

CAPITAL GENERATION PARTNERS

Strategic Spending

A First Principles Approach

September 2015

Preface

Following on from First Principles Diversification, our research series which examined the fundamentals of diversification, we have turned our attention to another area of portfolio management - namely spending. Our goal, as with First Principles Diversification, is to provide wealth owners, endowment managers and their advisers with some analysis of the fundamental principles underlying the concept in question and with some practical steps to take when considering the strategy and management of their portfolios.

Spending is an under-researched area of wealth management, being typically seen as the frivolous by-product of the serious business of investment management. This leads to a situation where the needs and wishes of beneficiaries are viewed as antithetical to any capital growth portfolio strategy and a zero sum argument between those who want to spend and those who want portfolio longevity and growth.

Our argument is that this is the wrong approach and that spending should be incorporated into portfolio management strategies for two basic reasons - firstly in order to ensure that the planned spending can take place and secondly in order to enhance the portfolio's resilience and ability to sustain market shocks. This, it seems to us, is a useful twist on the business of managing portfolios. It means that those who wish to spend from the portfolio can find a way to reconcile their interests with the interests of those who require capital growth. We think that this will result in more robust portfolios which will better meet the needs of the owners and the beneficiaries.

Executive Summary

1 Investment strategies and spending strategies are not separate considerations – each affects the other

- Wealth owners often pay considerable attention to the design and implementation of their investment strategy whereas spending is often an afterthought – being simply the product of the investment strategy to be disbursed according to the needs of the owner.
- But there is a crucial relationship between investment and spending which means they should be designed and operated in tandem.

2 Risk is the connecting factor. Taking risk that is adequately rewarded is required to generate returns, but it increases the chances of losses and failure to meet spending objectives

- Investors must accept volatility if they are to achieve investment returns.
- Even well run portfolios do not achieve perfectly consistent returns.
- Portfolios targeting 4% real return do not achieve 4% every year. This the long run average target. From year to year there will be considerable fluctuation.
- This fluctuation is not particularly damaging over the long run if there are no payouts.
- But most portfolios have some need to make payouts – to support spending of various kinds and this is where volatility becomes damaging.

Executive Summary continued

3 Endowment and portfolio owners need to understand their spending needs to design a suitable spending policy

- Some endowments are constructed to make regular payouts – to support beneficiaries or to make regular, preagreed payments to charitable causes for example.
- Others need to spend all their money immediately – medical research charities seeking a vaccine for ebola fall into this category.
- Others have very few ongoing payment demands and very long term time horizons.
- These very different profiles result in very different approaches to volatility in the portfolio.

4 Those portfolios which need to make payouts need to manage volatility because of the asymmetry of gains and losses and the opportunity cost of spending

- Firstly, volatility is potentially damaging because it takes a bigger relative gain to recover from a loss than the size of the relative loss in the first place. A 50% loss in a portfolio requires a 100% gain to make it back and restore the original position.
- If one amplifies this loss to the portfolio by, at the same time, also making a payout from the portfolio to support spending, the amount needed to correct the loss is even bigger.
- Making a drawdown at the wrong point in a portfolio's evolution means that it will be more difficult for the portfolio to make up losses, even if markets improve.
- Secondly, markets tend to overshoot on the upside and on the downside and to experience a correction afterwards.
- Paying out at the bottom of a market trough and thus taking a part of the portfolio out of the market at this point means the portfolio will not experience the upward correction that follows the trough.
- Therefore paying out of a portfolio with high volatility can result in lower long term returns and a considerable erosion to the value of the portfolio.

5 *Inflexible spending policies damage portfolio resilience.*

- Spending in itself is not the real problem. The real problem is inflexibility in spending policies which mean that there is no ability for the portfolio and spending from it to flex in order to absorb shocks in the investment world.
- There are several different ways for inflexible spending policies to have a negative effect on the portfolio as a whole but they all result in impaired resilience of the portfolio.

6 *Volatile portfolios which have inflexible payout policies may run out of money.*

- Portfolios of \$100m targeting 4% real return with a \$4m annual payout policy have a greater than 5% risk of running out of money around year 18.
- Increasing the real return target to 5% while sticking with a \$4m annual payout policy, with the aim of creating a cushion between the return target and the payout required, worsens the situation resulting in a greater than 5% risk of running out of money around year 16.

7 *Managing this risk by reducing spending or spending linked directly to current portfolio value may also be suboptimal*

- One option is to simply reduce spending.
- But this changes the relative balance between the current and future beneficiaries. If we view spending taken out of the portfolio and monies remaining in the portfolio for investment as all part of the same pot, which they are, this is robbing Peter to pay Paul. And beneficiaries may object.
- Another option is to make spending variable rather than fixed, for example, by paying out a percentage of the portfolio rather than a fixed sum every year.
- This allows the portfolio some robustness in the event of downturns but it also imposes difficulties on beneficiaries who may have fixed costs to meet, as volatility from the portfolio is directly transferred to volatility in spending.

Executive Summary continued

8 Smoothing and contingent spending policies can help to manage the impact of volatility

- Smoothing policies impose a rule whereby spending is a weighted average of the values of the portfolio over the previous X years.
- This allows the impact of volatility on the portfolio valuation year by year to be smoothed so that spending remains reasonably stable rather than subject to big jumps up and down.
- Contingent policies impose other rules, such as that spending may only be made from real gains (ie, if the portfolio is above its original value) or that spending may only be made in good years, regardless of its relationship to its original value.
- As contingent policies are binary, they can result in considerable volatility in permitted spending but can significantly increase long term portfolio value.

9 Hybrid policies combining smoothing and contingent policies can help to sustain portfolio values whilst protecting spending levels.

- One such hybrid allows a fixed real value of the portfolio to be spent when the portfolio is above its starting value but when it is below the original value, to require spending to be reduced by means of a smoothing policy.
- Comparing a portfolio with a 4% real return target and a 3% hybrid spending policy with the same portfolio with a simple 3% spending policy without smoothing or contingency, the amounts spent remain roughly the same but the probability of a 10% drop in spending between any two years reduces from about 30% to 6%. This provides valuable additional certainty for beneficiaries in terms of what they can spend.

Conclusions

Portfolio strategies are usually built around investment strategies. However, if spending from a portfolio is, or will be required, a spending strategy is as important as an investment strategy.

This is because portfolios must take risk in order to achieve returns. Although the volatility resulting from risk can be absorbed in portfolios with very long time horizons, portfolios which have spending requirements can fail if volatility and spending are not managed in tandem.

A common mistake is to try to manage this problem by changing the investment strategy alone. But this is not sufficient - and can even worsen the problem. Pushing up a returns target in order to try to meet spending requirements will increase volatility and heighten the probability of the portfolio running out of cash.

The key is to manage the spending side of the equation as well so that the impact of volatility is contained.

Small amounts of flexibility in the spending policy allow the volatility that results from risk to be absorbed relatively harmlessly for the benefit of the portfolio in investment terms.

This does not necessarily require spending to be reduced - or mean that beneficiaries have to manage huge fluctuations in their spending power. Spending policies can be designed around the unique spending needs of the beneficiaries in order to provide them with some certainty as to their income and to ensure that planned spending can be achieved.

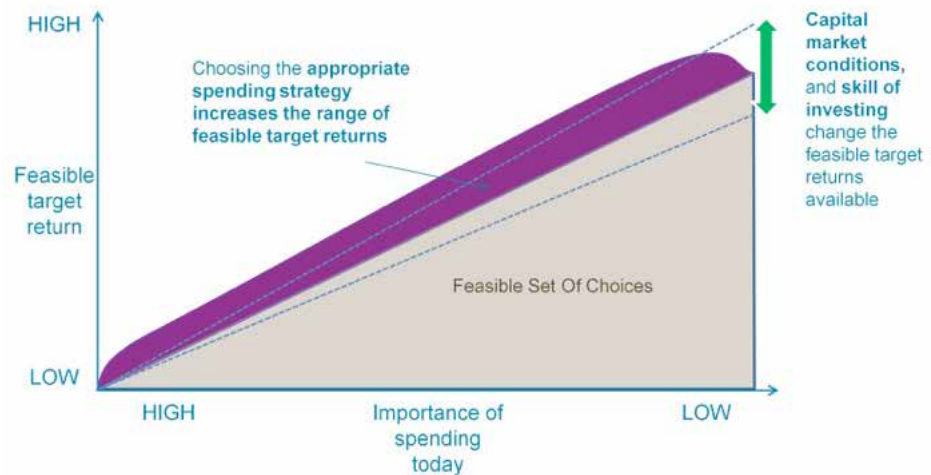
Introduction - the importance of a considered spending policy

Spending is usually seen as the end result of an investment policy. A pot of money is invested in the markets and any gains are to be spent or reinvested depending on the desires and needs of the wealth owner. This approach requires the wealth owner to adjust their spending according to their investment returns, spending less when returns are low and delaying bigger purchases until returns have recovered, or else reducing the ability to spend in the future. This seems like a common sense approach and one which most people take in their day-to-day lives – a good year at work means a nicer holiday, a tougher year means a more modest holiday or no holiday at all.

The same approach prevails in the wealth management space. Those with responsibility for managing a pot of money will spend time, effort and resource on the investment piece of the puzzle. Industries have grown up to manage this pot: investment consultants, advisers, wealth managers are only too willing to showcase what they can do on the investment side, generating detailed investment strategies, asset allocations, identifying investment opportunities and reporting processes, all with the goal of generating returns – either in the form of capital gain or in the form of income. On the other side of the equation, the spending side, the owners or beneficiaries of the pot take the proceeds of the investment activity and spend. They may choose to be careful or profligate but they view themselves as receivers of the output on the investment side.

Again, this seems like the common sense approach – but the common sense solution is not always the best solution and in this paper we look at ways to take a more strategic approach to spending.

The link between Spending Strategy and Investment Strategy



As this chart demonstrates, the feasible range of investment returns that can be targeted are initially dependent on two variables:

- How long a pot of cash can be tied up in investment (i.e. whether there are any liquidity requirements) and
- The underlying market opportunities and the skill of the investment manager in shaping the portfolio properly in accordance with the prevailing macro conditions, identifying the right investment opportunities, weighing risk correctly.

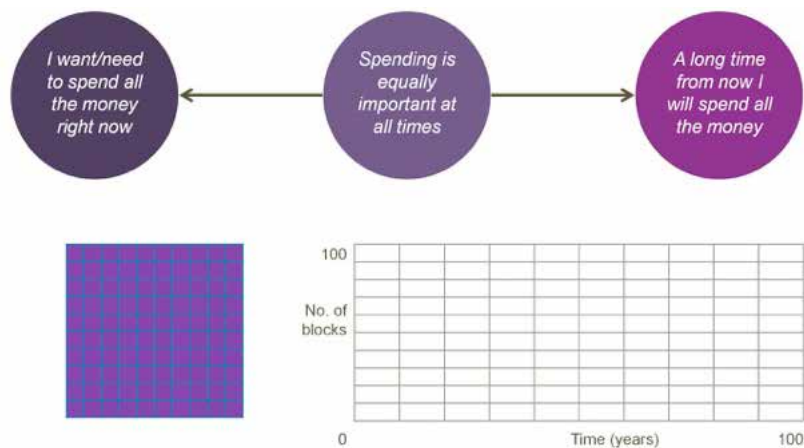
The second of these two factors tends to dominate and indeed superior investment strategy can steepen the gradient of the blue dotted line so that better investment returns become available to investors who can tie up their money for longer. But what the purple slab indicates is that there is another source of available return which can be achieved by employing a more sophisticated spending strategy than simply spending whatever is spat out of the investment machine. Employing a strategy in this area is as important as employing an investment strategy and can have a significant effect on total portfolio growth. Indeed by considering both investment and spending strategies together it is possible to target higher investment returns, increasing expected portfolio growth while meeting the desired spending needs.

Mapping spending profiles

Our starting point is what we might call the gold bar problem. Someone who has a bar of gold which they can neither sell nor swap is no wealthier than someone without the bar of gold. Wealth is a function of what you can spend. Thinking about what you spend (not only the sums you spend but also when you spend and with what frequency) allows us achieve some control over the gold bar problem.

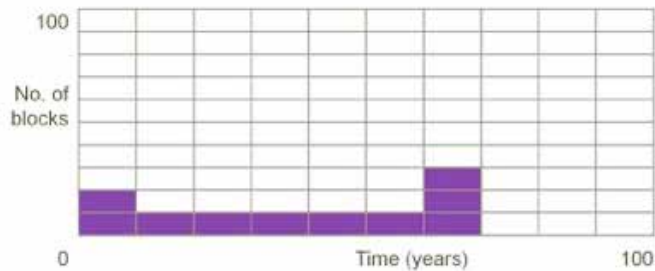
So our starting position is that wealth owners need to be able to describe and map their spending profile. This means that wealth owners or beneficiaries need to be able to plot their spending profile on a timeline demonstrating their own personal time value of money – quantifying how much they need or want to spend, at what rate and when. For some, there will be a need to spend all the money right now or in the very near future. A pot of money earmarked to pay school fees over the next few years could be described in this way. Likewise an endowment established to control the ebola outbreak would prioritise immediate expenditure on primary healthcare, hygiene measures and vaccine research now rather than proposing an advanced medical centre to be built ten years from now. By contrast, someone building a pot of money to leave to grandchildren has no immediate need for spending but will want to spend (in this case gifting to grandchildren is the same as spending) all the money a long way in the future. And then there are cases along the spectrum between these two examples. A big house purchase straight away means a big lump of spending now followed by a need for more modest ongoing spending every year to maintain the property. A commitment to funding university scholarships means regular amounts of expenditure every year of the commitment, with perhaps some lumpier commitments along the way as the university asks for more support in certain years.

These profiles can be plotted on a graph – each individual takes their pot of money (the purple squares) and distributes the pot throughout a lifespan or other relevant period of time.



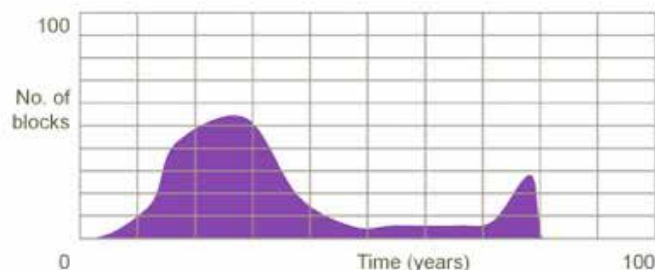
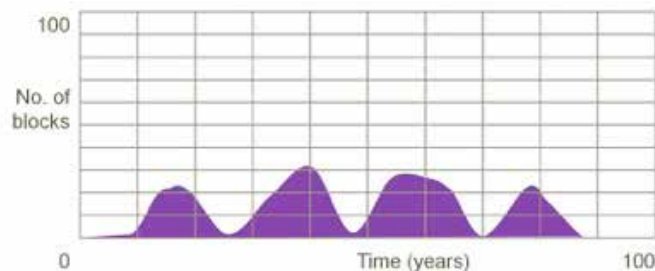
Examples:

This first example illustrates the foundation established to combat ebola – with all expenditure earmarked for the first couple of years.



The second example illustrates perhaps a more ordinary situation – someone who spends out a bit in the early years (perhaps on a property) and then has some ongoing expenditure throughout the decades with a lump of expenditure at the end when the estate is distributed.

The third graph illustrates the spending profile of a charity aimed at funding ad hoc capital expenditure projects without very much in the way of ongoing operating finance required and the fourth graph represents a charity established to build a large new university wing and then provide some ongoing financing for scholarships.



From this starting point, we can model all the spending of an individual or an endowment – both the spending that has been made and all future spending. This we can do by placing a red line in the graph to represent now – all blocks to the left of the line would therefore be spending that has happened and all blocks to the right are spending that is yet to happen.



The red line in the graph represents the moment of evaluation – where the value of spending to date (coloured dark purple) can be mapped alongside the value of potential future spending (coloured light purple). At this point we can go further and say that the value of potential future spending is the same as the value of the portfolio at that point. So we can also say that the total value of the system we have built is made up of the total of all money already spent plus the value of the portfolio today.

System total value = value of portfolio today + total spent

We can also move the red line out into the future, should we wish, so that planned future expenditure can be taken into account and deemed “realised” and then compared to the remaining value of the portfolio. Taken together these two elements add up to system total value.

It is clear that the general goal of wealth owners is to maximise system total value. But this does not give any instruction as to when they prefer spending to occur– or to put it graphically, the shape of the purple blocks in the graph above. Is the goal to maximise the value of the portfolio at a particular point in time? Or is the goal to ensure maximum expenditure? Is the goal to leave a huge pot at the end? Or to maximise expenditure along the way regardless of the final value of the portfolio? To characterise crudely, trustees might feel bound to maximise portfolio value at the end of the system’s life whereas beneficiaries might want to maximise expenditure during the life of the system. Articulating spending needs through a spending profile can help to clarify the objectives. The aim of portfolio strategy should then be to maximise system total value while enabling the realised spending to match the spending profile as closely as possible over time.

Thinking about the portfolio as a closed system allows us to make two fundamental points:

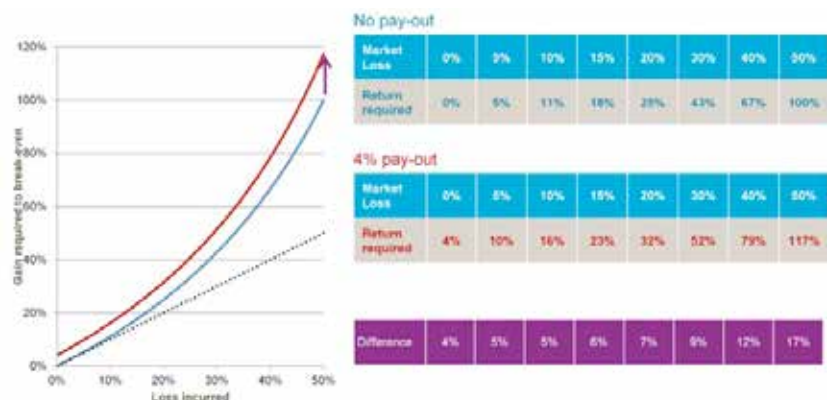
- A closed system makes it obvious that spending and remaining portfolio value are two sides of the same coin and this helps to highlight some of the tradeoffs between expenditure and growth and between now and tomorrow.
- In a closed system it is clear that spending is a fundamental part of the portfolio and therefore should be an input into a portfolio strategy rather than what happens with the output of an investment strategy.

Now that we have established that spending is a key part of portfolio strategy, we can identify the key problem to be overcome when trying to marry the needs of expenditure with the needs of portfolio growth. The key issue is volatility. In order to target the higher returns needed to grow the total value of the system, investors will need to take more risk and therefore experience more volatility. However, volatility is antithetical to spending, for reasons we shall outline in the next section.

The problem with volatility

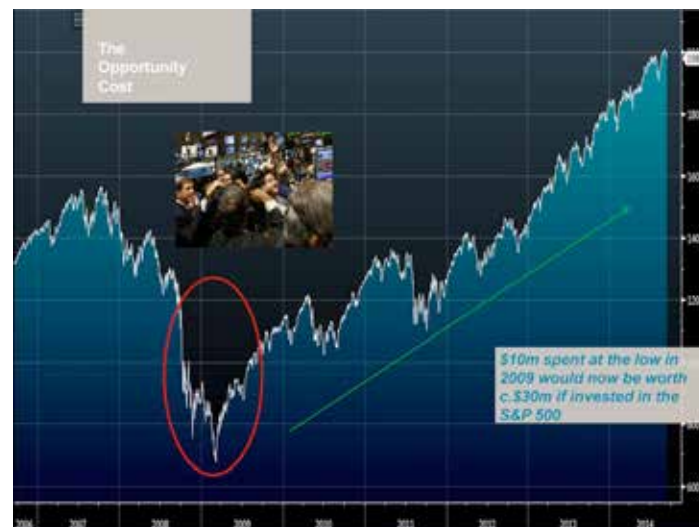
Volatility can be seen as a necessary evil. Entirely non-volatile investment returns do not exist in the real world and as investors aim for higher returns, they must accept more and more volatility in their portfolios. If the portfolio has an infinite time horizon and no expenditure requirement, volatility can be absorbed by the investor. But wherever there is a requirement to pay out at a certain point in time, the portfolio becomes vulnerable to the effects of volatility for two reasons:

- The first problem with volatility is the asymmetric impact of losses and gains. A portfolio which loses 5% of its value in one year will have to make a very small amount more than 5% gain the following year to get back to its starting point. A portfolio which loses 20% one year will need to make 25% back the following year to regain its starting point. A portfolio which loses 50% in one year will need to make 100% the following year. This asymmetry means that down years are disproportionately damaging to portfolios. And this effect is exacerbated by payouts.



Note that without payout, a 50% loss requires a 100% gain to correct it whereas, with a payout of 4%, a 50% loss requires a 117% gain to correct it. This steepening of the curve means that expenditure worsens volatility's impact on a portfolio.

- The second impact of volatility we can characterise as the opportunity cost factor.



Markets tend to overreact in any given situation, falling too far in downturns and reaching too high in the upswings. This means that market lows are inevitably followed by market rallies. Poorly constructed spending policies mean that at market troughs such as the one experienced in 2009, investors are forced to liquidate positions at extremely low valuations but then are

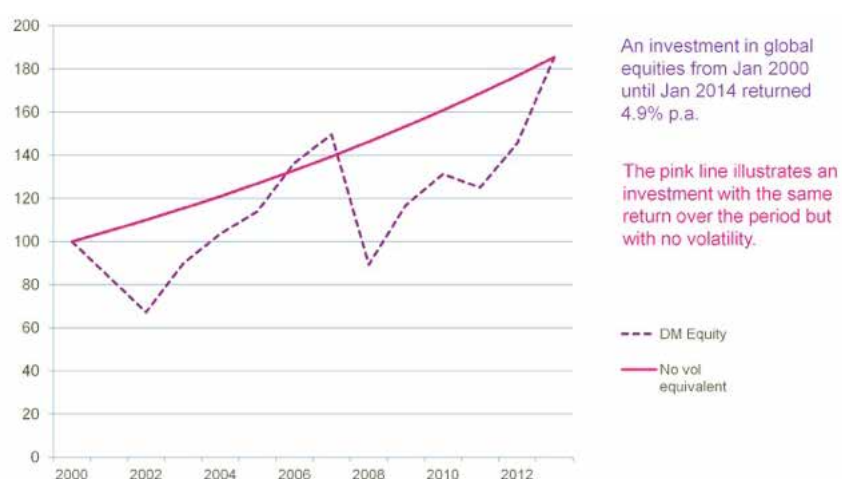
prevented from participating in the rally that follows. As the graph above shows, if an investor had been forced to liquidate \$10m from his or her portfolio in 2009, that investor would have lost a total of \$20m from the portfolio over the following 6 years as the market corrected. The original \$10m we can still count as captured, because the expenditure happened and the goods and services were bought as planned, but the \$20m of potential upside was lost definitively to the system.

Taken together these two effects can have a very damaging impact on portfolio values.

An important point is that these losses were not due to fees paid to rapacious money managers or due to poor investment management. Nor to money spent – wisely or unwisely – by the beneficiaries. This money was lost to the system altogether due to the design of the spending policy in combination with the investment policy. Finding ways to prevent this loss is key.

The impact of volatility – quantifying the impact

We can illustrate this by comparing a real life portfolio invested in normal, volatile markets, with a portfolio invested in a non-existent market – a perfect market which generates the same returns as the real life market but with no volatility. In this example, the dotted line shows the performance of the MSCI World Index between January 2000 and January 2014 during which time the market returned 4.9% pa on average with considerable volatility. The pink line illustrates an investment in a market generating 4.9% every year with zero volatility. Such a market does not exist but we can use it to isolate the impact of volatility on a portfolio.



With no spending, the portfolios achieve the same end result - \$100m dollars invested in January 2000 grows to over \$180m dollars 14 years later. In these examples, the total system value is the same at the end of the period. But if we add spending into the equation we can begin to see what volatility actually does to real portfolios. In this case, we have added a requirement to pay out 4% of the original portfolio value every year.



Suddenly we see a significant difference between a volatile portfolio which is paying out and a volatile portfolio which is not paying out. Remember that where there was no payout, the end result for a volatile portfolio did not look different to the non-volatile portfolio. By contrast the volatile, paying-out portfolio results in lower total system value – even taking into account the amount of money used up in spending - than the portfolio which doesn't pay out. Volatility in the presence of a payout policy has reduced the overall value of the system by \$17m. Again, this money has not been captured by the beneficiaries, or by money managers. It has simply been lost to the system altogether.

Portfolio longevity

The above discussion takes a particular historical set of portfolio returns and examines an outcome for one particular portfolio. However, there is another important element to consider here and that is dispersion of possible outcomes. When we say that, for example, equity portfolios returned around 4.9% p.a. over the past 14 years, that reflects what has happened, looking backwards. However, that number masks the dispersion of possible outcomes that could have occurred. A whole range of other outcomes were possible, but history records the one outcome which did happen.

We model below a portfolio targeting 4% real returns and paying out at a constant rate of \$4m per annum, by using simulations of possible outcomes over a 20 year period.

The green line shows what the median portfolio achieved and this tends to be what most people focus on. However, this masks a huge range of possible outcomes. The yellow line shows the top 5th centile range – 5% of portfolios would have achieved even better than this. The red line shows the bottom 5th centile range – 5% of portfolios would have achieved even worse than this.



There are two points to note – firstly that on average targeting 4% real return to finance a 4% original portfolio value spending commitment can result in a gradually declining remaining portfolio value. This is the effect of paying out a constant amount (in this case \$4m) in the down years as well as in the up years, gradually eroding the remaining portfolio value through the dual impact of volatility (the asymmetric impact of losses and the opportunity cost incurred as a result of payouts in down years). The second is that more than 5% of the portfolios with these investment and spending policies run out of money after 18 years.

Both factors should be of concern to wealth owners and trustees who wish to preserve long term wealth as well as to beneficiaries who risk seeing their source of spending dry up.

Solutions – prolonging portfolio life and protecting spending

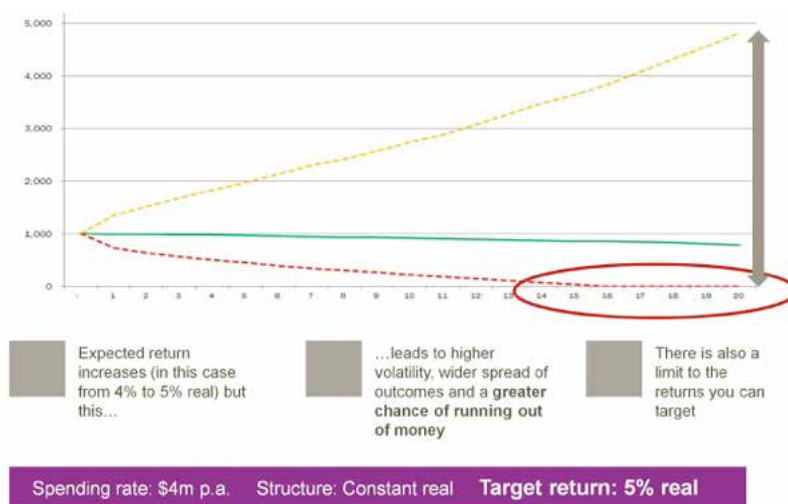
One obvious solution to the problem of portfolios running out of money is to reduce spending. However, this is not always possible. There may be minimum spending requirements where charities and endowments have made commitments to support ongoing expenditure. Or the portfolio might have been established to support a certain lifestyle, and if this has been structured as a trust, the trustees need to be in a position to meet the aims for which the trust was established.

Expressed in philosophical terms, reducing spending today means that the balance between spending today and spending in the future has been shifted in favour of the future and this may not be in keeping with the intention of the settlor or benefactor who established the portfolio.

There is no obvious reason why future beneficiaries should be more deserving of cash to spend than current beneficiaries and therefore simply shifting the emphasis onto tomorrow instead of today is not necessarily the right solution.

Another option is to attempt to target higher returns in order to attempt to manage the twin goals of protecting current spending and growing the portfolio. Beneficiaries may well understand the point made above – that the median portfolio targeting 4% real returns and paying out 4% per year will gradually drift down in value and in a significant minority of cases will blow up altogether. Beneficiaries wishing to preserve a spending rate of 4% might then propose increasing the return target to 5%, sensing that the 1% margin between returns and spending needs would provide a comfortable margin and thus protect against portfolio collapse.

It is powerful to compare the outcomes in this situation with the outcomes predicted above. Contrary to expectations, the poor performing portfolios do even worse in this scenario. With a 4% real return target the poorest portfolios run out of money by year 18. With a 5% real return target they implode by around year 16. The resilience of these portfolios is reduced, not enhanced, by the change in return target. This is, of course, because investment managers cannot achieve higher returns without taking more risk which means increasing portfolio volatility. Rather than protecting and prolonging portfolio life, this has the effect of increasing the likelihood that a portfolio will not survive.



Maximising total system return – balancing expenditure and portfolio growth

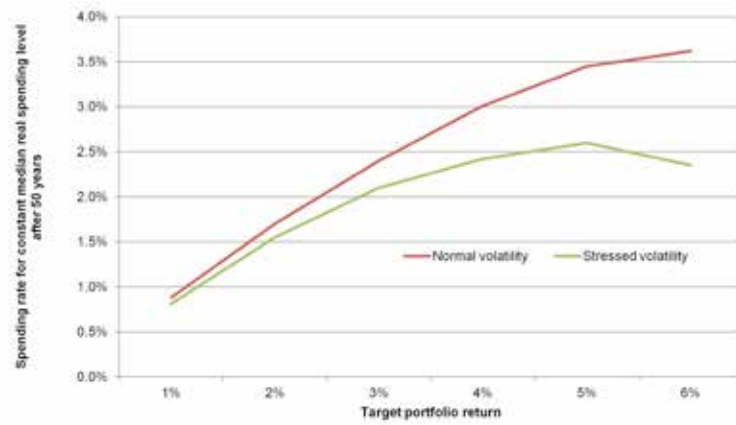
So assuming that expenditure is required, how can it best be managed in order to create the most robust and durable portfolios to meet these spending needs? It is clear that volatility is necessary in order to achieve the required returns – but volatility is dangerous when combined with a poorly thought through payout policy. The way to square this circle is to design a payout policy which allows volatility to be increased to the extent required to achieve growth in the portfolio but which does not allow volatility combined with payout to damage the longevity of the portfolio.

This can be done by selecting the appropriate spending structure which, in accordance with the right spending rate, will enhance the investment strategy. If the investment strategy and the spending strategy can be designed in tandem, the resulting portfolio will be able to capture the gains of volatility without suffering unduly from the drawdowns.

Setting the spending rate to preserve capital

Although a high spending rate will lead to a high level of spending in the short term, if the spending rate is set too high in relation to the investment return, over time it can reduce future spending as the value of the portfolio decreases over time.

For consistent spending levels over time, the rate should be set at a level to ensure the real portfolio value is maintained. As a general rule for those investors seeking to maintain the real value of their portfolios over time, the spending rate should be set at a level lower than the net investment return of their portfolio (for typical policies and targets this will be of the order 1% to 1.5% lower depending on the goals of the investor). The graph below shows the results from a simulation of different target return portfolios over a 50 year period using a simple constant spending % rule. It shows the spending rates that will produce a consistent median portfolio value after 50 years for different target portfolio returns, in both a normal environment (red line) and in a more volatile stressed environment. The higher the target return the more volatile the portfolio so the greater the difference that is needed between the target return and the percentage that can be spent in order to preserve the value of the portfolio and the long term ability to spend.



A classification of spending strategies

The next step is to identify the right spending structure. Spending structures can be categorised into the following broad groups:

1. No spending - (or spend all at the end).

Here there is no requirement to draw down from the portfolio and the managers are free to concentrate on increasing investment returns over the long term.

2. Constant spending (\$ amount)

Constant spending structures can be real or nominal. For example the beneficiaries may receive \$1m per year from a portfolio or \$1m plus CPI each year. Either way, there is no reference to the value of the portfolio and therefore constant spending strategies like this tend to prioritise current spending over portfolio growth. The risk here is that, as drawdowns to finance spending continue to be made even in bad years, the negative effects of volatility on the portfolio are magnified and there is a risk that the portfolio will drift down in value and in the worst cases, run out of money.

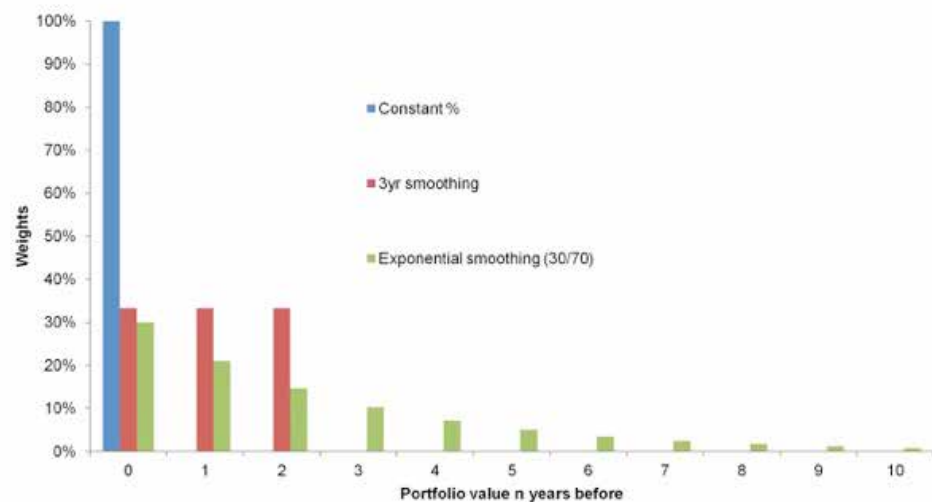
3. Constant spending (as % of the total portfolio)

Here, spending increases and decreases in line with investment performance. This ensures the portfolio will not run out of money due to spending – if the portfolio should fall in value, so will the permitted expenditure. However beneficiaries will experience significant volatility in their spending. One way of thinking about this is that the experience of volatility in the portfolio has been transferred from the investment side of the equation to the spending side of the equation. It may be that beneficiaries are not able to tolerate this much volatility in their spending and therefore spending strategies which are based on a percentage of the portfolio may not be suitable for all situations.

4. Smoothing policies

Rather than using just the current year's portfolio value to dictate the amount of spending permitted, smoothing policies apply the spending rate to an average of portfolio values in the past. For example, a simple smoothing policy might permit expenditure of X % of an average of the previous three years' portfolio values, or an exponential smoothing policy might employ weighted averages depending on the outcomes desired. In the example given below, for exponential smoothing 30% weight is given to this year's portfolio value (the policy used by the Yale endowment).

By varying the weight to the current year's portfolio versus last year's spending level you can vary the degree of smoothing. For example, a higher weight on this year's portfolio level gives a faster decay and is closer to no smoothing, whereas a lower weight to this year's portfolio level provides more smoothing. The point here is to dampen down the volatility in permitted spending.



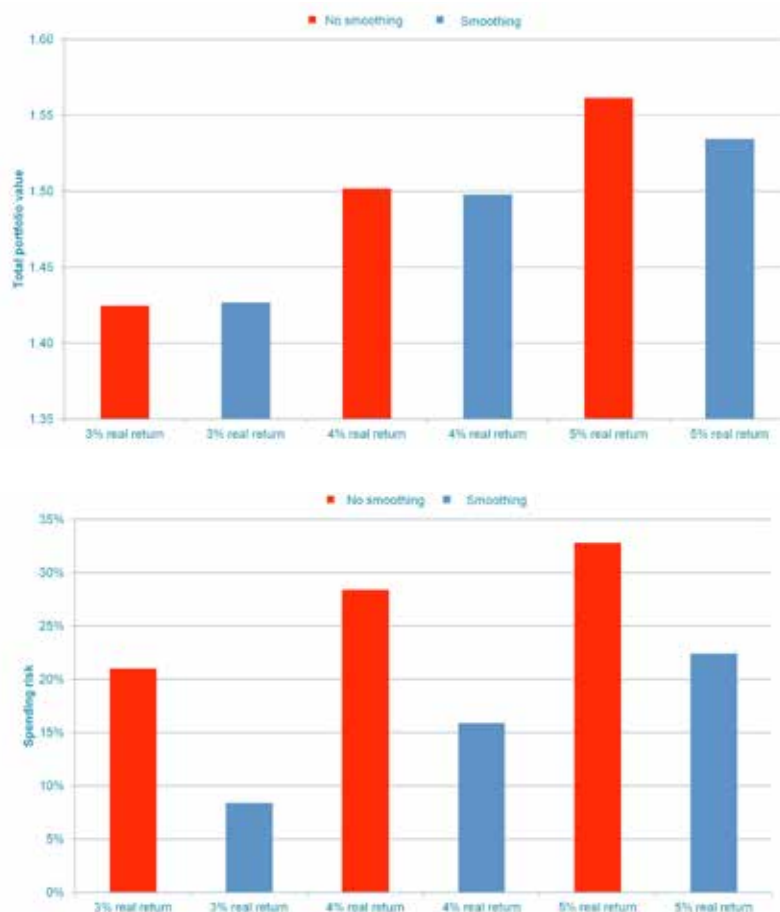
5. Contingent spending

Contingent spending rules provide conditions under which the spending rate or structure changes. Simple examples would be a rule to only pay out from real gains in the portfolio, or a rule to only pay out if the portfolio is up over the last year. These rules can be used to help maintain the real value of the portfolio into the future, by using the ability to constrain spending in some situations.

Spending policy and investment policy

Choosing the right spending policy can greatly improve the outcomes for the portfolio as demonstrated by the chart below. The graph displays the results from simulation for three different return targets: 3%, 4% and 5% real and maps the total portfolio value against the volatility of the portfolio's spending outputs (in this case the risk of the spending dropping by more than 10%). The bars in red use the constant % spending structure and those in blue use a 3yr smoothing policy, both with the same 3% spending rate.

By changing the spending structure to add smoothing it is possible for example to have similar spending risk (ie, the possibility of a 10% drop in spending power from one year to the next) with a 5% real return portfolio as a 3% real return portfolio, but to obtain significantly higher total portfolio value given the higher return target.



Contingent spending


Another option is to institute contingent spending policies whereby payouts are only made in certain conditions. For some investors the consistency of payout is not important, but increasing / maintaining purchasing power is more important. Introducing contingency to spending policies, adding the ability to choose not to pay out (or to pay out less), is a useful extra tool that can be used. This can provide the investor with a required level of spending while still targeting long term growth in their investment portfolio.

This plays an important role because of the opportunity cost highlighted earlier; that after markets have fallen the forward looking expected returns will tend to be greater, so at this very time a fixed amount of spending will reduce the forward portfolio value by more than spending when the markets are trading at high valuations and the forward looking investment returns are lower. For some investors, times of bad investment returns will also coincide with times when spending is most needed or valuable, for example to support charitable works in times of recession. In this case the relative needs of current spending will likely prevent the use of contingent spending policies, for instance a spending policy which only permits a payout if the portfolio has achieved real gains against the original portfolio value or which only permits payouts in a good year. This degree of volatility for beneficiaries in terms of spending and the binary nature of the rule which allows spending in one year and not in another is not sustainable for many wealth owners.


Solution - Hybrid policy with low spending volatility

However, there is another option which is to combine an element of contingent spending with a smoothing policy which will allow portfolios to retain the benefits of volatility on portfolio growth whilst minimising the negative impact of volatility on portfolio longevity and without allowing volatility to create unsustainable pressures on spending.

Year	Market index level	Constant %			Hybrid		
		Portfolio value	Spending	Change in spending	Portfolio value	Spending	Change in spending
0	100.0	100.0			100.0		
1	114.7	114.7	3.4		114.7	3.0	
2	116.7	113.2	3.4	-1%	113.6	3.0	0%
3	127.1	119.6	3.6	6%	120.5	3.0	0%
4	101.6	92.7	2.8	-22%	93.9	2.9	-2%
5	114.2	101.1	3.0	9%	102.2	3.0	2%
6	127.0	109.0	3.3	8%	110.4	3.0	0%
7	147.5	122.9	3.7	13%	124.7	3.0	0%
8	131.3	106.1	3.2	-14%	108.4	3.0	0%
9	138.3	108.4	3.3	2%	111.0	3.0	0%
10	149.0	113.3	3.4	5%	116.4	3.0	0%



If the real value of the portfolio is greater than the initial level then spending is a constant amount, say 3%, of the original real portfolio value.



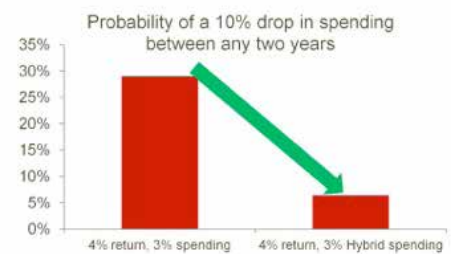
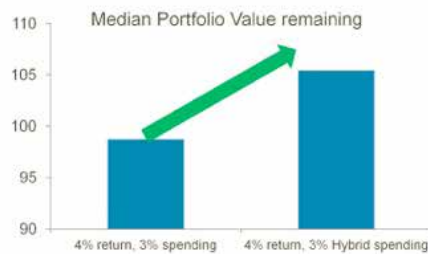
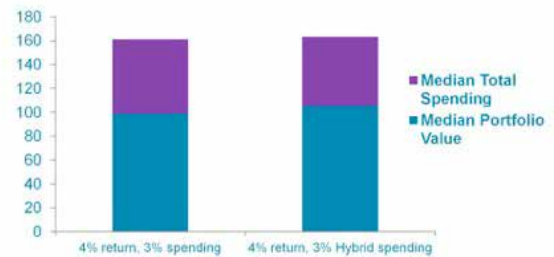
If the real portfolio value is below the initial level, spending is reduced in a smooth fashion by following the exponential smoothing model with, say, a 3% rate.

Spending rate: 3% p.a. Structure: **Constant wealth and Hybrid** Target return: 4% real

In this policy the spending rate is set at a sustainable level - 3% p.a. for a 4% real return target. If the real portfolio value is greater than the starting level (i.e. the value of the portfolio is greater in real terms) then spending is a constant 3% of the original value of the portfolio, adjusted for inflation (i.e. spending grows in line with inflation). If however the real value of the portfolio has declined since inception then spending is reduced using an exponential smoothing rule.

The graph above demonstrates how this spending policy compares to a simple constant % spending rule for a random investment performance over 10 years. The hybrid policy is designed to minimise spending volatility, while helping to maintain the real portfolio value and thus spending power over time.

Hybrid Policy versus Constant Spending



Spending rate: 3% p.a. Structure: **Constant wealth and Hybrid** Target return: 4% real

Results from simulations using proprietary Asset Allocation and Valuation models for 20 years

What the above illustrates is that, returning to system total value, a hybrid spending structure which allows for volatility in a portfolio to obtain the required return but without tripping up on the negative consequences of volatility in a portfolio, can maximise total system value and provide for much more dependable spending profiles which beneficiaries find easier to manage than the dramatic highs and lows of basic spending policies.

Conclusion

A unique spending policy can be constructed to meet the unique spending needs of the beneficiaries. The reason for using the concept of system total value throughout this paper is that it enables us to illustrate clearly the tradeoff between current and future spending needs and that a correctly structured spending policy, rather than being a follow-on to a successful investment policy is an integral part of the overall portfolio policy. The spending policy should be considered together with an investment policy as there is a clear interaction between the two policies.

This is because in order to generate the returns needed to meet the spending needs, risk needs to be taken to grow the value of the portfolio. If spending can be managed in such a way as to permit the required level of risk to be taken, introducing volatility into portfolio returns, but without allowing the volatility to damage either spending needs or portfolio longevity prospects, the portfolio will be better able to produce the required growth in wealth (enhancing the system total value) over the long run to meet the beneficiaries' needs.

Ultimately the goals of all investors involve spending their capital at some point in the future, whether it is a set requirement each year, a lump sum in 20 years' time, or to provide the perpetual spending needs of an institution. The decision of when and how to spend from an investment portfolio is thus a centrally important question and not one which should be considered as an afterthought, tacked on to the investment strategy.

Rule #1: Consider spending and investment decisions together

Rule #2: To preserve capital, set the spending rate at least 1% less than the target real investment return

Rule #3: Use simulations to help choose the unique spending and investment policies required to meet your unique goals

Rule #4: Use smoothing to provide consistency in spending levels and maximise the total system value over time

Rule #5: Use contingent spending to increase total portfolio value over time if you have spending flexibility

Capital Generation Partners provides investment management and advisory services in accordance with a set of core principles that we have come to view as fundamental.

These principles – independence, diligence and prudence – guide our investment philosophy and are at the heart of everything we do.

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