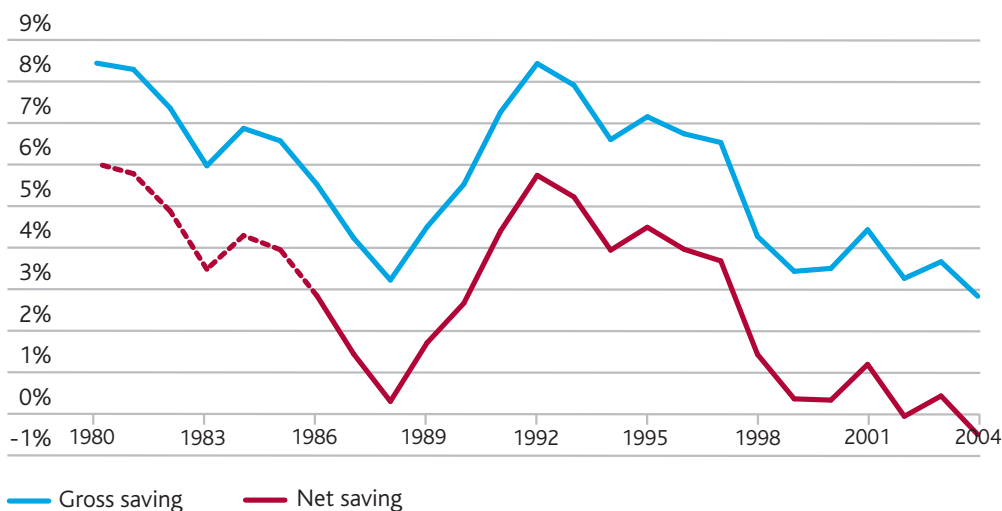
3. Sectoral and national savings: apparent long-term trends

Over the last 25 years, household sector gross and net saving (combining pensions and non-pensions, financial assets and housing assets) have oscillated significantly, but some commentators would argue that the underlying trend is down, with very low rates sustained over the period since 1999 [Figure C.10].

Corporate net saving, conversely, has if anything been on a slight upward trend, with corporate gross saving apparently trendless, but with the accounting measure of “capital consumption” on a steady downward path as a percentage of GDP [Figure C.11].

General government saving meanwhile has been highly cyclical, and at least in the late 1980s and early 1990s inversely related to household savings [Figure C.12].

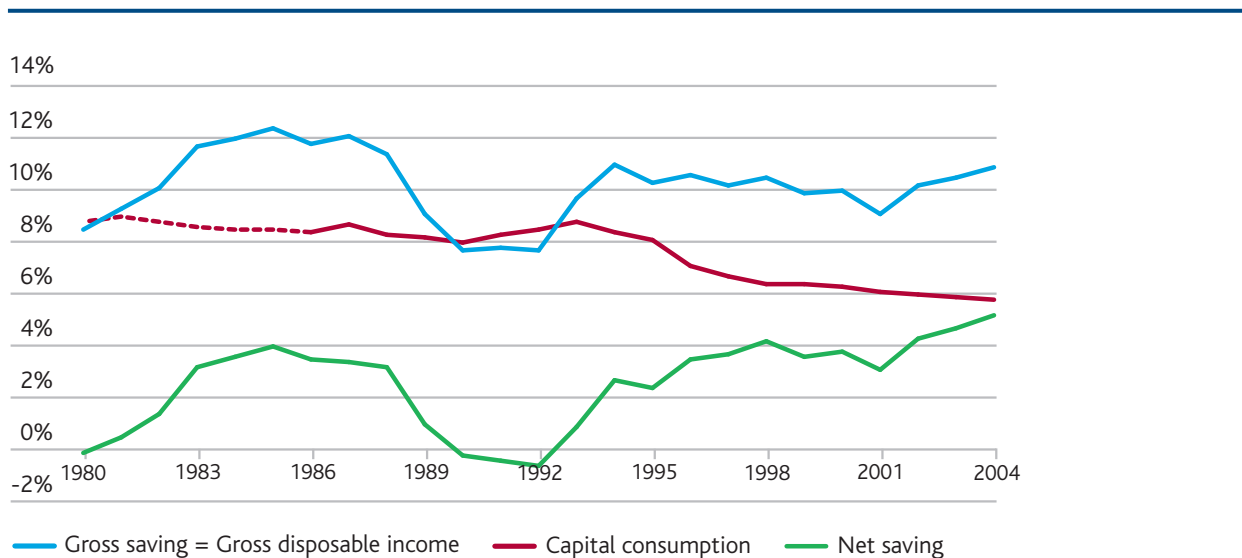
Figure C.10 Household gross and net saving as a percentage of gross national disposable income: 1980-2004



Source: Blue Book

Note: Net saving figures prior to 1987 have been estimated using other household data.

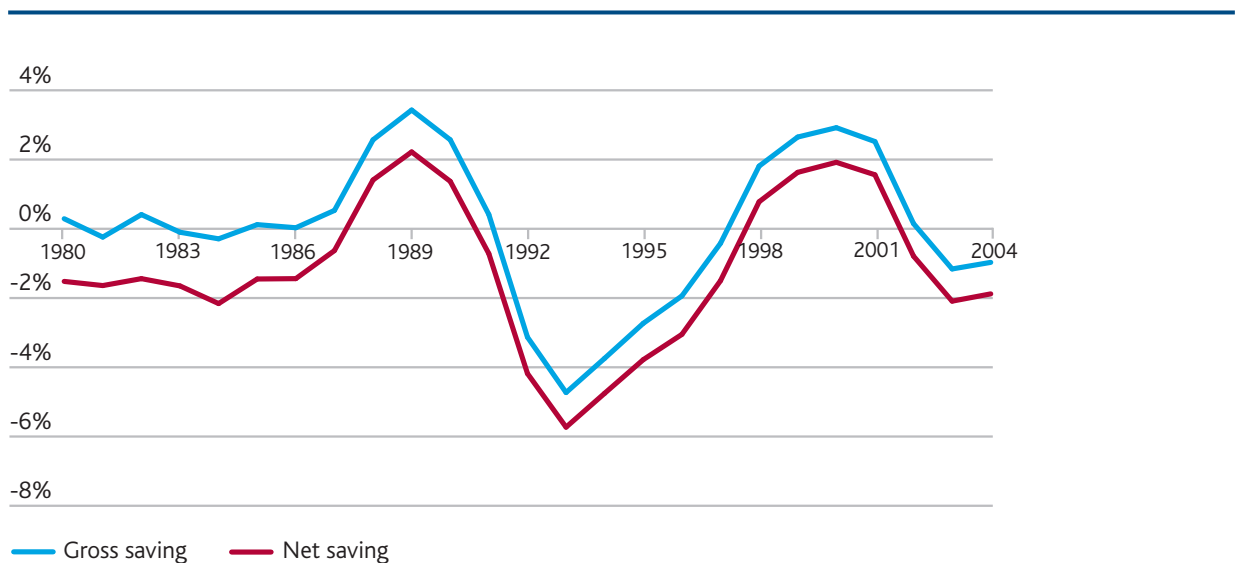
Figure C.11 Non-financial corporations gross saving, capital consumption and net saving as a percentage of gross national disposable income: 1980-2004



Source: Blue Book

Note: Capital consumption figures prior to 1987 have been estimated using other non-financial data.

Figure C.12 General government gross and net savings as a percentage of gross national disposable income: 1980-2004



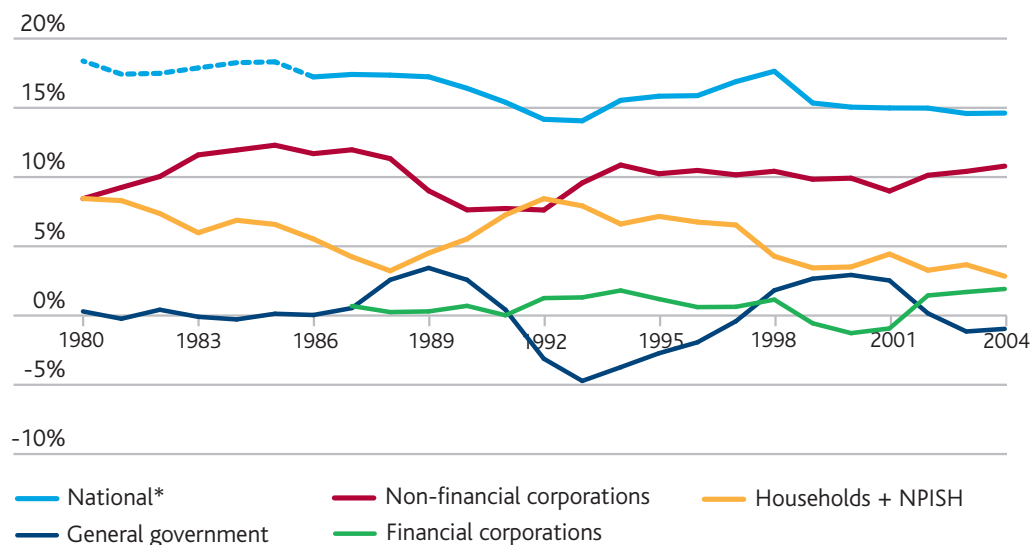
Source: Blue Book

Putting the three sectors together to produce aggregate national savings, shows an oscillating gross savings line, with, if anything, a slight downward trend over the last 25 years [Figure C.13]. Over the still longer term this downward trend appears more clearly with national gross savings appearing to grow between the late 1940s and the late 1960s, but on a long downward trend thereafter [Figure C.14].

At least over the last 25 years, however, this downward trend is not apparent at the **net** national savings level, with the fall in gross savings offset by the fall in measured “capital consumption” [Figure C.15].

The interpretation of these trends, and their relevance if any for public pension policy is uncertain. As Section 2 argued it is not possible to draw any significant inferences about the adequacy of a pension system from the **level** of aggregate national savings. But it also suggested that trends in the national savings rate **probably** imply trends in adequacy.

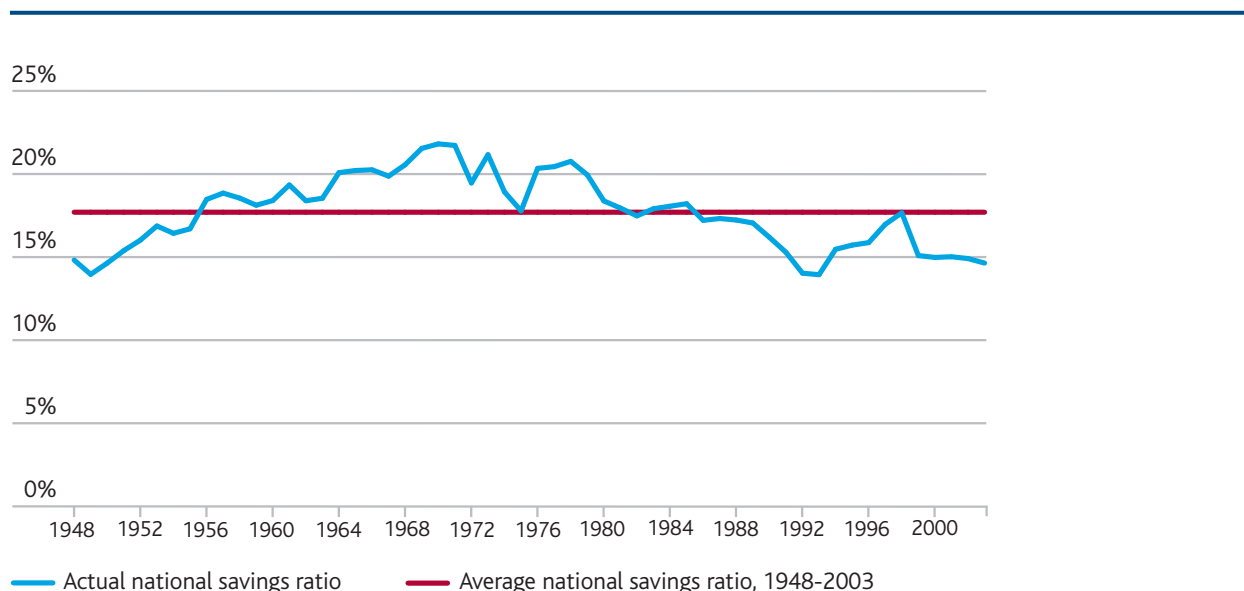
Figure C.13 Gross saving by sector as a percentage of gross national disposable income: 1980-2004



Source: Blue Book

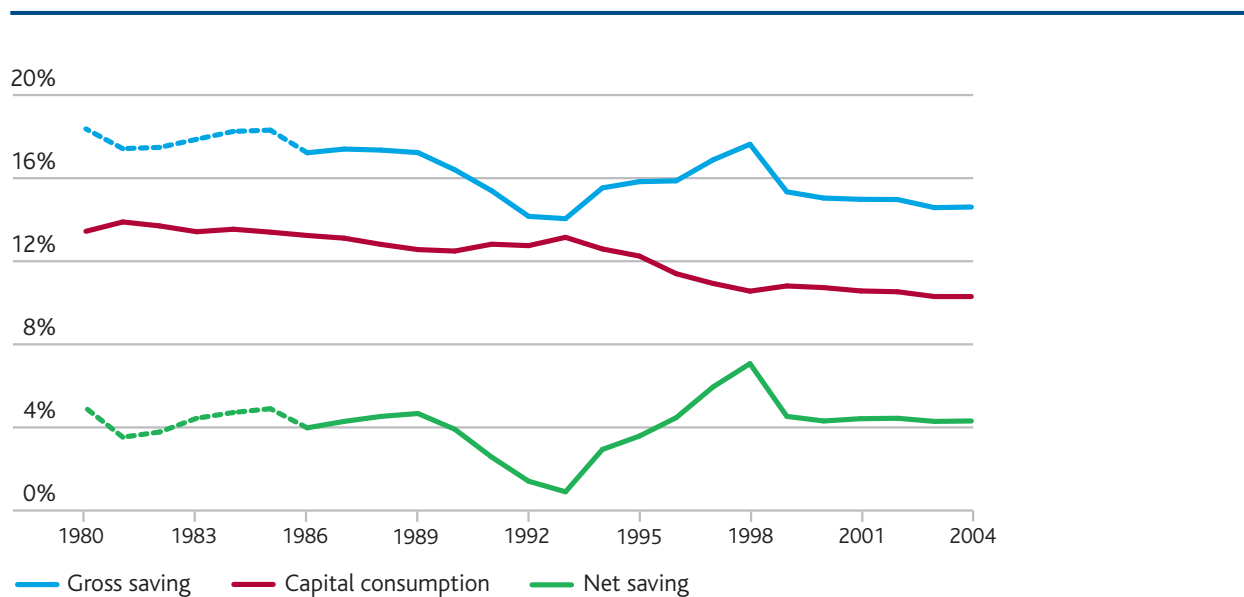
Note: *National figures prior to 1987 have been estimated.
NPISH = Non-profit institutions serving households.

Figure C.14 National savings ratio, 1948-2003: gross capital formation plus the current account surplus as a percentage of GDP



Source: Congdon, 2005

Figure C.15 National gross saving, capital consumption and net saving as a percentage of gross national disposable income: 1980-2004



Source: Blue Book

Note: National figures prior to 1987 have been estimated using other national data.

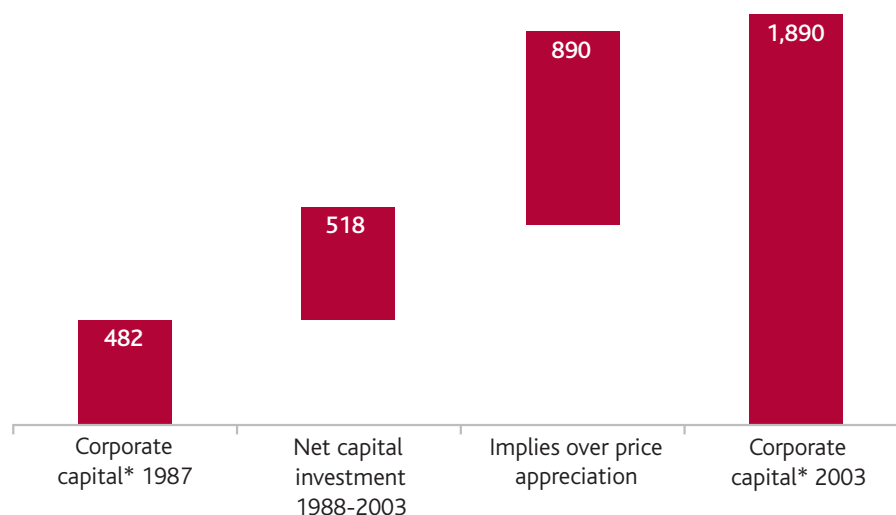
The tentative conclusions we draw from these figures are therefore:

- While there may have been some underlying decline in the UK's national gross savings rate over recent decades, it is not so dramatic as to make the national savings rate a central issue in pension policy.
- Conversely however, there is no sign that the national savings rate is rising, and therefore no prima facie evidence to support assertions that the flat level of pension savings (described in the First Report) is masking more dynamic savings trends elsewhere in the household sector or in other sectors.
- Net national saving is probably best described as trendless over the last few decades, but only because "capital consumption" as a percentage of national income is declining. The real economic meaning of this accounting measure is however unclear. It is explored in Annex B (available on the Pensions Commission's website).

4. Increases in value of corporate capital in excess of net savings

In a closed economy operating under the equilibrium conditions described in Figure C.7, the total value of corporate capital (equity and bond/debt combined) would rise each year by an amount equal to Net Household Acquisition of Corporate Sector Securities PLUS Net Saving at Corporate Level. All of the annual increase in the **stock** of corporate capital which the household sector ultimately owns would therefore be explained by an annual **flow** of savings, saved either by households themselves or by corporates on their behalf. The increase in the stock of wealth would be explained by savings flows measured somewhere in national accounts.

A striking feature of the last three decades however is that the total value of the corporate capital stock has increased far faster than can be explained by any measured savings flow occurring either at the household or at the corporate level [Figure C.16]. Households have therefore enjoyed a wealth gain without having to save (either directly or via corporates retaining earnings on their behalf).

Figure C.16 Capital investment and asset price appreciation: UK non-financial corporations: 1987-2003 £ billion

Source: Blue Book

Note: *Value of equity liabilities plus net cash, debt and bond liability.

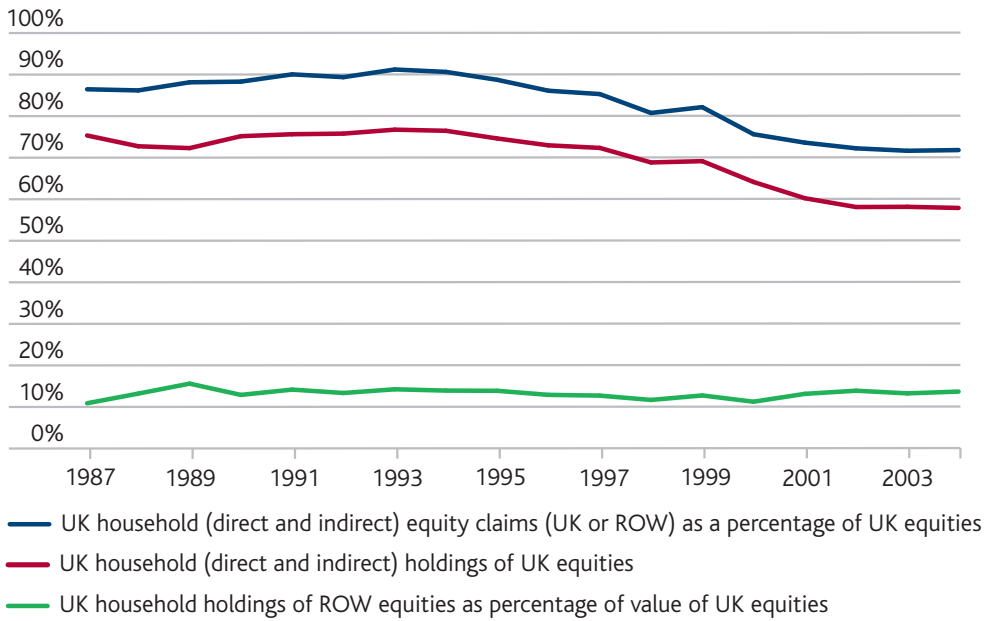
This is one reason why UK households have been able to reduce their aggregate capital claims on corporate capital relative to the total value of UK corporate capital, while increasing the value of these claims relative to UK GDP (and thus to their average earnings)⁵. Thus, for instance:

- Over the period 1987-2003, UK household claims on corporate equity (UK or overseas) whether held directly or via pension funds and insurance companies have fallen in value from 88% to 75% of the value of UK corporate equity [Figure C.17]⁶.
- But the value of these claims as a percentage of UK GDP has increased from 98% to 120% [Figure C.18].
- This is in part because the value of all UK company equity relative to GDP has increased from 105% to 155% [Figure C.19]. Over the longer-period since 1975 (and looking solely at quoted equity) this ratio has increased from 25% to 125%, and remains, despite the equity price falls of 2000-2002, well above the levels seen at any time since 1963 [Figure C.20].

⁵ The other reason is the factor explained in Annex A – the fact that UK corporates increasingly hold claims on non-UK GDP, matched by increasing overseas claims on UK corporate capital.

⁶ Ideally the analysis should focus on the total level of claims on corporate capital, whether in debt or equity form. Data availability makes that analysis extremely difficult. But it is clear that the trends in ownership of equity have not been offset by counteracting effects in the ownership of debt/bond claims.

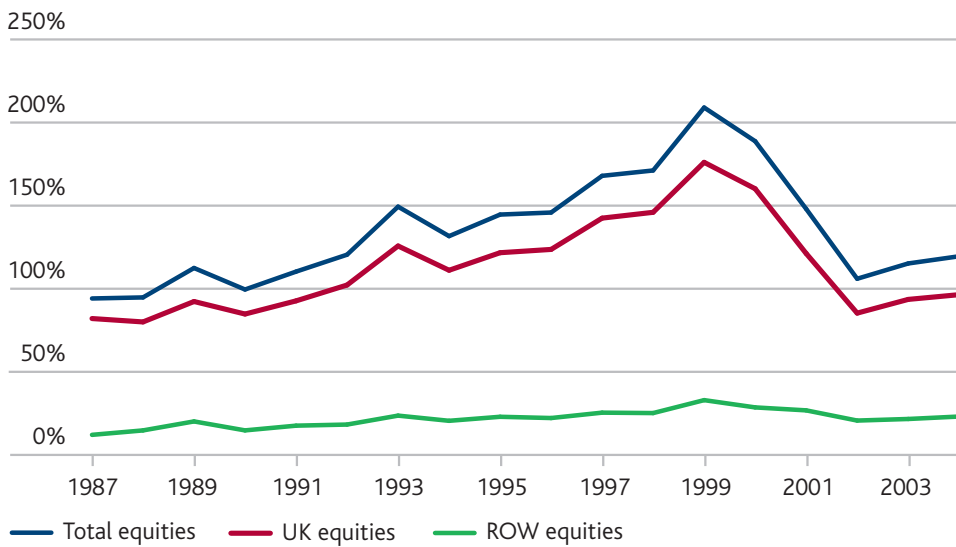
Figure C.17 UK household sector claims on UK corporate equity



Source: Blue Book

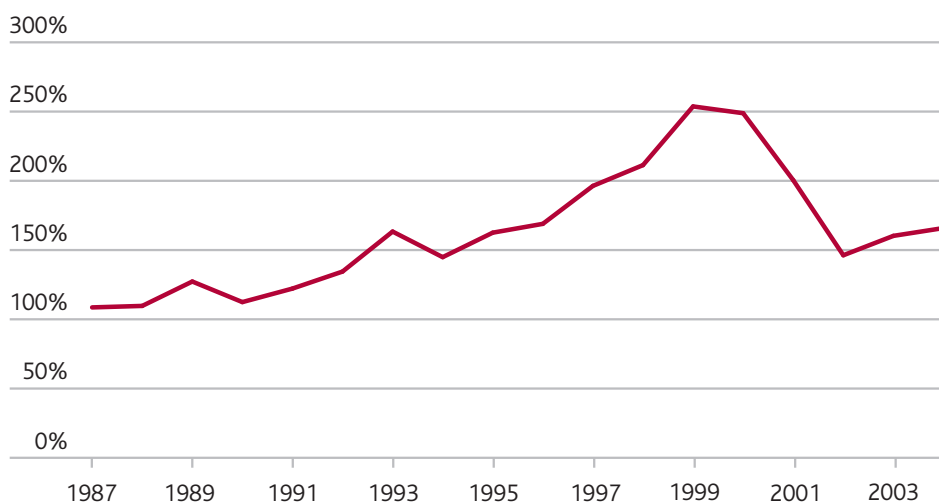
Note: "Indirect" claims mean claims held via pension funds and insurance companies.

Figure C.18 Household (direct and indirect) holdings of equities (quoted and unquoted) as a percentage of GDP



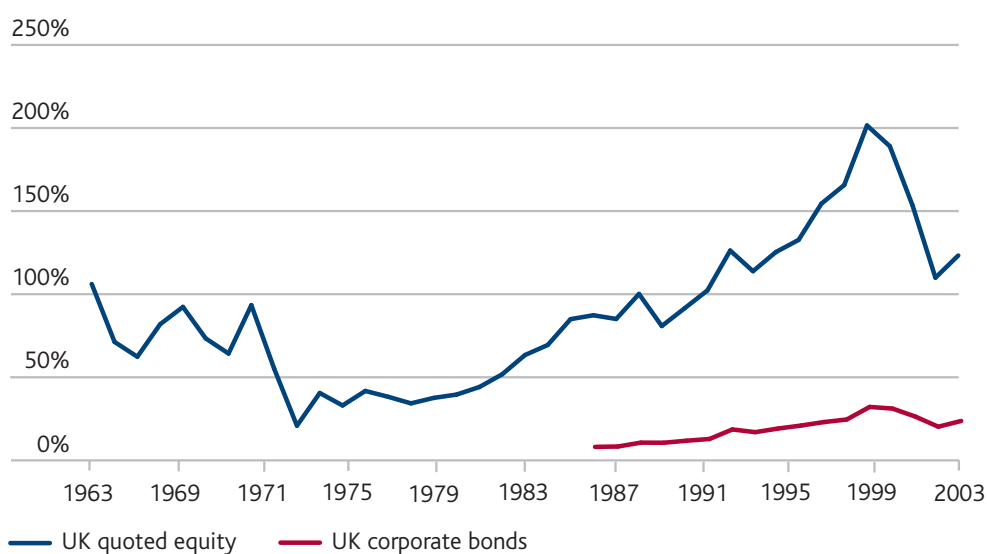
Source: Blue Book

Figure C.19 Consolidated equity liabilities (quoted and unquoted) of UK corporations as a percentage of UK GDP



Source: Blue Book

Figure C.20 Equity and bond liabilities of UK corporates as a percentage of GDP: 1963-2003



Source: Blue Book

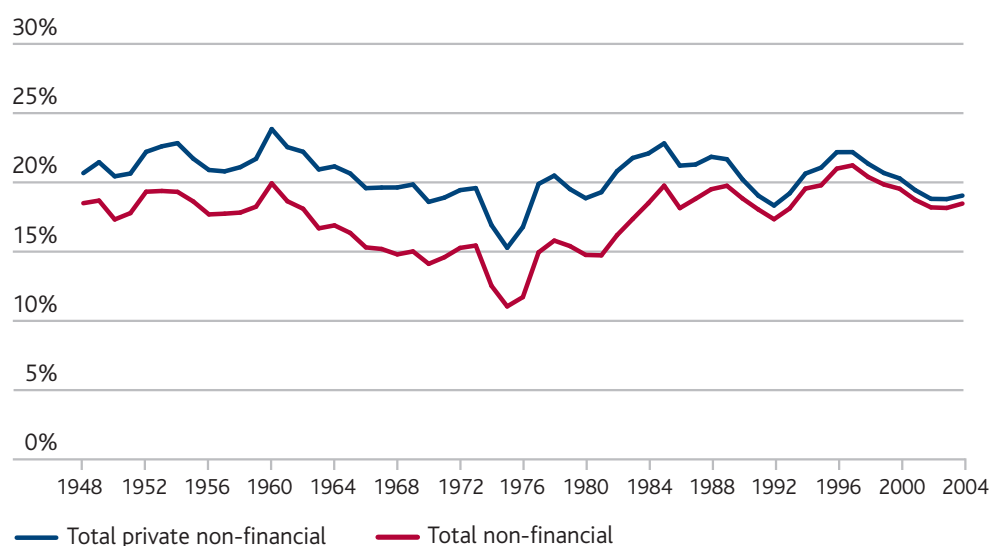
Key questions are therefore:

- (i) What is the explanation and the economic meaning of these increases in wealth unexplained by savings flows: do they mean that concerns about inadequate savings flows are overstated, either at the aggregate national level, or at the level of individual savers?
- (ii) Can such wealth increases without savings be expected to be enjoyed in future?

(i) The economic meaning of increases in equity wealth increases unexplained by savings

There are at least four possible reasons why the value of UK corporate capital could have increased relative to GDP. Three of these could deliver wealth increases to households not captured by national savings measures.

- First, UK corporates could have accrued larger claims on GDP produced by the rest of the world, as a result of increasing UK corporate investment overseas. As Annex A describes, (available on the Pensions Commission website) this has been a major phenomenon of the last 10 years. But this would **not** in itself deliver increased wealth to UK households since it would tend to be matched by UK households owning a decreasing percentage of UK corporate capital (e.g. when BP purchased AMOCO with shares the percentage of BP owned by non-UK households automatically increased).
- Second, the profit share of national income could have increased, so that capital owners own a claim on an increased share of GDP. In fact gross operating surplus as a percentage of GDP has been remarkably constant over the very long-term. But it did fall during the 1960s and reached levels well below trend in the mid-1970s [Figure C.21]. A significant element of the equity market rise of the mid-1970s to 1980s, may therefore be explained by the recovery of the profit share of national income to its long-term average.
- Third, expectations of future growth rates in profit could have risen, either because of a **further** anticipated rise in the profit share of national income or because of expectations of higher GDP growth. These changed expectations could be either rational or irrational.
- Fourth, the real discount rate which shareholders apply when calculating their required return from investments in corporate capital could have declined because of either:
 - A fall in the required risk-free discount rate. This has clearly occurred in the 1990s, with real returns on risk-free government bonds now below 2% versus 3% to 4% in the mid-1980s.

Figure C.21 Gross operating surplus of UK corporations as a percentage of GDP: 1948-2004

Source: Blue Book

- Or a fall in the perceived riskiness of corporate capital investments and thus of the risk premium applied to equity. This changed perception could also be either rational or irrational. But it could be argued that there were at least some rational reasons for a reduction in perceived risk between the mid-1970s and today, with the emergence of greater political consensus on the merits of a capitalist system, and with the achievement of far greater macroeconomic stability.^{7,8}

The relative role of these explanations, and in particular the balance of rational and irrational effects, is a large and hotly-contested issue. But over the last 30 years rational explanations could explain at least some of the rising value of equity relative to GDP (via the increase in the profit share of GDP, the fall in real risk-free discount rates, and the reduction in domestic political risk.)

⁷ The very low levels of equity market valuation relative to GDP seen in 1975 may for instance have reflected the interaction of high inflation with taxation systems insufficiently adjusted to exclude inflation effects.

⁸ Note that it is also at least theoretically possible that the perceived riskiness of corporate capital investment has stayed stable but that the extra return which individuals need to compensate for risk has reduced (i.e. that there has been for some reason a change in the psychological cost of risk).

(ii) **The key question therefore is: can corporate capital wealth increases without savings be expected in future?** The most reasonable expectation would seem to be no. There do not appear to be good reasons to expect that the rational drivers of past increases in the corporate capital to GDP ratio will be repeated in future. There is no obvious basis for anticipating that the profit share of GDP will now move sustainably above its 50 year trend level: there is no reason to believe that real risk-free yields will fall even further from present low levels (even if they stay at those levels): and there is no reason, if the rational equity risk premium has fallen, to anticipate its further decline.

Any forecast of equity values and returns entails significant uncertainty, but the mean expectation must be that the value of corporate capital relative to GDP will be steady, which in turn implies two results:

- First that from now the best assumption must be that increases in the stock of household claims on corporate capital will be equal to savings flows occurring either within the household sector or within the corporate sector on the household sector's behalf.
- Second that the prospective return on equity is best estimated by looking at the returns achieved over the very long-term e.g. over the whole of the 20th century, rather than over the last 30 years. This (as Appendix B in the First Report argued) suggests equity returns of more like 6% real per year rather than the 10% to 12% real enjoyed in the 1980s and 1990s.^{9,10}

5. Household pension and non-pension saving

The UK household gross savings rate fell from 8% in 1992 to 4% in 2002, while the net savings rate fell from about 6% to 1% [see Figure C.10]. This was predominantly a cyclical effect, with [as Figure C.11 showed] corporate savings rising in the inverse direction, and the gross national savings rate unchanged between 1992 and 2002. The idea that there is a problem of aggregate under savings at national level is not therefore suggested by these figures.

Within household sector savings however two elements dominate - pension savings and savings for house purchase. There is therefore no evidence to support the assertion that deficient pension savings by some individuals are being compensated for by non-pension **financial** saving. The important role which house price appreciation plays in enabling increased cash borrowing and lending **between** different groups **within** the household sector is however clearly illustrated by the figures.

⁹ **Any** attempt to infer future equity return from past performance rests however on a large number of debatable assumptions.

¹⁰ Note that provided our estimates of return on equity investment include the capital gain element, projections of accumulated future stocks of wealth held by individuals can be based on their own savings (i.e. accounted for in the household sector) as increased by this total rate of return. We do not need separately to allow for the saving on their behalf occurring within the corporate sector since this saving is captured via the capital gain element of total return on equity.

These points are expanded below.

The structure of household savings is illustrated by the 2002 figures set out in Figure C.22. In that year the household sector had gross savings of £42.9 billion. But capital investment by the household sector was higher at £50 billion, and the sector was therefore a net acquirer of financial liabilities i.e. a net disposer of financial assets. The net figure of -£3.9 billion however arose from an £10.9 billion net acquisition of occupational pension fund assets, offset by a £14.8 billion net disposal of all assets held outside occupational pension funds. Since this net disposal includes a positive figure for personal pensions (but one which it is impossible to precisely determine) the imbalance between **all** pensions and non-pensions will be even more striking.¹¹

Gross savings into occupational pensions funds fell gradually between 1980 and 2002, as a result both of falling contributions flowing in (i.e. accumulation) and rising pensions flowing out (i.e. decumulation). But these occupational pension savings have dominated the household sector's net acquisition of financial assets throughout the period, with the net acquisition of financial assets outside occupational pension schemes negative in most years (and the net acquisition of non-pension financial assets i.e. excluding also personal pensions, almost certainly significantly negative in every year) [Figure C.23].

It is important to understand however that these national figures fail to capture the full reality of savings behaviour since they net out accumulations by some people and decumulation by others (see Section 2 above for a general discussion of the difference between savings at the individual level and savings at the national level). In particular they fail to reveal the dominant feature of household sector non-pension financial behaviour over the last 20 years, which is the accumulation of large cash liabilities by some households, significantly offset at the aggregate level by the accumulation of cash balances by other households [Figures C.24]. In terms of the framework set out in Figure C.8 the household sector has been steadily liquidating claims against corporate capital held outside pension funds, but some parts of the household sector have increasingly lent cash (via the banks and building societies) to other parts of the household sector.

In stock of wealth terms the liquidation of corporate capital claims was offset until 2000 by the equity price effects described in Section 4. But following the equity price falls 2000-2002, and looking over the whole of the period 1980-2002, the increasing dominance of the "cash recycling" effect **within** the household sector, relative to its claim against corporate capital, becomes clear [Figure C.25].

¹¹ Within National Income and Accounts gross savings can be divided between Occupational Pensions Saving and All Other Savings (which includes Personal Pensions). The net acquisition of financial assets can be divided between "Pension Funds, Personal Pensions and Life Policies" and "All Other Savings" (excluding both Personal Pensions and Non-pension life policies). It is not possible to derive precise figures for all non-pensions savings (i.e. **excluding** personal pensions but **including** non-pension life policies).

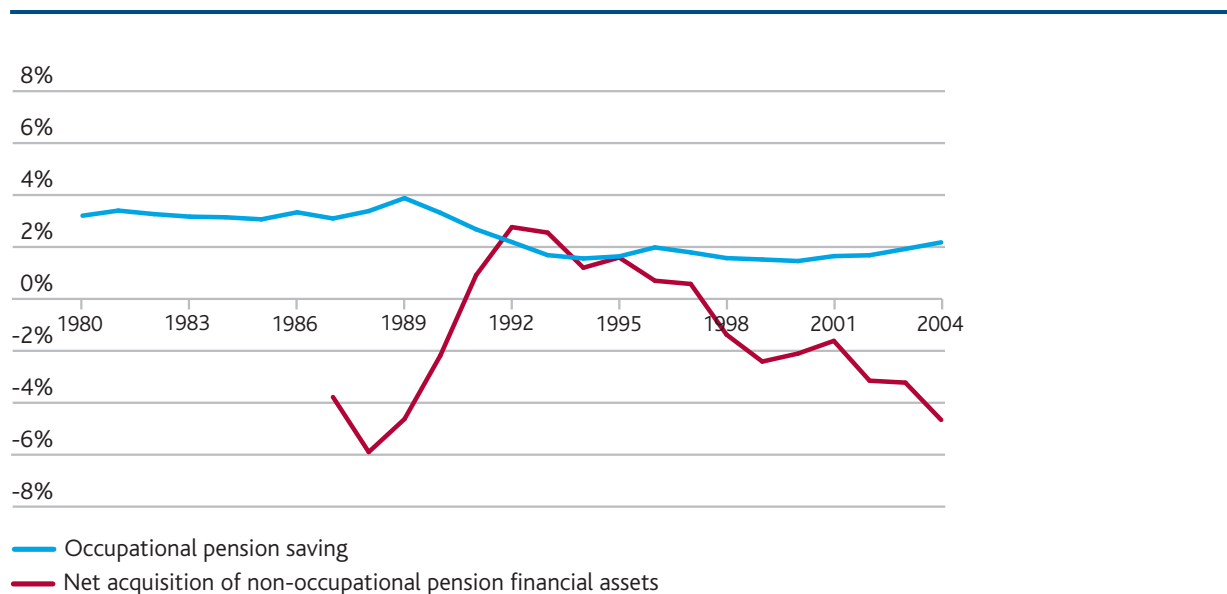
Figure C.22 Household saving and investment figures: 2002 £ billion

Gross saving	42.9	
+ capital transfers	3.1	
- capital investment	-50.0	
Net acquisition of financial assets	-3.9	
Of which		
Net acquisition of non-occupational pension financial assets	-14.8	← Net disposal of financial assets outside occupational pension funds
Assets acquired in occupational pension funds	10.9	

Source: Blue Book

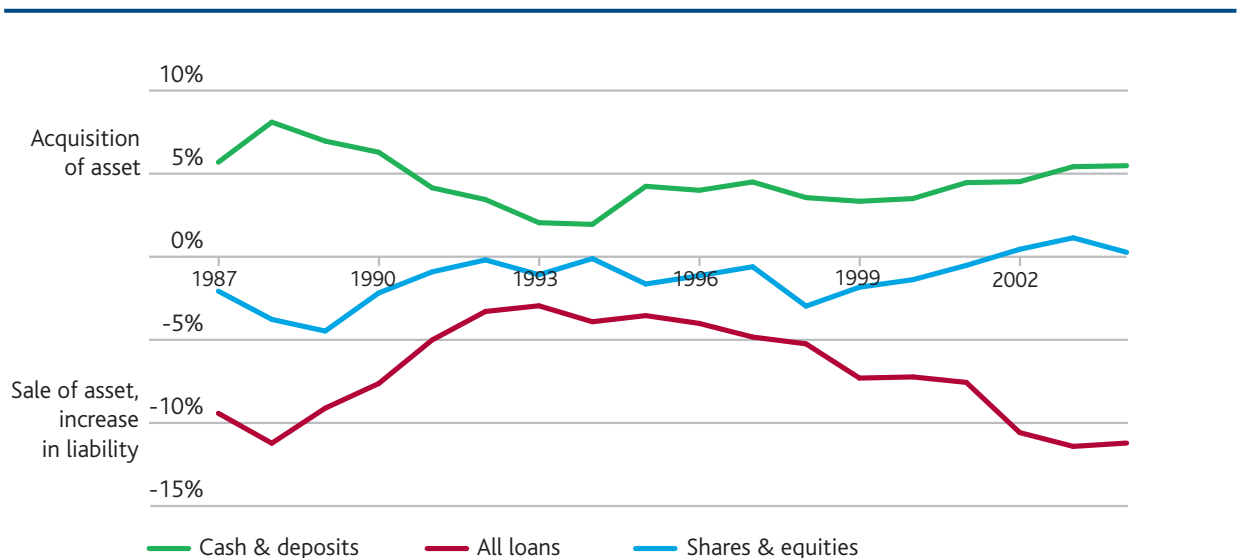
Note: Effects of errors in the household sector gross savings, arising from Blue Book errors in estimates of total pension savings, are yet to be determined.

Figure C.23 Gross household sector savings: occupational pensions and other as a percentage of gross national disposable income: 1980-2004



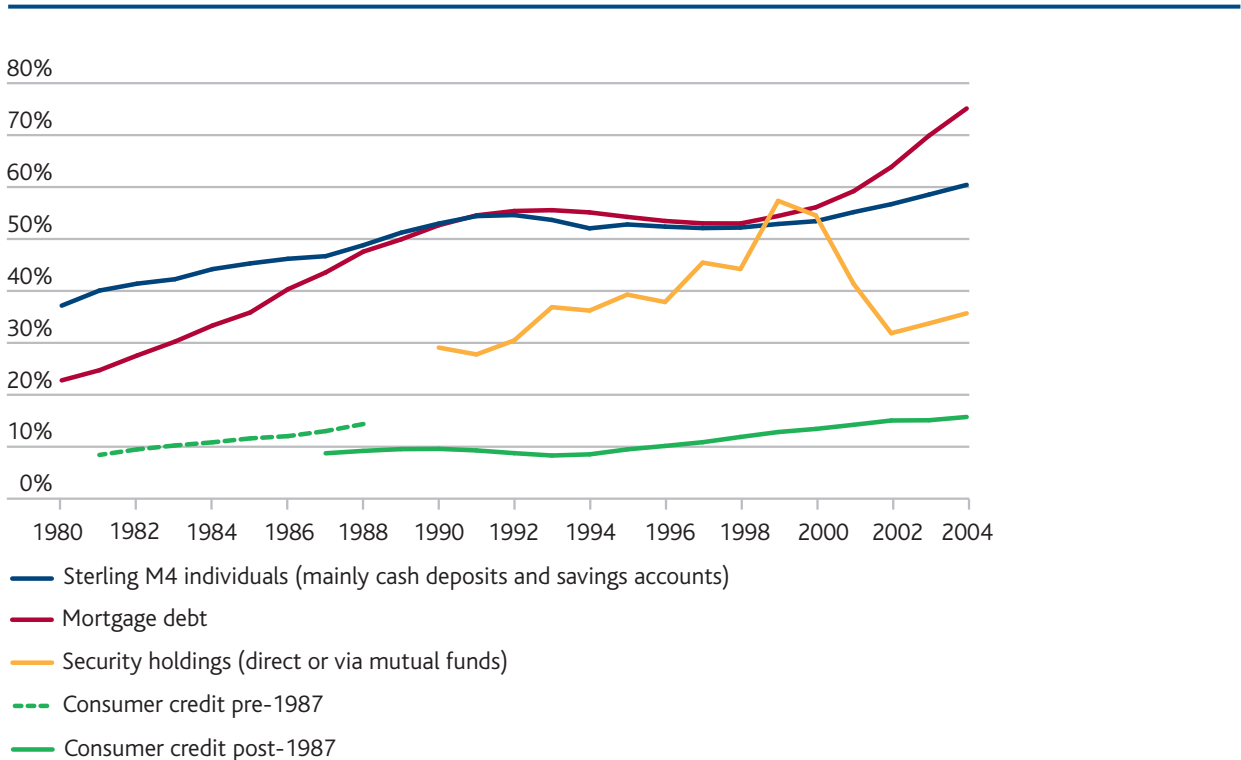
Source: Blue Book

Figure C.24 Household non-pension, non-life NAFA/NAFL as a percentage of gross national disposable income: 1987-2004



Source: Blue Book
 NAFA = Net Acquisition of Financial Assets
 NAFL = Net Acquisition of Financial Liabilities

Figure C.25 Non-pension financial assets and debt as a percentage of GDP: 1980-2004



Source: Blue Book

The explanation of this phenomenon is integrally linked to the house price appreciation effect which will be considered in Section 5. As house prices rise relative to income, people choose to devote more of their working life earnings to the accumulation of housing assets, which they purchase with mortgage debt secured against the house value. But for most buyers of houses there is a seller from within the household sector.¹² That seller can be either decumulating housing assets during retirement, or selling an inherited house. In both cases the sale's proceeds result in cash receipts which to a significant extent at the aggregate level appear to be held in cash form rather than used to buy claims on corporate capital.

This phenomenon has important consequences both for the optimal design of pension policy and for any attempt to draw inferences for the adequacy of pension saving from the level of national aggregate savings. Thus:

- As house prices rise (and if that rise is sustainable – see Section 6) it is possible for housing asset accumulation and decumulation to play an increasing role in lifecycle consumption smoothing. And the greater the extent that this smoothing is achieved via the accumulation and decumulation of housing assets, the lower may be the optimal level of income replacement rates which government pension policy should mandate or encourage.¹³
- This effect may however be utterly invisible within any analysis of the national aggregate savings rate. House price appreciation can occur without any increase in the national savings rate (see Section 6). And the simultaneous growth of debt liabilities and cash assets by different groups **within** the household sector nets out at the total sector and total national level.

Overall therefore the key points to take from this analysis of household financial savings patterns are:

- There is no evidence that declining levels of pension saving are being offset by increased accumulation of non-pension claims against corporate capital. Indeed the reverse is true. The UK household sector has been a steady liquidator of corporate capital claims held outside pension funds, an effect masked until 2000 by the equity price appreciation effect.
- But increasing house prices are supporting increased **intra**-household sector flows, some households borrowing increasing proportions of income, while other households are holding increasing proportions of income in cash deposits. (The flow is intermediated via banks and building societies but is essentially a flow from one part of the household sector to another.)

¹² The exception is purchase of new built homes, where the seller is a house-builder (typically within the corporate sector).

¹³ See Adair Turner "Political Choices and Macro-Economic Issues" LSE 8th March for a fuller exposition of this argument.

Figure C.26 Household gross saving, gross investment and net investment: 2002 £ billion

Gross saving	42.9	
	+ Capital transfer	3.1
	- Capital investment	-50.0
= NAFA		-3.9
Capital investment	50.0	← of which 31.1 is in housing
	- Capital consumption	35.6 ← of which 20.0 is in housing
= Net investment	14.3	← of which 11.1 is in housing

Source: Blue Book

Note: NAFA = Net Acquisition of Financial Assets

6. Household saving in houses: capital investment and price appreciation

Figure C.8 set out the fact that the two fundamental forms of wealth which the household sector owns (and all of which is in some ultimate fashion owned by the household sector) are corporate capital and residential housing. Section 4 discussed the fact that the value of corporate capital has increased far more rapidly over the last 25 years than can be explained by saving invested in corporate capital either by the household sector or by the corporate sector on households' behalf. An analogous effect is found in residential housing. For the last several decades the value of residential housing has grown far more rapidly than can be explained by net investment in housing. Unlike with the corporate capital effect, this form of wealth increase without savings **may** continue into the future.

As Figure C.22 showed, the household sector had gross savings of £42.9 billion in 2002. More than 100% of this however was dedicated to investment within the household sector, predominantly in residential housing [Figure C.26]. This figure for housing investment, though labelled "in new houses" in national accounts, actually also covers major house improvement investments, such as conversions, conservatories and extensions. To calculate **net** effective investment in housing we have to allow for depreciation of the housing stock ("capital consumption") but also for the significant expenditures which households commit within current expenditure categories to offset this wear and tear [Figure C.27]. Taken altogether, the figures suggest that the household sector has invested a net £410 billion (in current money terms) in the housing stock it owns between 1989 and 2004.

This represents however, less than a third of the increase in the value of the housing stock over that period, with £930 billion of real value increase arising from real price appreciation (i.e. price rises above inflation unexplained by capital investment) [Figure C.28]. This "unexplained" wealth effect has been by far the largest source of household sector wealth accumulation over this period.

Just as with equity values in Figure C.7 so with housing [Figure C.29] we can define a set of the conditions under which no such pure price effects could occur, and under which therefore the real market value of housing would rise precisely in line with real net investment. To understand the circumstances under which these conditions might not exist, it is useful conceptually to split the value of housing into two elements [Figure C.30].

- The constructed house. By definition this will only rise in value as a result of net capital investment. Net capital investment as a percentage of income may tend to increase over time if housing amenity is a high income elasticity good: and may therefore form an increasing part of household gross savings. But it will be visible in national account measures of savings.
- The value of the land itself, and in particular of land which has specific locational characteristics which are strongly desired. This value will rise with rising income if land and in particular specific desired locations are in limited supply, and if specific positional characteristics are a high income elasticity good. If both conditions are true to a significant extent, the long-term trend can be for house prices to rise faster than average earnings.

These conditions do seem to apply in the UK (particularly in the more densely populated areas). Whether they are already fully (or more than fully) discounted in current house prices or whether they will continue to drive house prices faster than average earnings over the long-term is highly uncertain. But while there are good reasons for asserting that the unexplained equity price trend is very unlikely to apply in future (see Section 4 above), it is at least possible that the trend in house prices relative to average earnings could continue.

Figure C.27 Household gross and net investment in housing: 1989-2004, real 2005 £ billion

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Household gross capital investment in new houses	30.4	24.7	21.5	21.6	22.4	23.4	23.3	24.4	25.8	26.4	26.7	27.7	28.8	32.9	35.4	40.4
+ Maintenance and repair of dwelling	11.2	14.5	11.8	10.6	10.1	10.3	10.0	10.3	11.1	11.4	11.6	11.5	12.2	13.0	13.0	13.6
+ Goods and services for routine household maintenance	4.7	4.8	4.9	5.2	5.4	5.5	5.4	5.5	5.6	5.5	5.7	5.9	6.1	6.3	6.5	6.8
- Consumption of fixed capital	-13.1	-14.0	-14.0	-13.8	-14.0	-14.4	-15.0	-15.6	-16.1	-16.9	-18.2	-19.4	-20.4	-21.2	-21.5	-21.7
Total of maintenance and depreciation effects	2.8	5.2	2.7	2.0	1.5	1.4	0.5	0.2	0.6	0.1	-0.9	-2.0	-2.1	-1.8	-2.0	-1.3
Total net investment	33.1	29.9	24.3	23.6	23.9	24.8	23.8	24.6	26.3	26.5	25.8	25.7	26.7	31.1	33.5	39.1
Σ 1990 – 2004	29.9	54.2	77.8	101.7	126.6	150.4	175.0	201.3	227.9	253.7	279.4	306.1	337.2	370.7	409.8	

Source: Blue Book

This increase in the value of houses does not however show up as an element within household sector or national saving. This is logical because an increase in house value unexplained by capital investment represents a windfall gain for all those who already own a house, but a matching windfall loss for those who do not yet own a house [Figure C.31]. This would be obvious if the effect were a one-off instantaneous event. It is solely because it has been spread over several decades that it appears that all people can gain from it: effectively each new cohort of house buyers for the last several decades has suffered a windfall loss to the previous generation, but then enjoyed a windfall gain at the expense of the following generation.

The fact that this increased wealth is quite correctly not counted within national savings, does not however mean that it is irrelevant to the adequacy of potential consumption in retirement resources. It obviously is in relation to those who enjoy a windfall gain, and who therefore have the potential to decumulate that gain e.g. via equity release or trading down in retirement. But even when comparing two steady state equilibria, one with low house prices relative to GDP and the other with high house prices, there is an important implication. The higher the value of houses relative to average earnings and GDP, the more that people may choose to devote savings during working life to house purchase, and the greater therefore will be housing assets available for decumulation, whether during their own retirement via equity release and trading down, or during the retirement of their inheritors, who will inherit housing assets in addition to those they have accumulated themselves.

Figure C.28 Net investment in housing and increasing value of housing: real 2005 £ billion

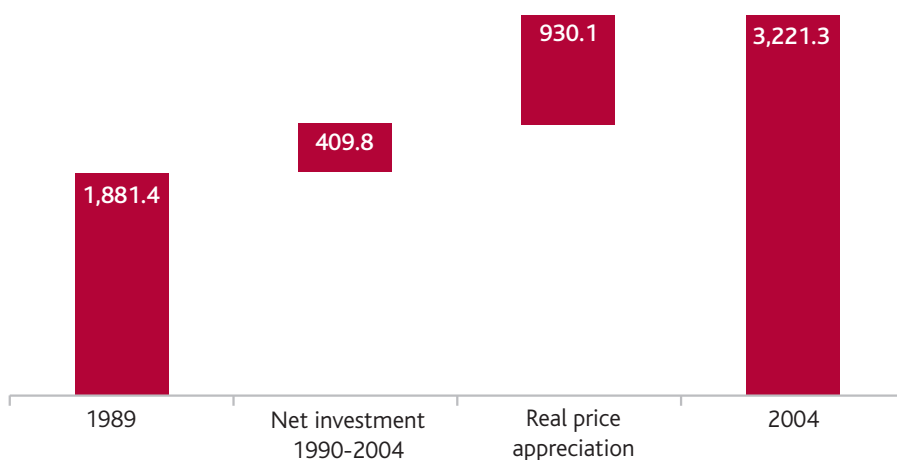


Figure C.29 Capital investment and price appreciation in the value of houses

- If land were constant in real prices, both in general and in specific locations (e.g. no change in the relative attractiveness of specific locations)...
- ... and if desirable new features (e.g. extensions) could always be added at construction price...
- ... and if "capital consumption" figure correctly estimates the expenditure required on repair and maintenance to keep real utility/value...
- ... then the real market value of housing would rise with real net investment.

Figure C.30 Two factors in house price appreciation

- | | |
|---|--|
| <ul style="list-style-type: none"> ■ Net capital investment in improvement in housing stock. | <ul style="list-style-type: none"> ■ Will occur with rising income if housing amenity is a positive income elasticity good. |
| <ul style="list-style-type: none"> ■ Real price appreciation of land, positional locations, unreproducible features etc. | <ul style="list-style-type: none"> ■ Will occur with rising income if <ul style="list-style-type: none"> – Land/positional locations are in limited supply. – Desire for land and positional aspects of housing are high income elasticity goods. <p>If both factors are true to a significant extent (very limited supply, and high income elasticity) trend can be the prices rise faster than average earnings.</p> |

Figure C.31 Impact of one-off rise in the price of land

- Windfall gain to those who already own land/house:
 - Lower level of savings needed to achieve desired level of wealth.
 - Higher consumption in retirement possible if willing to run down wealth rather than bequeath.
- Windfall loss to those who do not yet own land/house:
 - Higher level of savings needed to achieve any given target level of housing amenity (or higher level of consumption spend on housing if rent rather than buy).

Thus we can establish the hypothesis set out in [Figure C.32]. The more that desired housing land is in scarce supply and the greater the income elasticity of demand for housing locational amenity, the greater the role that the acquisition and sale of housing will play in the process of inter-generational resource transfer, and the less therefore will be the need to achieve it via specifically defined pension savings. But this greater role of inter-generational resource transfer via the housing market will not register as an increase in national savings.

These considerations are clearly extremely important in the UK. The total value of residential housing as a percentage of GDP **may** be on a long-term upward trend (rather than simply oscillating over a cycle) [Figure C.33]. **Whatever** its trend, however the sheer size of the **stock** relative to GDP means that a large consumption resource transfer will occur via the purchase and sale of homes. And the proportion of the housing stock owned by the household sector (rather than by the government) has steadily increased over the last 20 years [Figure C.34]. Because of the distributional issues and risk issues discussed in Chapter 5 of the First Report, this cannot be seen as providing a complete answer to pension adequacy for all. But it is clearly a factor relevant to the optimal design of pension policy.

Figure C.32 Housing wealth and inter-generation resource transfer

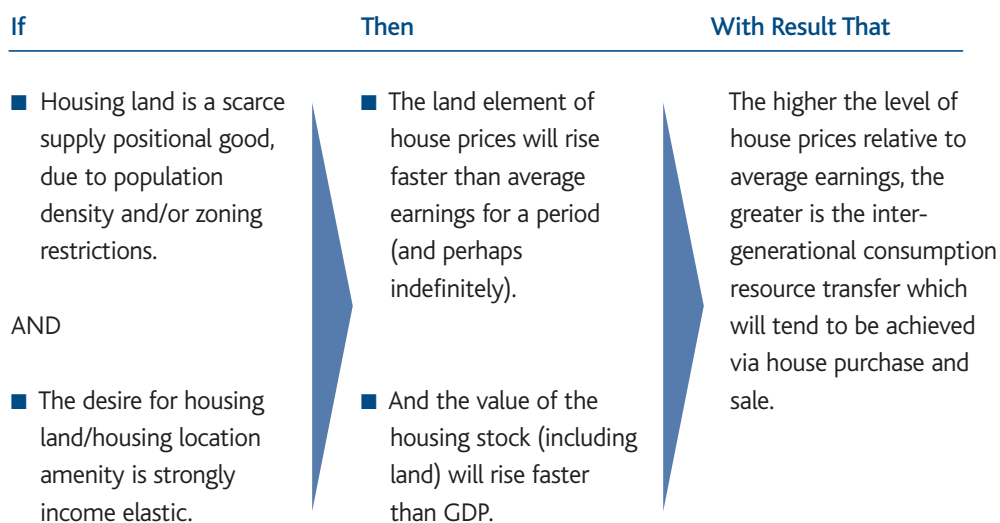
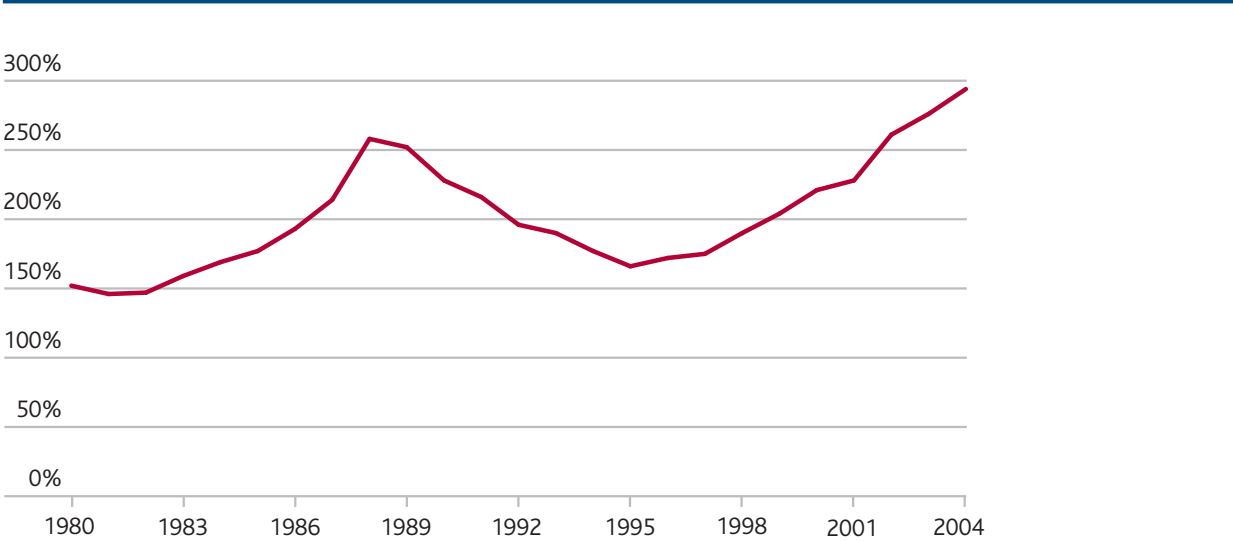
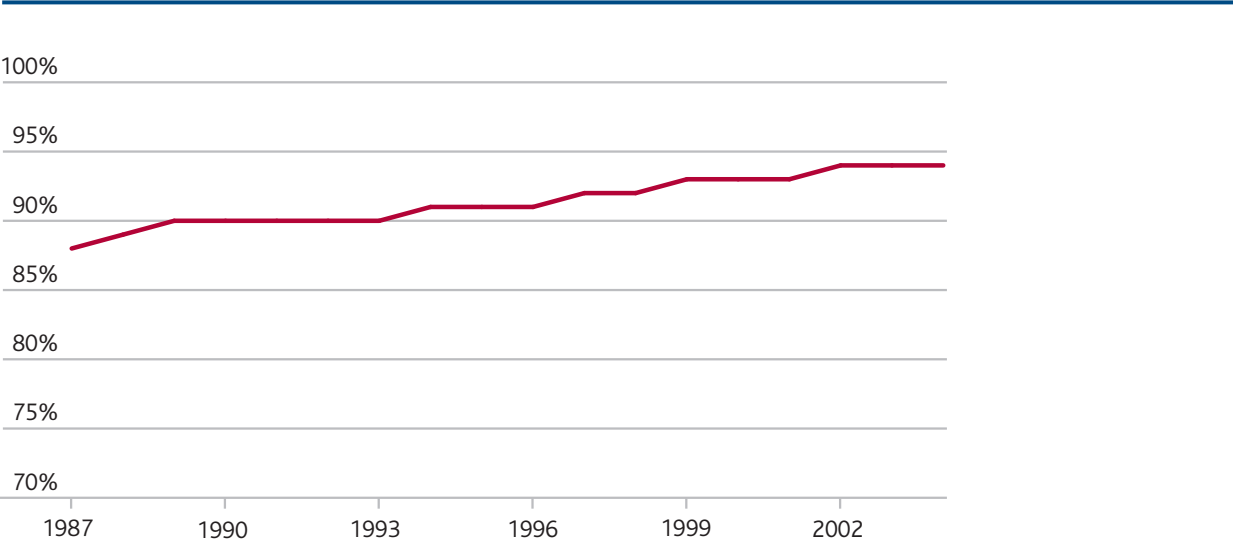


Figure C.33 Gross residential housing value as a percentage of GDP: 1980-2004



Source: Blue Book

Figure C.34 Residential housing owned by households as a percentage of gross value of residential housing: 1987-2003



Source: Blue Book

