

## Home truths about home ownership

**Popular opinion about home ownership in the UK is that it has created real wealth, more than the stock market and with much less risk. By contrast, renting is 'money down the drain'. Naturally, because people think house prices can grow faster than the economy, young people fear the bottom rung of the housing ladder will tend always to be moving out of reach. These are false notions, based on imperfect accounting of people's own experience, gained in a particular period of economic history, and interpreted with a shaky grasp of basic economics, both national and household. Though the popular illusions might well have been shattered by the credit crisis, they appear to have survived largely intact. In this position paper we explain in lay terms the basic economics of home ownership. Our conclusions can be summarised as ten more accurate 'home truths'.**

- 1 There are no foregone conclusions about how best to pay to put a roof over your head: buy or rent. It has to be a bet.
- 2 Be clear about what you most value in life or at different stages in your life. It may not be satisfied by large and inflexible bets.
- 3 Comparisons *before the event* should not (but usually do) exclude the opportunity cost of higher savings when renting rather than repaying a mortgage
- 4 The factors that *after the event* will prove what worked best are inextricably linked by national economics but can still vary dramatically through time and in different economic environments. Partial interpretation of history, such as your own or your parents' experience, will be misleading.
- 5 Individual outcomes will be shaped by entry and exit points, not secular trends that are immutable and known to all. Much of the results of entry and exit points will be down to age and luck.
- 6 If you really do believe in secular trends, remember that the corollary is that deviations from trend 'revert to the mean'. That means that if leveraged home ownership was a winner for a long time, it might be about to be a loser for a long time.
- 7 For most people, the eventual 'balance sheet' outcomes count for less than the impact of borrowing on household 'profit and loss accounts'.
- 8 Willingness to take on mortgage debt, and the size of that debt, should therefore be more about the ability to bear the additional financial stress that follows from adverse events.
- 9 The key driver for long-term outcomes is the different impacts of general inflation on the cost of money and the return on investment. This makes leveraged home ownership a bet on the economic variable, inflation, which is the hardest to predict.
- 10 The tax effects of owning versus renting are neutral except when either the main home or financial assets are sold to support spending; but the CGT advantage of property in that case is weakened by the scope to shelter, spread and time disposals of financial assets.

## Why we have written this paper

No Monkey Business, as a book and as a business, expresses the belief that everyone can benefit from *smarter decision making*. Counter-intuitively, being smarter usually means

- recognising the limitations of how much anyone can know and
- making a more realistic accommodation with uncertainty.

We have more than 70 years of ground-breaking insights from economists and mathematicians to thank for showing us the way. Perhaps because economists have always found capital markets more interesting, the economics of home ownership have been less well studied and, in the vacuum, popular illusions have taken a strong hold.

These illusions virtually destroyed our banking system. Yet the focus has since been on the resulting challenges and lessons for macroeconomic management and hardly anyone, least of all any political leaders, is trying to work out what it means for households and what as individuals we need to understand better if we are to avoid mistakes in the management of our finances.

As financial planners we find ourselves needing to confront these illusions from time to time when dealing with clients and their children. The No Monkey Business way is not to dumb it down but to have an adult-to-adult conversation about how we think the world actually works. We are not afraid to talk economics or to try to explain a theoretical basis for making difficult decisions, as provided by those economists and mathematicians, if it makes it easier and better.

In this position paper we bring together the different aspects of decisions involving residential property that we typically find ourselves addressing.

The benefits of basing decisions on home truths rather than false economics are:

- individuals and families will be less likely to suffer intolerable losses
- they will make a better job of managing competition between their lifetime goals
- they are more likely to escape the disempowering emotional aspects of home financing - peer pressure, frustration, resentment, self-blame.

Other countries fret far less about home ownership. Why can't we?

## A single proposed framework for all home financing decisions

### Three factors behind every decision

By one measure, at least, decision making is simple: to make smarter choices we only have to focus on three factors. Unfortunately, their changing future values, and the paths they take, are necessarily unknown:

- 1 **The cost of money**
- 2 **The return on property, separated between capital growth and the economic rent from property**
- 3 **The total return on equities (treating dividends as part of the economic rent from capital)**

*Explanation of terms*

- The cost of money refers to the interest paid as a proportion of principal.
- Whereas the cost of money is an *actual cost* there is also an *opportunity cost* where one choice is at the expense of another. This needs to be accounted for and the other two factors address it.
- We explain in the paper why we think the opportunity cost when buying property is equities rather than a more conventional 'balanced' portfolio of equities and bonds.
- The gross economic rent from capital invested in property is the same whether received by investors or paid by tenants. Rent is set in the market by supply and demand so there is a firm economic basis for separately identifying property price and property rent.
- Unlike rents, dividends are in economic terms a purely arbitrary distribution of corporate return so the only realistic measure of equity returns is total return, capital plus income.

Though we do not know what these three costs and returns will be in the future, we can examine the historical evidence to work out some realistic probabilities, using some pretty basic macroeconomics to work out to what extent the three elements are either random or interdependent.

When we form these estimates, we cannot just rely on different linear projection rates or 'point figures' for say 20 years (a fault of most financial planning approaches No Monkey Business is constantly attacking). We also need to estimate the way they can change over the course of a projection period, as many of the critical effects of the decision, by which it will be judged after the event, will relate to the path taken by these variables. Whereas 'path risk' is defined in money terms, the long-term payoffs to financing choices may be shaped by inflation effects more than any other variable, so we have to focus on inflation as a source of uncertainty too.

### Same factors used for different circumstances

How expectations about the cost of money and returns should affect our decisions depends to some extent on the circumstances, yet these three factors are still all we need in most personal situations.

Insufficient capital	Sufficient capital			
Borrow to buy (rent money) or rent (rent property)?	Buy or rent? If buying, how much to borrow?	Pay down mortgage or invest?	Invest in financial assets or buy-to-let? Gear up the buy-to-let?	Use the mortgage to gear up financial assets?

### How to use the factors

We should use information about the cost of money and returns *in the same general way* that we make smarter decisions in capital markets, albeit with a few specific allowances that finance theory inconveniently omits:

- we should start by understanding what defines our 'utility', or how we value the different aspects of possible outcomes and what aspects should dominate others (we explain this useful term in the next section)
- risk, as in the errors associated with our return expectations, is just as important as having expectations
- whatever our utility, our choices should reflect our own risk tolerance - there is no one right choice for everyone
- but a general rule is that borrowing makes 'cash flow' sustainability (surviving) more important than 'balance sheet' outcomes (which assume we survive)
- and borrowing introduces different sensitivities to inflation compared with bets that do not involve borrowing.

### Relating decisions to benefits

In adult-to-adult financial planning, 'utility' is the rather grand economic term covering conversations with clients that seek to discover as much as possible that describes the 'benefits' they seek from money. Though economic jargon, as a concept it is actually fundamental to changing the nature of the dialogue between advisers and clients because it is open, relevant, engaging and personal.

These are necessarily conversations about how money exists for us in our heads and requires no mention of how it does or could exist for us in physical forms like savings or investment vehicles. The benefits can take different forms, or different forms at different life stages. They describe 'values' rather than specific 'goals'. They can be simple or complex; mutually consistent or contradictory.

The benefits are likely to be shaped more by emotions than reasoning but they are important to economists because they help explain what, for each individual in particular circumstances, would be 'rational'. If these are more imagined than real, they may not survive a process of testing by financial planning, note. We list below some common 'untested' values shaping housing finance choices.

Aspiration	Nesting	Control	Bequest
In many cultures home ownership is seen as a significant threshold for social mobility	Young couples starting a family associate ownership with a nesting instinct	Ownership conveys a sense of control but debt also reduces flexibility and makes sustainability a creature of external, uncontrolled risks	Ownership for As and Bs replicates the motivation of 'great estates' for sustaining intergenerational wealth

Imagined or not, the power of motives such as these over popular decision making is reinforced by more general influences such as 'peer pressure' and the 'safety of crowds'.

Why 'advertised' utility may end up being redefined with financial planning is that it should identify whether a household's interests are dominated by 'path risk', what happens to the household finances along the way as both personal and external economic circumstances change, or 'wealth outcomes' at long horizons.

These different utilities are not usually easy to reconcile, which is why these conversations are often avoided. Decisions that appear to maximise wealth outcomes will expose the household budget to

greater stress and this may make the strategy unsustainable. Stress can arise from external events, such as the random combination of refinancing requirements, poor credit availability and very high interest rates, or from events specific to the household, such as redundancy or ill health.

### An inefficient rental market

A common factor that may well be real is a rental market that is small and inefficient. It means people's experience of renting, apart from being associated with second best, may be adverse.

For 'baby boomers', for instance, this was a key influence on their preference for ownership, if we assume they lacked insight into the real economic drivers for wealth creation and foresight about real returns and interest rates. The rental market had been badly distorted by intervention by government to protect tenants, the perverse effect of which was to restrict rentals to the bottom of the market where low-income tenants were prey to unscrupulous landlords.

With barely more than 10% of the UK property stock let privately, far less than most countries, it is quite possible that in many areas the rental market still looks really unattractive, even as a temporary measure.

One of the benefits of buy-to-let has been a general raising of standards, even when it involves amateur rather than professional landlords. A larger rental sector would help match housing decisions better to personal utilities.

### Buy or rent?

Satisfying the need for a roof over our heads, the choice has to be between renting and borrowing if the home we desire cannot be financed from our own capital resources. It is often seen as a choice involving time preferences: bringing forward home ownership to an earlier stage of one's life. But this does not affect the nature of the choice between buying and renting. That choice will be influenced by non-financial attributes but remains at heart a financial problem.

Lacking capital, we can put a roof over our heads either by *renting property* or *renting money* and using that to buy property. This insight is revealing.

In purely financial terms, the optimal choice is only known after the event and is a function of differences in the following:

- the cost of renting money, which is the interest rate paid to the lender
- the capital return on the property, allowing for maintenance and improvements
- the rent payable for an equivalent property.

This explanation should bury once and for all the canard that renting is 'money down the drain', with 'nothing to show for it'. It is the *repayment* element of the cash flows that confers a value on ownership (the bank has a charge, after all) and the magnitude of the value is a function of differential rates, which we will come to. Otherwise both renting money and renting property involve the payment of an economic rent to others and so either both are 'down the drain' or both satisfy a utility for the payer. Economics tell us both are good.

The optimal choice before the event will be one that allows realistically for the uncertainty about differential rates and the consequences for the household budget and for long-term outcomes, depending on how utility was defined.

### Sustainability dominates

If household budgets are tight and liquid savings low, the key variable is *change in nominal interest rates* because this may not be matched by changes in nominal household earnings from continued employment. If the scenario that produces unbearable stress is a catastrophic decline in household income, it may not even require a rise in interest rates.

Even relatively small variances in each of interest rates and household income can have a big impact on other financial goals that may have even greater utility than home ownership, such as family raising.

### Wealth creation dominates

In households with more certain incomes or a lower share of housing-related costs in their spending budget, expectations about possible variation in nominal interest rates during the life of the loan will count for less than expectations about the *average real cost of money*, after inflation.

## The importance of inflation

Recognising the bounded divergence over the long term between returns to different assets (they are all part of the same economy, after all), actual relative outcomes are likely to be significantly explained by the different effects of inflation on each of mortgage rates and property prices.

- If markets are efficient at anticipating future inflation, the borrowing costs will reflect the inflation element of the property price gains and so, to the extent property prices rise because of general inflation, will cancel it out
- Unanticipated inflation may endow a gain on borrowed property as the decline in the real value of the debt is not offset by the total real interest paid during the life of the loan
- Unanticipated deflation has an opposite effect, as the nominal cost of money cannot fall whereas the nominal price of property can - and in a general deflation probably will.

It is also likely that deflation will cause greater shocks to household income than inflation, whether anticipated or not, so this scenario is critical whether utility is dominated by either sustainability or wealth outcomes.

The myopic interpretation of history that sees home ownership as a route to wealth creation is heavily influenced by the baby boomers. We experienced unanticipated inflation and enjoyed negative real interest rates in the 1970s and early 1980s. We were also lucky to be helped by deductibility of interest against tax for part of our debt period. When inflation moderated in the 1990s, more than (or for longer than) generally expected, the upward pressure on real interest rates was cushioned by exceptionally strong growth in mortgage lending and compression of lending spreads, which we can now see was a dreadful mistake. Politicians encouraged this by their reaction to the housing recession in the early 1990s.

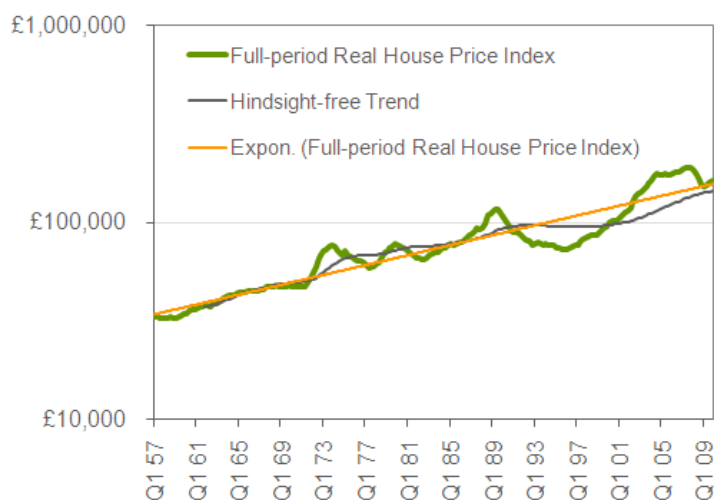
Was this experience typical? No. Over the whole of the century, incidences of positive and negative real cash rates (based on Treasury Bills rather than mortgage rates) of the order of 3-4% pa for periods as

long as a decade were fairly evenly balanced. In the only period of sustained deflation, in the 1920s, real rates averaged 7% pa (Barclays Capital Equity Gilt Study)!

## Real house prices

We regularly post on the No Monkey Business website updated charts of the Nationwide Average House Price Index from 1957 deflated by general inflation, in other words real or 'relative' house prices. Note that this series is adjusted for the upward trend in the quality (and therefore cost) of the 'average home'. Because it reflects the continued investment of capital in improvements, which few individual owners mentally account for, it is similar to an 'internal rate of return'. A home that had not been maintained or improved by new investment would not have kept up with this index.

A regression trend fitted to this data from 1957 has a slope of 2.8% pa. If the trend had been fitted before the recent bull market it would be about 2% and if real prices fall again the trend may work its way back to about 2%. The chart is shown below with data through year end 2009. The whole-period trend is shown in orange. The price is logarithmic so the changes are proportional throughout.



Confronted with this evidence, most people are genuinely taken aback. It is inflation, or 'money illusion', that is mainly responsible for the confusion. 'Home accounting' rarely allows for cumulative effects of (for baby boomers for example) a tenfold increase in the *general* price level. And the declines in real house prices in cyclical bear markets, ranging between 17% and 37%, were conveniently disguised in money terms by high general inflation rates at the time, contributing to the myth that *prices never fall* - the worst that can happen is that they will be flat for a few years. That is what the buyers of derivatives based on US mortgages thought until the market actually fell in both real and money terms and wiped them out!

What an economist will tell you is that the overall long-term trend of real house price growth of 2-3% pa is in line with the trend growth rate of real personal incomes over this period. The implication is that this is therefore to be expected, as it keeps 'affordability' broadly constant over long periods. Several further observations flow from this.

- We know that building costs have broadly followed general price inflation (there have been no technical breakthroughs to cause a decline in real or relative terms) so it is land values that have risen in real terms.
- Combined valuations, land and buildings, suggest the market has been tight enough to prevent any net increase in affordability - which would show up as a slower trend growth in the index than in real personal incomes.
- Tightness has to come not just from marginal net new supply of land and buildings but also the supply of credit, as the link between land values and personal incomes is via mortgage finance. Credit availability affects both the fitted trend and the cyclical path around the trend.
- There is no evidence of a secular trend of falling affordability or supply shortfall that might justify the popular belief that the housing ladder is getting further out of reach. This is probably a confusion of the up-cycle from 1997-2005 with a sustainable trend.

### The opportunity cost: financial asset returns

The explanation of outcomes from borrowing or renting is not complete until we bring in the last of our three factors: the return provided by financial assets. In terms of the maths, this is a biggie.

Popular views of the superiority of buying and the common error of regarding rent as money down the drain both typically ignore *the opportunity cost of the financial assets that could have been acquired with the household after-tax income otherwise applied to mortgage repayments*. If savings had otherwise been applied to pensions, this would in fact have been out of pre-tax rather than after-tax income. We examine all the different tax effects on the economics later.

The typical construction of a mortgage loan aims to smooth cash outflows (in money terms) over the life of the loan by back-loading the capital repayments. In economic terms, the variance in cash flows is dampened by pushing it into the 'duration', or money-weighted life, of the loan instead. The general effect is that early in the loan the 'actual' cash flows, in one case property rent on the whole of the property value and in the other case payments to the bank on the portion of the property value borrowed, are more likely to appear to favour borrowing. Clearly, this apparent advantage will be greater when the 'loan to value ratio' is lower. But the advantage relies on not accounting for the opportunity cost of the 'equity' investment in the property, the proportion not borrowed.

Whatever the amount of own capital invested, outcome-based assessment of the buying versus renting decision needs to account for the return foregone on the entire stream of loan repayments, which would otherwise be a source of potential investment for anyone renting. If people only look at the short-term cash-flow comparison, they will effectively borrow from their own future cash flows.

### The lesson of endowments

This general principle should have been much more obvious to people when endowment mortgages were popular. In an endowment mortgage the repayment of the debt is deferred while building up (out of net incomes, for most of their history) a 'sinking fund' of financial assets.

What we know from the returns to insurance-company endowment policies, in which the sinking fund was held, is that the opportunity cost of financial asset returns was variously very high (when policies matured with large 'surpluses') and very low (small or no surpluses). When maturing policies generally fell short of the sums required to pay off the debt in full (which, incidentally also reflected errors in anticipating inflation uncertainty rather than equity uncertainty), the fashion swung back to repayment mortgages.

What people should have concluded from this experience, which would have been of much wider application to decision making, is that

- there is massive uncertainty about the actual relative nominal prices of property and financial assets
- there are very different sensitivities to inflation
- together, these sources of uncertainty overwhelm the long-term trends of returns to each, which are quite similar.

## Equity returns as the right opportunity cost

### Real assets

There are strong theoretical grounds for treating equities as the right asset for calculating the opportunity cost. This is because equities provide the same loose link with inflation that property does. Both are therefore commonly referred to as 'real assets'.

#### *The connection between fixed income investment and long-term fixes*

Investing instead in bonds, or nominal fixed income investments, makes the long-term payoffs from saving extremely vulnerable to unanticipated inflation. Though this is similar to the long-term payoffs to borrowing in the face of uncertain inflation, the impact is greater because short-term interest rates, and therefore mortgage rates, are reset frequently to reflect the markets' changing reassessment of inflation risk. With a fixed income investment, there is largely only one inflation guess, at the outset.

Over the past century, nominal gilt yields have varied in a wide range between 2% and 17% but calculating real yields based on actual subsequent 10-year outcomes, which would be narrowly distributed if inflation guesses were fairly good, the range is actually between -5% and 10%.

This is one of the reasons why the bias in the UK to variable rate mortgages is not (as some economists have argued and Gordon Brown believed) inconsistent with people's utility: *because the cumulative effects of guessing wrong are so great*. Borrowers act rationally by avoiding long-term fixes (inflation bets) while taking short-term bets (two-year fixes) to bring a bit more predictability into the household budget.

### How big is the opportunity cost?

We have defined it as the real total return from equities (capital growth plus reinvested dividends, after inflation). The observed trend over a century has been about 7% pa. The UK is similar in this respect to other countries. With real growth in property values of 2% pa, the two assets are equalised at net rents of 5%.

Built into this achieved return is a 'risk premium' for bearing the economic uncertainty that comes with 'business risk'. This risk is very high even when individual company exposures are widely diversified. It is high over short periods but even for periods as long as the life of a typical repayment mortgage, at say 25 years, there is considerable uncertainty about the outcome. However, the probability that the risk

premium will be positive is very high over 20 years and is improved significantly by avoiding concentration on a single equity market.

Even if the real cost of borrowed money is only about 1.5% pa (the average real Treasury Bill return for the last century of 1% plus, say, a 0.5% spread), *the compounding effect of a risk premium will have a very large impact on the buying versus renting decision*, easily sufficient to tilt the balance in favour of renting, at least for long periods if not for the entirety of anyone's life.

Over shorter periods, the variance of both property prices and equity returns, which are not independent of each other but move to some extent together, will make a greater difference to outcomes. The relationship between price movements over one year is not obviously dependent but the major bull and bear cycles in financial assets have been mirrored reasonably well by property prices. The early 1990s were tougher for house prices than equities but the biggest exception was the bear market after the dot com boom, which the housing market glibly ignored. However, this set the scene for the fall in house prices when the credit crunch hit.

Timing sensitivities may explain the appearance that the factors influencing returns are not the same but a closer analysis might reveal that the timing differences can be explained by credit flows.

Does the return behaviour imply a different risk tolerance, though? No. Real total returns (including the economic rent of property) are not fundamentally different and investors' capital can move freely between them. But equities *appear* more risky just because they are more easily liquidated and are valued throughout the day, whereas property is very illiquid, expensive to trade and therefore rarely traded and rarely revalued. Academic studies have demonstrated that after adjusting for liquidity differences the risk is similar.

### My home is my pension

Another important insight follows from the importance of opportunity costs. The *enjoyment of occupied (not let) property is a form of consumption*, in the form of the economic rent foregone.

This concept is not obvious to most property owners. What would make it obvious is if the notional rent paid from one of your pockets (renter) to the other pocket (owner) were actually taxed. This, by the way, is a fundamental principle of 'flat' or flatter taxes, as it removes inadvertent distortions in the market from the tax regime and reflects underlying economic reality rather than actual transactions. Only by broadening the tax base in that way can the flat tax rate be set very low, as sought by its proponents.

The principle that property enjoyment is a form of consumption is important in all financial planning as 'larger' property investment competes directly with the utility of savings for retirement or other purposes and may call to be reconciled by preferences to do with timing, or life stages.

Although we do not have statistical data, many advisers and pension providers have told us that in the mass market pension provision appears inadequate but resistance to selling pressure is high as people plead that mortgage repayments take up all their savings capacity. We often hear middle-aged Middle England say 'my home is my pension'. They probably do not mean it literally but maybe they should.

A possible impact on real house prices is that they will underperform even a historical trend estimate of 2% pa, as the baby boomers and the following generation extract capital. This possibility is independent of much slower growth in real personal incomes which must itself be a possibility as a product of

austerity in public sector budgets, unless the employment effects can be offset by a resurgent business sector.

A likely additional impact is that the inheritance motive that has biased towards property, because it was the one asset that might remain unspent at death, will not be satisfied. It too will have been spent.

Turning capital trapped in housing into consumption flows should not just be associated with 'failure'. For households who want their children to stand on their own feet or see that they already do, or those without children, turning housing capital into spending money is likely to increase, rather than decrease, capital efficiency, simply because they benefit most from their capital when sustainable lifetime spending is maximised.

### Tax effects

The popular view is that buying beats renting because your principal residence is free of CGT. This needs to be put into perspective. The actual tax effects are set out below.

#### Cash flows

- Both mortgage interest and property rent are payable out of after-tax income – **NEUTRAL**
- Both debt repayments and the 'opportunity-cost' savings flows into financial assets are made out of after-tax income unless the second is into pension (but that is broadly balanced in net present values by the higher tax rate on 'pension income' compared with 'capital drawdown') – **NEUTRAL**

#### Capital release

- Selling a home in your lifetime to support spending (as opposed to some other means of equity release) is free of CGT but selling financial assets is not – **ADVANTAGE** *but in particular circumstances only*

#### Regular capital management

- The general assumption is that wealth building via property requires no activity whereas financial assets need review, rebalancing of the asset mix and changes in manager or fund selection – **ADVANTAGE** *but weakened in practice by the opportunities to shelter, spread and time financial asset disposals*
- These tax differences should be considered jointly with the incremental property maintenance costs of owners versus renters of say 2% pa out of net income and the minimised unavoidable expenses of an efficient financial asset portfolio of say 1% pa out of gross investment return – **DISADVANTAGE**

#### Inheritance

- IHT is blind to whether the estate is in property or financial assets – **NEUTRAL** *but the high incidence of freeholds being owned at death means that the CGT advantage of primary homes is largely academic*

### The inefficiency of freeholds

The baby boomers had another advantage they do not even know they enjoyed. At fairly high levels of inflation and nominal interest rates, the discounted or net present value of a freehold property (which is after all a right to a permanent economic rent, whether consumed or not) *expressed as years* was considerably shorter than the typical expected period of enjoyment of the property. Any 'bequest'

component of the value, as in the proportion that exceeded the expected lifetime of the purchaser, was effectively free. If they did not value it, this was very convenient.

Not so nowadays. With low inflation and low nominal interest rates, young people struggling to acquire sufficient own capital just to get a mortgage are being asked to pay more than the utility of the building as a roof over their heads and instead have to find hard currency, perhaps 10-15% of the price, for the utility of a bequest to their heirs - even if they would spend money on educating their children ahead of a bequest, or may not even have children!

Competing personal goals could be better met if the market offered leaseholds whose term matched the expected occupancy period. For a young couple in their mid-30s this might be 60 years. But it could be even shorter if this was all that could be afforded at the outset, possibly with the expectation of renting late in life.

### Buy-to-let

Because real house prices for most buyers in the last few decades have risen faster than the real cost of money, borrowing has paid off. It paid off even though they were not compounding returns at a rate including the economic rent from their capital, which instead they enjoyed as consumption. Imagine, therefore, how much better off investors would have been over the same period if they had borrowed to invest in a portfolio of real assets like equities.

More recently, many people who would not have taken on debt for this purpose nonetheless did so to invest in buy-to-let residential property portfolios. Their preference for residential investment portfolios reflects both the bias of individuals for bricks and mortar and the bias of banks to lend against property collateral. *The principles underlying this type of decision are the same whatever the assets, however.*

The key impact of debt-financed investment is that it increases the dependency on the short-term path at the expense of real wealth outcomes after long holding periods, because adverse developments along the way can mean you never get to the long-term outcome: banks foreclose or you lose your nerve. So borrowing makes it even more critical to focus on how utility is defined.

### Borrowing as an investment-risk preference

The last set of circumstances in which home financing economics crop up in private wealth management is borrowing against property to buy not properties but financial assets. Unless you are a client of a private bank, you are likely to find a mortgage is the best way to lever the financial asset portfolio. Private banks may lend against a financial asset portfolio. However, they are also likely to promote funds with leverage designed into them or use financial futures to introduce gearing. Our preference is to use mortgage finance to gear up a low-cost portfolio of diversified equity market exposures.

For high-earning investors who are confident about their savings capability, borrowing to invest more in financial assets does not necessarily push stress into the household budget. Instead, *it introduces additional variance into the path of future contributions.* In effect, this treats the variance effect of borrowing as part of the investment problem.

It is correctly viewed as part of your 'risk tolerance' and part, therefore, of ensuring your assets are managed in a way that is consistent with your risk tolerance. In that context, borrowing is a more

efficient strategy if your preferred risk level was being constrained by not borrowing. It would be constrained if you valued the additional returns associated with a higher level of risk but you could not obtain them because you were limited to the riskiness of an ungeared, diversified equity portfolio.

It is not sufficient to argue that you will be better off borrowing because the expected returns over a long period are likely to exceed the cost of borrowing. This is a natural corollary of the risk premiums public markets in open economies need to provide to risk capital. It may be true but it ignores the uncertainty associated with the size of the premium, or even its sign, in your particular holding period.

The appropriate trade off between expected return and risk (or uncertainty associated with that expectation) is solved for by discerning risk tolerance.

*Explanation of the theoretical basis for borrowing to invest*

The theoretical context for making borrowing a function of risk tolerance is the Capital Asset Pricing Model (CAPM). CAPM is very widely applied to both portfolio investment and corporate finance even though some of its assumptions about the rationality of market participants and the efficiency of markets are frequently challenged.

The element of CAPM relevant to borrowing is called 'the separation theorem'. It follows logically from the CAPM assumption that markets are 'efficient' because rational investors in efficient markets would all hold 'the market portfolio' (a tiny proportion of the same global asset positions as held in aggregate by all investors). To customise portfolios to individual risk preferences, instead of altering the market portfolio makeup they would instead either

- 1 dilute it with cash (if their risk tolerance was below average) or
- 2 increase it by borrowing (if their risk tolerance was greater than average).

The separation between a common risky portfolio and tolerance-specific exposures to that portfolio is why this is referred to as the separation theorem. The same principle can hold even if the risky portfolio is constructed differently from the CAPM market portfolio, such as because market efficiency is rejected.

As investment planners for high-earning and confident individuals, we find that the outcome ranges for long-term plans (usually this is their retirement plan) they most value, taking into account the capital resource they absorb, are sometimes constrained below optimal levels without gearing. Provided the horizons are quite long, it does not require unusually high risk tolerance, as implied by the magnitude of the range of the possible outcomes for sustainable spending, for this observation to hold.

Many people in the position to borrow are nonetheless likely to have paid down their mortgage as soon as they started to accumulate significant savings capacity, or to have offset their loan balance. This is the choice they are most likely to make if operating in a vacuum where there ought instead to be a coherent approach to risk preferences, underpinned by sound economics and utility.