



INSTITUTE OF  
**FINANCIAL  
PLANNING**

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### **Assumptions**

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## Abstract

The use of assumptions is an essential element of financial planning, given that planners are faced with constructing and managing a framework aimed at the achievement of a client's goals over a prolonged period in an inevitably uncertain future. The international CFP standards require that assumptions be reasoned, reasonable and adequate for the scope of the plan being constructed and this paper suggests some of the variables that planners should consider and some ways in which they might derive robust values to assist in the construction of a plan, particularly where this involves the use of lifetime cashflow calculations.

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However diligently and effectively the financial planner has gathered the necessary data about their client's circumstances, attitudes, expectations and objectives, it is inevitable that some things will be unknown. Some of these will be, as Donald Rumsfeld memorably put it, 'unknown unknowns' while others will be 'known unknowns'. While it is possible to model the former armed only with enough imagination, the latter comprises those items that may be highly influential on the success or otherwise of the plan but which are nevertheless difficult to predict accurately.

*"It is exceedingly difficult to make predictions, particularly about the future"*

Neils Bohr, Quantum physicist

However, financial planning is about the future so given that there is no way to avoid making some (hopefully educated) guesses about how things will work out, it is important to have a robust and repeatable process for arriving at the basis for those estimates. Note that the word 'accurate' is not used in this context as the evidence does not suggest that anyone has so far successfully and consistently managed to predict the sort of variables that are needed in constructing and managing a financial plan. Instead, a robust process provides a foundation for discussion and agreement with the plan's end user (the client) as well as for revision of those assumptions in the future. It might also provide a certain degree of protection for the planner in an increasingly litigious environment when, as will almost inevitably be the case, their assumptions turn out to be materially different from reality.

Candidates for the CFP certification process will be highly familiar with the standards for setting assumptions, that they must cover investment growth, price inflation and earnings inflation as well as any 'other relevant working assumptions' and that they must be adequate for the advice required and both reasoned and reasonable. As will become apparent, there is a significant number of additional variables for which assumptions may be necessary, depending on the circumstances.

As ever however, there is more than one way to meet these standards (not that it is the author's intent to limit the scope to that of CFP assessment candidates) and this document attempts to suggest some methodologies in which this might be achieved. They are certainly not the only ways. Feedback is therefore invited from readers who find other approaches to be effective.

While historic data can provide a useful foundation for deriving assumptions, it must be stressed that in financial planning, assumptions are being used in a forward-looking sense and thus the oft-quoted maxim that 'past performance is not necessarily a reliable guide to the future' is particularly relevant. This is particularly true where the time series is relatively short – while the impact of another five years on the long term average of data going back a century will be small, if added to an existing ten-year data series, the effect can be significant.

## Price inflation

### Retail Prices Index

Until relatively recently, the only real option for a measure of price inflation in the UK was the Retail Prices Index (RPI). This measures the price of a 'basket' of goods and services over time and has the advantage of a long history, with official monthly data being available back to January 1956. Annual data goes back to at least 1900.

An assumption for the change in the RPI is helpful as it is currently the measure which affects a number of areas of financial planning, including the returns from index-linked gilts and certain National Savings products, as well as the escalation of certain pension benefits.

Making an assessment of the likely direction of future inflation is an endeavour to which economists in both the public and private sector devote considerable effort and resource but the financial planner can make use of the collective knowledge (and

guesswork) of these experts and, by the application of some simple financial mathematics to freely available market data, avoid the need to become an expert at inflation forecasting themselves.

One method of doing this is to consider the gross redemption yield spread between an index-linked gilt stock ('linker') or index with a particular term (for the next 15 years, that means using a 15-year maturity, for example) and a conventional gilt or index with an equivalent maturity. Thus if the quoted real redemption yield for the linker is between 2.45% and 2.73% depending on the inflation assumption used by whoever calculated it and for the conventional gilt it is 4.85%, the implied range for inflation (using the geometric method, for which see below) over that period is between 2.07% and 2.34%.

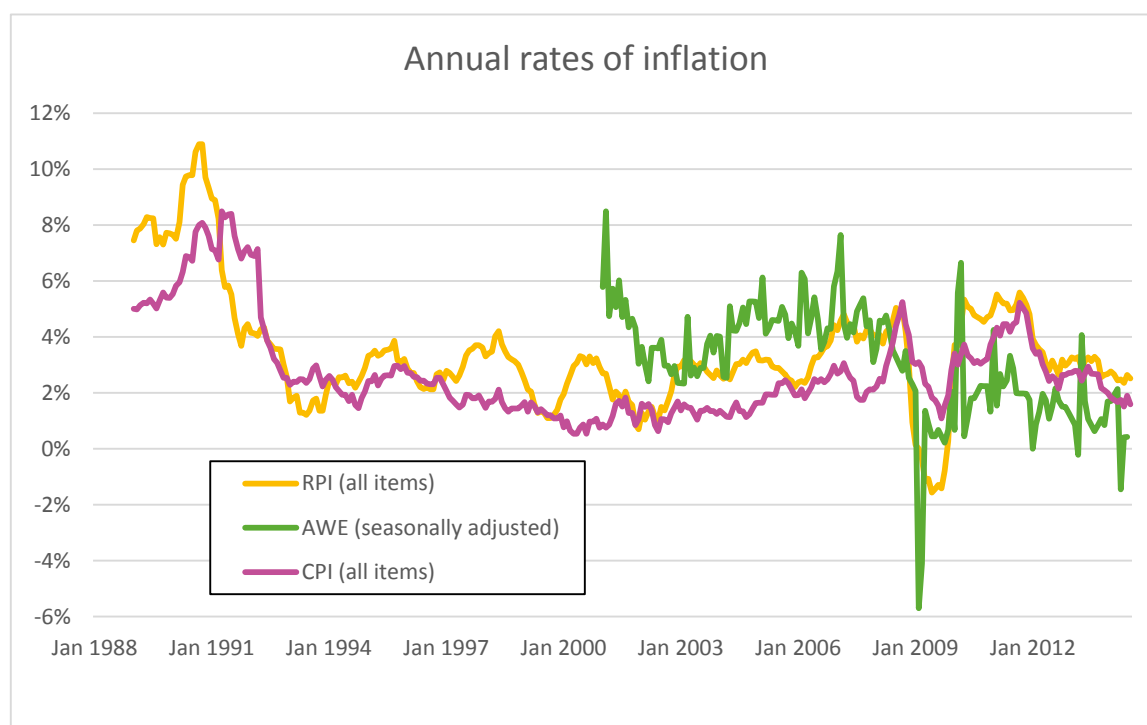
Another is to take a long term historical average and use that as the basis to agree a forward-looking assumption with the client, although this takes as its starting point the implication that future inflation will somehow be reflective of the recent past, which would have given rise to significant discrepancies at various points in history.

Alternatively, an even simpler approach is to take the 2.5% RPI target of the Bank of England's Monetary Policy Committee (MPC) as a starting point on the basis that the Bank will, over the long term, achieve that target.

### Consumer Price Index

Although the Consumer Price Index has been used for macro-economic purposes to provide a comparable measure of inflation across European Union member states since 1996, until recent years it has been of limited relevance to financial planners as it excludes mortgage interest payments and other housing-related costs such as council tax. However, it is being used increasingly as the preferred measure for the escalation of various tax bands, state benefits and certain pensions in payment (particularly from public sector schemes), which means that an explicit assumption for it is now useful in recognising that its future rate will have an impact on financial plans. In December 2003, it was adopted as the official measure of UK inflation. To date, the CPI rate has tended to be lower than that of the RPI and the MPC's long term target for it is 2%pa.

CPI-linked gilts do not exist as at September 2014 (despite consultations on the subject, the Treasury has proved reticent to issue them due to the anticipated impact on both the existing RPI-linked gilt market and the calculated liabilities of pension funds) so the method outlined above is not available. One option would therefore be to deduct the difference in MPC targets (i.e. currently 0.5%, being 2.5% less 2%) from the assumed RPI rate until such time as a superior method becomes evident; thus if the RPI rate assumption were 3%, the CPI rate assumption would also be 0.5% lower, i.e. 2.5%.



One approach that is unlikely to prove entirely robust is to take a spot rate (for example the latest published annual rate of inflation) and project that forwards over the lifetime of the plan, unless it is anticipated that this will be revised on an annual basis. Even if this is the case, it can be expected to give rise to some ongoing planning challenges as a client's goals could look easily achievable one year when the last annual inflation rate was 2% and wildly unrealistic the next if it has moved over the intervening 12 months to 4%.

### Expenditure

One of the lesser known issues with the RPI is that in order to avoid skewing the data with statistically insignificant 'outliers', the buying patterns of certain groups of consumers are excluded from its calculation. These outliers comprise what are defined as very high and low-earning households (the top 4% of households by income and pensioner households where 75% of their income is derived from state pensions and benefits). While the omission of data for poor pensioners might not be of great significance to most financial planners, the exclusion of the wealthiest 4% of households might be (according to a 2012 article at: <http://www.theguardian.com/society/datablog/interactive/2012/jun/22/how-wealthy-you-compared?uni=Graphic:in%20body%20link>

the lower limit of after tax income for the top 4% of households was around £50,000, which would probably put many planners' clients into that excluded group). The evidence is that the expenditure of such individuals is more heavily weighted towards services, whose price tends to increase at a faster rate than inflation as a whole (such as domestic help, childcare, the costs of a second home or comprehensive private health insurance or care) than goods. There may therefore be merit to making an assumption for a rate of expenditure inflation for each client, which may or may not be the same as that for general inflation. Alternatively, the Office for National Statistics (ONS) website has an inflation rate calculator for those who wish to calculate their own personal rate.

### ***Relationships of other variables to inflation***

It is generally the case with numeric assumptions that the relationship between them matters more than the absolute values of the numbers. However, when applying inflation to a nominal measure, the geometric rather than the arithmetic method is preferable as it recognises that the change in spending power of an investment (for example) that returns 15%pa when inflation is 10% is not the same as that of an investment returning 7% when inflation is 2%, even though the arithmetic difference between the investment return and inflation rate is the same (5%) in both instances.

For those unfamiliar with the difference, the arithmetic method simply deducts the rate of inflation from the nominal rate, thus 5% return and 2% inflation gives a 3% real return. As an approximation, it is often adequate, particularly where the absolute value of both numbers are relatively small as in this example.

The geometric method is a little more complicated but more accurate, particularly where rolling the assumptions forward over long periods, as is the case with financial planning. This method uses the formula:

$$\left[ \frac{(1 + \text{nominal return})}{(1 + \text{inflation})} \right] - 1$$

Thus, using the same figures as above,

$$\left[ \frac{(1 + 0.05)}{(1 + 0.02)} \right] - 1 = 0.0294, \text{ i.e. } 2.94\%$$

While the difference of 0.06% is not huge over a single year, when compounded over several decades and particularly if the absolute numbers are larger (even if the arithmetic difference remains the same), the effect can be material. For example, the purchasing power of an asset worth that increases at 5% when inflation is 2% over 30 years rises to £243 using the arithmetic method and £239 using geometric (a difference of 2%). However, at rates of 15% and 12% respectively, the arithmetic method still gives £243 but the geometric now gives £221, a difference of 10%.

### ***Earnings inflation***

Average earnings data is collected by the Office of National Statistics (ONS) and the historic series goes back to 1963 in the form of the National Average Earnings Index (NAEI), although the current measure (since 2010) is Average Weekly Earnings. This reveals that on average, earnings have generally, although not always, increased at a faster rate than prices. However, this masks a number of issues which are relevant to a financial planner, as the point of making an assumption for earnings increases in a plan is to formulate an idea of how the client's own future may look. The wider picture of the experience of the working population as a whole will not affect the ability of the client to achieve their goals (beyond the extent to which it is reflected in the price of the goods and services on which they spend their resources) but the rate at which their own earnings increase will.

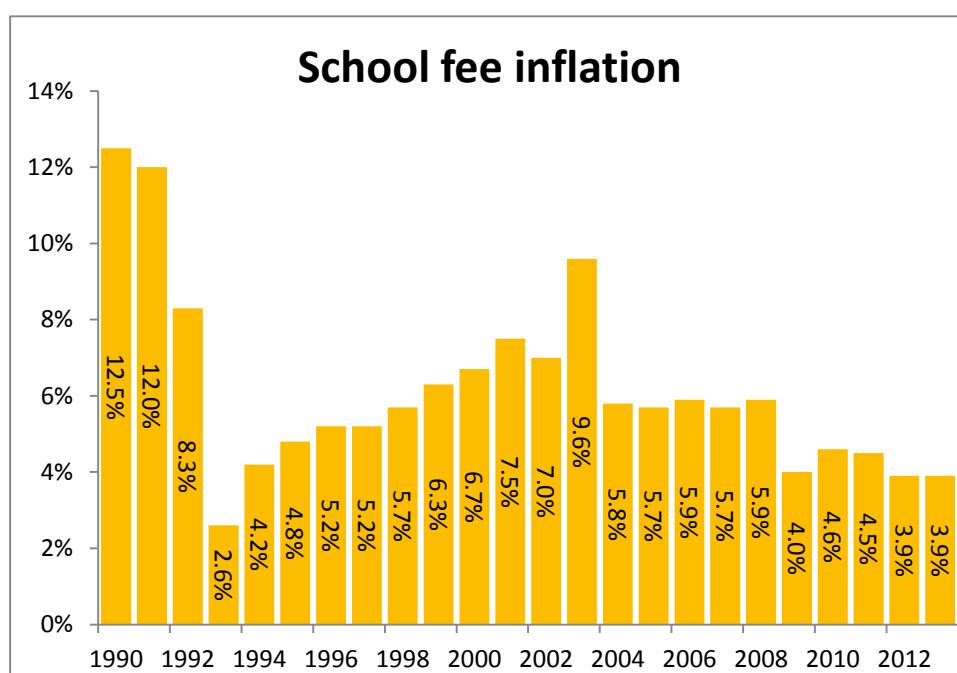
For example, a recently qualified professional in a City firm may reasonably expect to receive double-digit increases in their compensation over the next few years, whereas someone in their sixties in a relatively unskilled job (or, in periods of financial constraint, many of those in the public sector) may be lucky to achieve pay increases which match price inflation. Similarly, a business owner may decide that they will increase their prices if they wish to earn more and as long as the market will accept that increase, the prevailing rate of average pay inflation as measured by the ONS will be unlikely to feature in their decision-making process.

It is inevitably the case that where a financial plan covers two or more individuals, they may have different expectations (such expectations may or may not be realistic, which is a separate issue) as to the rate of their future earnings increases. This implies that allowing separate rates of escalation for each individual in the plan would be a wise approach.

### Education costs

Education costs, as anyone who has experienced paying them appreciates, can vary significantly both in terms of their level and the rate at which they increase. School fees, for example, tend to increase in jumps at various stages. A large proportion of the costs of education derive from the cost of staff, so the assumed cost escalation might reasonably be expected to reflect this unless there are other factors to take into account that suggest otherwise. Those who have experience of paying school fees will no doubt also be familiar with the tendency of 'extras' to boost the headline annual cost by at least 10% depending on the frequency of educational trips to such locations as Chamonix and Phuket.

While data is available from surveys that indicate the average fee rises across the institutions which responded to the survey, there is obviously no reason beyond market forces to expect that a particular institution will match these averages. In any free market, prices adjust according to supply and demand and it may therefore be helpful to compare the historic fee increases of the selected institution with those both for the average for similar institutions and price (and possibly earnings) inflation to determine whether any trends can be identified that might be able to improve the accuracy of the assumption made.



In recent years there have also been some major changes to the funding of undergraduate study, with the replacement of grants with loans and, more recently, the introduction of tuition fees after many years of tuition costs being met from general taxation. Since their introduction, tuition fees have remained largely static but an assumption for these can usefully be made, even if the vagaries of politics mean that it is liable to change without much warning. Of course, as well as the cost of the education course itself, the student still needs to live and many parents will wish to contribute to this also and there is the possibility of these increasing at a different (higher or lower) rate to that of the education component.

### Care costs

The issue of care costs is relevant only if the individual is anticipated to require it, so the starting point must be to assess the likelihood of that arising. The consensus seems to be that there is a one in three chance of requiring care at some point, although predicting the probability that a specific individual will require it is less reliable. If it has been determined that the possibility of care costs is something for which provision should be made in the plan, the questions that arise relate to the starting age for such care, its initial cost at that point, the duration of the care and the rate at which care costs might be expected to escalate.

The former is difficult to predict unless symptoms are already apparent but the risk of dementia, a major contributory factor in requiring care, is low before 65 years of age and even then, such earlier forms of dementia tend to be very different from late-onset types. After the age of 65, the risk of developing Alzheimer's disease doubles approximately every five years. It is estimated that dementia affects one in 14 people over the age of 65 and one in six over the age of 80.

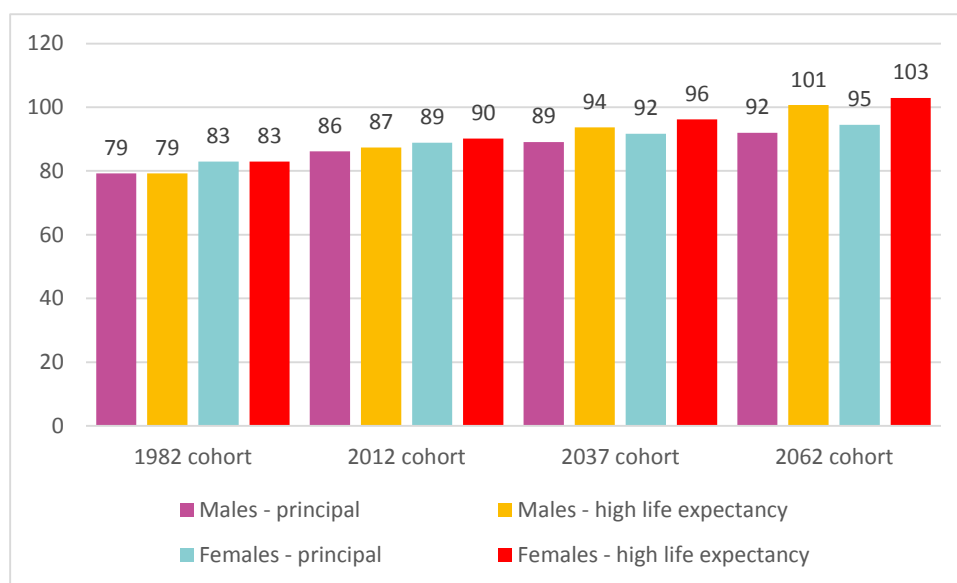
Initial costs depend on the nature of care required and where it is likely to be delivered. Care at home (the option most favoured by care recipients) can easily become the most expensive as carers may need to be on call even when not required and the ongoing costs of maintaining the home still arise. It is not difficult to reach or exceed a figure of £100,000 for full time care at home, compared to 2012/13 figures from Laing & Buisson of £27,600 for residential care and £38,000 for residential care with nursing. These are national averages that inevitably mask significant regional and provider-specific variations as well as varying degrees of 'luxury' in terms of accommodation.

While the average stay in care is just over two and a half years, this includes those who are admitted direct from hospital; when these individuals are excluded, the average duration of care for an individual funding their own care is four years, with one in eight receiving it for at least seven years, the longest duration being over 20 years. Not all conditions that result in a need for care impair life expectancy and unsurprisingly, wealthier people often require care for longer (whether due to being admitted earlier or being in better health generally).

Although data is available from Laing & Buisson on the rate at which care costs escalate, it is important to appreciate that the majority of care is purchased by local authorities and as such, they are able to negotiate effectively to keep the rates of increase that they pay low. An individual who pays for their own care is unlikely to have such purchasing power and may therefore expect to pay a significantly higher escalation rate than the published average; as with education costs, comparing actual data for specific providers with the prevailing rates of inflation probably offers the most robust route.

### Life expectancy

According to the ONS, a 65-year-old male currently has a one in three chance of living until age 90 and on average, a man and woman aged 65 can expect to live another 21.2 years (to 86) and 23.9 years (to 88) respectively. This is projected to increase for men and women respectively to 27 (to 92) and 29.5 (to 94) years by 2062. However, these are averages; for the healthiest element of the population the increase is projected to be 35.7 for men and 37.9 for women, i.e. well in excess of 100. Financial planners might usefully wish to consider the likelihood of their clients falling within the healthiest cohort, as an extra eight years of drawing on a portfolio (particularly when this may be while funding care costs and therefore potentially at a higher level than normal expenditure) could have a significant effect on its sustainability.



While some planners run life expectancy to around 100, others go even longer, to 120 in at least one instance. However, while this might seem to be a cautious assumption (only one person has ever apparently reached age 120), the outcome could be the opposite if the cost of making their capital last for several additional decades implied that they would need to take significantly more risk than they wish and/or scale back their goals in order not to run out of resources in what might still be a fairly unlikely scenario. It is also worth noting that the assumptions made about life expectancy can have a material impact on the

### Morbidity

Of course, it is all well and good living to a ripe old age but one consequence of living longer than our ancestors is that more of this period may be spent in poor health, although improved standards of safety mean that the incidence of crippling injuries at work is lower than it once was. While statistics for the likelihood of serious injury or poor health are of limited use in financial planning (if someone contracts cancer it is of little import to their financial plan whether the chance of them doing so was 0.5% or 50%), an assumption as to the continued health (whether good or bad) of the client is useful in framing the extent to which it might be appropriate to expend resources on insurances to protect against the financial implications of their long term health being less than desired.

A financial plan should also address the impact of morbidity on the achievement of the client's goals, as loss of earnings can have a material impact on this and while the main plan may assume continued (if applicable) good health, a separate scenario in which this is not a core assumption is valuable in determining the extent to which action might be necessary to offset those risks.

### State benefits

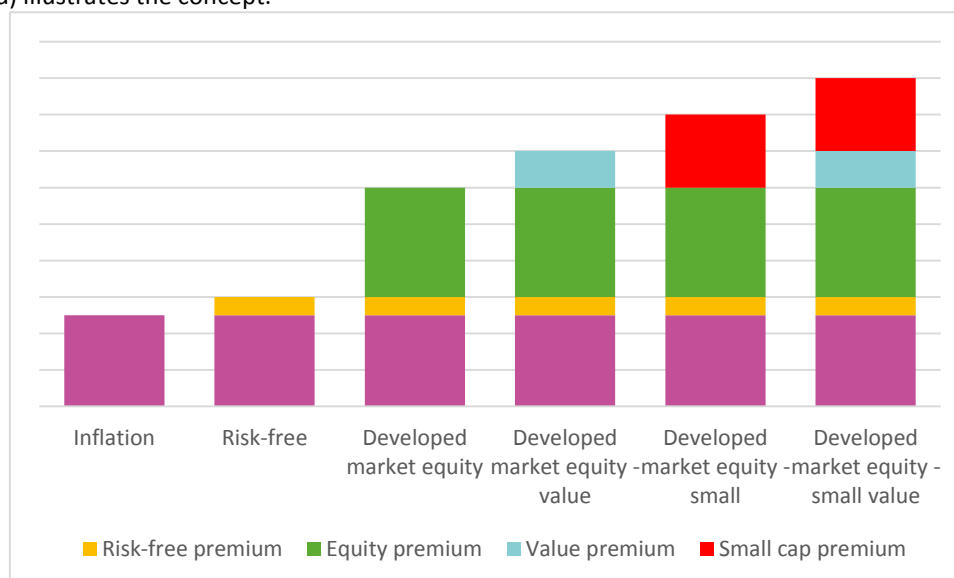
State benefits, for many clients of financial planners, may well be relatively insignificant in relation to their overall resources. Nevertheless, most clients will be entitled to a state pension and may be entitled to benefits such as employment and support allowance (previously incapacity benefit) in the event of incapacity. Fortunately the inflation rates at which these increase are set by the government, so the planner's task is limited to assessing the extent to which the receipt of such benefits should be assumed in the plan, given the eligibility criteria. Although the coalition government introduced the 'triple lock' inflation protection for the basic state pension in 2010, politicians have a generally unimpressive record when it comes to long term consistency and cross-party collaboration on matters of public finance and there is no certainty that this will continue in its current form for the duration of a typical financial plan. Regular updating of state pension forecasts to cater for the changing state pension environment and making client-specific assumptions about the likelihood of accruing the full accrual probably offers the most robust basis for estimating the quantum of future entitlements.

### Investment returns

At its simplest, the investment universe can be split into debt (lending) and equity (owning). Based on Modigliani's research (and logic), it is reasonable to assume that the latter (which is riskier) should have a higher expected return than the former, as no rational investor would opt to own a risky asset if it were expected to deliver the same return as a safe one.

From there the choices increase. Some favour a geographically-based approach to dividing the investable universe, some a thematic one, some – including, apparently, successive UK financial services regulators – a tax one (pension funds and ISAs having higher assumed returns than taxable accounts) and others a framework derived from the multi-factor model research propounded by Fama & French among others.

One way of translating these into a coherent structure is to start with the assumed inflation rate and add various risk premia to this according to the asset classes being employed. For example, by adding a premium for the 'risk-free asset' to this, a starting point for the basic low risk asset (whether cash or short-dated high quality government debt) is obtained. Further risk premia are then added to this assumed risk-free rate for each of the preferred asset classes, whether they be developed market equities, emerging market debt, US equities, technology companies or real estate funds. Such an approach brings the advantage of relating the return assumptions for each asset class to both the inflation and risk-free rate assumptions, whereas calculating each assumption individually can lead to some anomalous relationships if some are revised in isolation. It is also easy for the client to understand the changed return assumption if the basic inflation assumption is revised in the future. The chart below (with labels omitted) illustrates the concept.

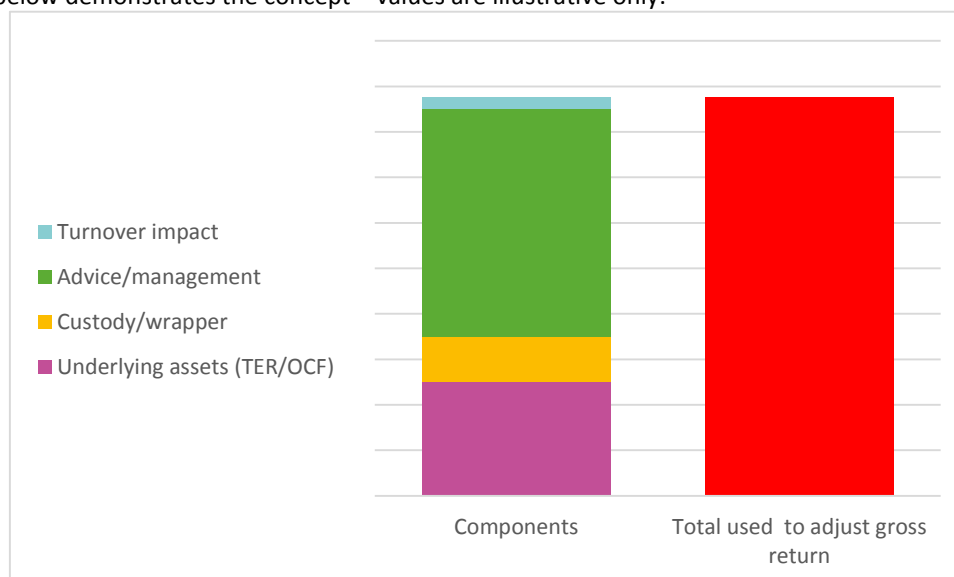


The precise method used is less important than the robustness of the approach and the extent to which there is validated academic research to provide some support in the event that the selected methodology is ever challenged (whether by a client or a judge). Factors to consider include:

- Economic data appears to be fairly poorly correlated with stockmarket returns, particularly in the short term;
- In a free market, there is a good chance that current prices reflect all current known information and that they adjust quickly to any new information;



- In the long term, the returns earned by an investor will broadly reflect those of the asset class mix that they own, less costs;
- Individual forecasters are rarely (if ever) consistently accurate in their predictions; however, since market participants receive and react to (or ignore) such forecasts when making their decisions as to whether to buy or sell assets, the aggregate of investors' expectations are rapidly reflected in asset prices;
- While investors may sometimes be individually irrational in their decisions, this does not translate into a systematic irrational behaviour which can be exploited effectively on a consistent basis – bubbles burst when enough investors decide that the prices being asked no longer offer them an adequate return to compensate for the risk involved;
- For a typical basic rate taxpayer who does not use their capital gains tax exemption every year, the tax treatment of an OEIC or unit trust, ISA, offshore fund or pension fund is almost identical;
- There is significant peer-reviewed research from multiple researchers looking at multiple markets around the world to suggest that certain types of assets exhibit reliable long term return premia compared to others (bonds outperform cash, equities outperform bonds, small companies outperform large and value companies outperform growth ones). Long term data is available to indicate the historic magnitude of these return premia and already takes into account changes in the comparison variable (for example, over the period 1975-2013, depending on the data used, the annualised return from UK value and small company shares exceeded that of the market as a whole by around 1% and 3% respectively) and thus can then form the basis for a framework without being reliant on the absolute level of historic returns;
- There should be a reasonable rationale, supported by published evidence, for the approach adopted;
- More detail (such as separate return assumptions for particular market sectors) means more work and, beyond a certain point, does not confer any additional accuracy on the results;
- One approach that has gained currency in recent years (although it is not new, having been in widespread use in financial planning on the other side of the Atlantic by the 1990s at least) is to model future returns using stochastic techniques, such as Monte Carlo simulation or bootstrapping. While such techniques are outside the scope of this paper, practitioners wishing to employ them in financial planning should, as with any tool, do so in the knowledge of their limitations, notably that if it is hard to predict straight line returns accurately, the idea that the results will be made more accurate by making estimates for additional unknown variables might be regarded as somewhat counter-intuitive. While one of the 1,000, 10,000 or 1m scenarios run might actually be reflective of what happens in reality, the value of this to the client might be limited if they are unable to identify in advance which one it is and what actions need to be taken to achieve it.
- Costs can have a significant impact on the outcome of any investment strategy and should therefore be taken into account irrespective of the basis used for assuming the underlying asset class returns (and index returns do not take account of any costs that a real investor would face). These comprise the ongoing charges figure (previously known, albeit not wholly accurately, as the total expenses ratio) as well as custody/platform charges and the costs of portfolio turnover. Fortunately it is (relatively) easy to obtain the former from the fund managers as well as third party data suppliers. The second may be easy or less so depending on the opacity and complexity of the custodian's charging structure but the latter is still commonly buried in the annual reports and accounts of a fund. Until accurate data, calculated on a relevant basis (preferably the US Securities and Exchange Commission methodology as opposed to the EU one, as the latter can give rise to a negative turnover figure which includes transactions driven by cashflows rather than purely the manager's deliberate transactions), is widely available, it may be that assuming that the median figure of around 60% for equity funds translates to an annual cost drag of 0.6% (as concluded by various researchers) offers a suitable compromise between accuracy and practicality. For directly invested portfolios, there is no substitute for scouring historic valuations and extracting the data from transaction reports over as long a period as possible. Again, the chart below demonstrates the concept – values are illustrative only.



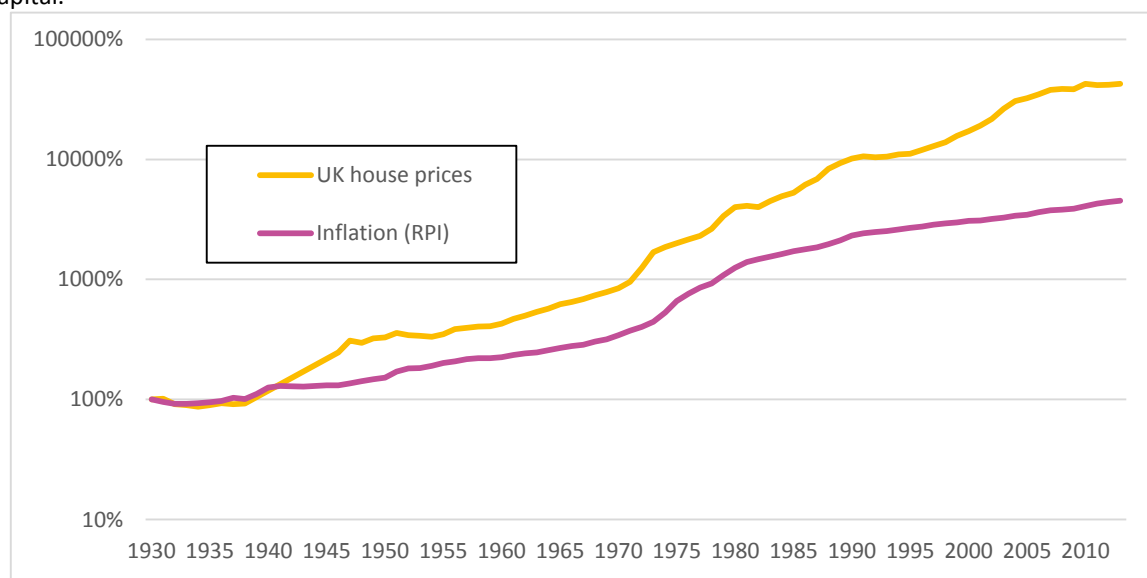


- Long term tax drag on a portfolio is one of the hardest variables to model accurately although some cashflow modelling tools do manage to apply taxes to realised gains that the plan generates; how accurately they do so depends to an extent on the accuracy of the base cost data entered, the return assumed and also on the timing of disposals being determined correctly. In reality, the latter two will almost inevitably be wrong and so reasoned assumptions offer as good an approach as any. One option that is fairly simple for those whose cashflow models do not accommodate tax on gains is to apply a factor to the gross return rate (after the asset costs and turnover impact but before custody and management/adviser charges and portfolio turnover impact) based on what proportion of the return is likely to be lost in tax. For example, an investor who has all their portfolio in wrappers with no or minimal ongoing taxation (e.g. ISAs, pensions, offshore bonds) may ignore this, whereas a higher rate taxpayer with most of their substantial portfolio in a taxable account and who uses their CGT exemption every year in the course of rebalancing might need to assume a rate of up to 28% of the annual growth going in tax. In such circumstances, reducing the gross assumed return to allow for tax is undoubtedly simpler than trying to forecast future tax rates, bands, exemptions and rules.

### Property and other illiquid assets

Most investors probably have a strong view that property is an asset class that has delivered high and fairly stable returns over the long term; in short, an ideal investment. However, it is important to distinguish for financial planning purposes between several types of property; notably the family home, rental residential property and commercial property.

In many cases, where the client already occupies their 'forever' home, the future return on the family home will be of no relevance to the financial plan beyond the contribution it makes to the estate value on death. However, where there is an expectation to trade up or down at some point in the future, the future value of both the current and future home will have an impact on the plan, as there will be either an increase or a decrease in the value of other assets at the point when the transaction occurs. While historic price data is available from sources such as Halifax, Nationwide and the Land Registry, this only goes back to 1983, 1973 and 1995 respectively. The ONS has a series going back to 1930 but this reveals that despite an apparently impressive increase of 42,400% between 1930 and 2015, prices really only took off in the 1970s – in the 40 years from 1930 to 1970, they rose by a comparatively small 743%. When inflation is taken into account, the total return in terms of purchasing power increase falls to an annualised 2.7% over the whole period, which is only slightly higher than the 2.3% real return between 1930 and 1970. The full series is shown on the (log-normal scaled) chart below, with inflation data from Barclays Capital.



There are also some issues with index data for property values, including:

- Values may be based on actual transactions (i.e. a market price) or a valuer's estimate;
- Prices, however they are determined, do not take account of the capital costs incurred by owners on either ongoing maintenance or improvement work. A property bought for £100,000 on which £50,000 has been spent but which is then sold for £130,000 may appear to have delivered a 30% rise in value but the vendor will find that their own experience is different when they count the cash that they have left in the bank afterwards.
- Property price performance varies materially across the country and even within a particular region.
- If seeking to derive information on price volatility from historic data, the frequency of valuation points can have an impact that can mask significant variations. An asset that is priced monthly or quarterly might look less volatile than one priced by the minute but this is not necessarily a reflection of its underlying riskiness.

For investors in property who expect a return in the form of a rental yield, the question arises as to what impact this should have on the assumption made for capital growth. If the planner's approach is to use a 'total return' assumption for asset classes, then

there is logic to deriving the capital return assumption by deducting the actual or assumed yield from the total return assumption to avoid double counting the yield both explicitly and within the total return. Commercial property leases commonly oblige the lessee to maintain it at their own expense, which reduces the owner's exposure to those costs; with residential lettings, such maintenance is usually the owner's responsibility, which reduces their return. Even discounting maintenance, there are other costs to consider, such as agents' and legal fees, changes to legislation (such as requiring additional fire precautions, wider doorways etc.) and the impact on the rental yield of voids (i.e. when the property is empty).

For other illiquid assets, such as holdings in unquoted businesses, there are as many potential rates at which to project their value as there are assets, although business valuation methods are governed by international accounting standards and guidelines.

However, given the need to take account of both the fact that the higher risk implies a higher expected return and that the higher risk might give rise to a total loss, planners may, in the absence of a compelling counter-argument, reasonably elect to assume a return that keeps pace with price inflation (or even stays level in nominal terms, implying a decline in purchasing power) and review the assets' values regularly with the client to maintain touch with reality as closely as possible. It is worth bearing in mind that business owners commonly have an inflated perception of the value of their business, particularly if its continuing success is dependent on their ongoing contribution; the only value that really counts is what a third party will actually pay for it at the time it is sold.

Finally, individuals will own some assets whose value can be expected to depreciate, notably modes of transport (of a variety of types, including motor vehicles, boats and aircraft). It has been suggested that there are only two good days experienced by boat owners – the day it is bought and the day it is sold.... A negative growth rate is therefore appropriate, although particularly in the case of motor vehicles, where regular replacement is likely to be required, it may be preferable to model periodic capital expenditures, or ongoing lease costs if applicable, as retention of such an asset until the market value is negligible is unlikely.

### ***Tax rates and bands***

Tax rates can inevitably be expected to rise and fall over a client's lifetime according to the political complexion of the government of the day and the prevailing economic environment. To attempt to predict anything other than the continuation of the current regime (planners employing proprietary cashflow modelling tools will have limited scope to do otherwise anyway, normally restricted to the rate at which thresholds will increase) would appear to offer little in the way of advantage over attempting to predict which way the taxation wind will blow in future decades. Since governments set the rates of increase in thresholds, the planner's decision is then limited to whether to opt for an inflation rate of either zero or their assumption for RPI or CPI.

### ***Vesting pension benefits***

Until the 2014 budget, notwithstanding the availability of various types of drawdown, annuity purchase was the option pursued by most investors in defined contribution pension schemes. Clearly, the individual's circumstances will dictate the most appropriate route or routes but as a starting point, a simple default assumption may be helpful before considering whether more complicated options might be expected to deliver a superior outcome.

One approach is to assume, at outset at least, that the individual will convert their accumulated pension fund to pension on the simplest and most expensive basis, which would translate to using the entire fund to purchase an index-linked taxable pension paid annually in advance with 100% survivor's benefits. If this approach suggests that the desired goals are achievable, it provides scope for flexibility (such as higher expenditure, more gifting and/or a lower risk approach in the non-pension assets) elsewhere if and when the future does not match the plan but if it does not, there is the opportunity to vary some or all of these parameters to bring it closer to the target. The greatest positive impact is generally by opting for a lower rate of escalation, as the annuitant generally has to have a life expectancy that is materially above the average before the total return from an index-linked annuity exceeds that from a level one; provided that there are other assets available, these may offer a more effective route to meet future increases in expenditure.

An alternative would be to assume the consumption of the entire fund by means of drawdown either at outset or gradually over the member's anticipated lifetime. It should be appreciated however, that this may well be inappropriate for many investors and so may be better limited to employ as a planning assumption after the client relationship has become established and the issue has been discussed in detail rather than as a starting point when the engagement commences.

### ***The risks of conservatism***

It is often tempting, when constructing a financial plan, to opt for a relatively high rate for those variables that impact unfavourably on the plan (such as inflation and, somewhat counter-intuitively, life expectancy) and to take the opposite approach with the factors which have a positive impact (investment returns). While this is superficially attractive as a 'worst case', there is no free lunch in financial planning and there will inevitably be an impact of such decisions elsewhere in the plan.

In the example cited, the consequence would be to increase the present value of the goals (i.e. current and/or future expenditure) and reduce the present value of the resources available to meet them. The effect could therefore be that the client's stated goals appear unaffordable, thus leading them to conclude that they need to take more risk (in the hope of achieving a higher return), spend less now (to increase the available current resources) or scale back their goals (to improve the chance of achieving them). Such consequences are unlikely to be welcome and if they turn out to be unnecessary because the assumptions used were indeed too conservative, the client will have either taken more risk than necessary (either resulting in a loss that they did not need to experience or increasing the value of their estate and thus their ultimate tax liability) or deprived themselves of the lifestyle that they wished to have.

Since nobody has yet found any reliable way to know whether their assumptions about the future are correct or not (and, more importantly, in which directions by what magnitude they will be wrong), informed discussion and agreement with the client, accompanied by regular internal reviews of the assumptions used, constitute an essential part of the planning process.

### ***Spurious precision and calculation overconfidence***

While the increasing availability of technology has allowed financial planners to carry out cashflow modelling in ways of which practitioners in the past could only dream, spreadsheets are able to produce calculation outputs to a high degree of precision. However, a spreadsheet has no idea what the symbols it processes mean; if it is asked to deliver outputs to a dozen decimal places, it will do so with no awareness of the value of that to the end user of those outputs. Given the inevitable errors in almost all the assumptions made, any more than one or two decimal places is therefore unlikely to confer materially greater validity on the results of a calculation, although where the decimal places are in a rate used to escalate or discount another variable over a long period, they can have a significant impact on the magnitude of such results.

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### ***Sample data sources***

(This is not a comprehensive listing)

#### Inflation

RPI and CPI differences: <http://www.ons.gov.uk/ons/rel/cpi/consumer-price-indices/july-2011/implications-of-the-differenced-between-the-cpi-and-rpi.pdf>

RPI: <http://www.ons.gov.uk/ons/datasets-and-tables/data-selector.html?cdid=CHAW&dataset=mm23&table-id=2.1>

CPI: <http://www.ons.gov.uk/ons/rel/cpi/consumer-price-indices/index.html>

Personal inflation calculator (not accessible in all browsers):

<http://www.neighbourhood.statistics.gov.uk/HTMLDocs/dvc14/index.html>

#### Earnings

NAEI and AWE historic data: <http://www.ariespensions.co.uk/public/stats/tables/nae.htm>

#### Education costs

School fees: <http://www.isc.co.uk/research/Publications/annual-census>

#### Long term care

Later life statistics: [http://www.ageuk.org.uk/Documents/EN-GB/Factsheets/Later\\_Life\\_UK\\_factsheet.pdf?dtrk=true](http://www.ageuk.org.uk/Documents/EN-GB/Factsheets/Later_Life_UK_factsheet.pdf?dtrk=true)

Length of stay in care homes: <http://www.pssru.ac.uk/pdf/dp2769.pdf>

#### Mortality

ONS 2012 data: <http://www.ons.gov.uk/ons/rel/lifetables/historic-and-projected-data-from-the-period-and-cohort-life-tables/2012-based/stb-2012-based.html>

#### Investment returns

Barclays Capital Equity Gilt Study (published annually)

FSA publication (updated every few years and has some background on the rationale behind projection rates): [www.fsa.gov.uk/static/pubs/other/projection-rates12.pdf](http://www.fsa.gov.uk/static/pubs/other/projection-rates12.pdf)

See also: <http://www.fca.org.uk/static/pubs/policy/ps12-17.pdf>

#### House prices

ONS index: <http://www.ons.gov.uk/ons/rel/hpi/house-price-index/march-2014/rft-annual-march-2014.xls>

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