

Nuffield/LBS Charity Investment Seminar Series

Risk: What does it mean for an Endowment?

September 12th 2005

Chairman: Mr Jeremy Hardie

Introduction

In introducing the second of four seminars, James Brooke Turner (Nuffield Foundation) reminded participants that the purpose of the series was to provide an opportunity for endowments to think through, on their own terms, what investment means for them, as opposed to other types of institutional funds. The previous seminar had begun the series by discussing investment strategy: three current, but very different, investment strategies had been described by three individuals from different backgrounds and with different roles within their organization. Some conclusions from the discussion were:

- both the culture of an endowment and governance were very important in determining investment strategy;
- there were many alternatives to the pension fund ‘policy portfolio’ approach to investment management
- there remained a strong commitment to spending income only; and
- questions remained about the place of new asset classes in investment strategy.

However, there had been little or no mention of the need to minimise risk, or maximise returns, as part of an endowment’s investment strategy, but a discussion of risk, and what it might mean for endowments, was the topic of this second seminar. Geoff Singleton, an investment consultant with Hymans Robertson, would talk about how an endowment might evaluate its own attitude to risk: then Professor Elroy Dimson of London Business School would present some research on the risk associated with holding equity investment over the long term.

How might Endowments consider their attitude to Risk?

Geoff Singleton (Hymans Robertson) explained that his background was that of an accountant with local authorities, including responsibility for two large pension funds, before a second career in investment consultancy again mainly for local government pension funds, but also with some responsibilities in research, including property and private equity. He described himself as a bureaucrat, a generalist and a pessimist and with no claim to a special knowledge of risk! Nonetheless, his objective was to provide some comments that would be helpful as participants thought about risk in their own context.

The starting point was a definition of risk: *the probability of loss, leading to the impairment of the objectives (purpose) for which the fund was established*. Since risk cannot be avoided entirely (simple inflation will erode the value of money) it has to be accepted as a fact, and then managed as best one can. But how to manage it?

Past experience (observations), often over long periods, provide information on the long term rate of return of different asset classes and the expected range (volatility) of those returns. Therefore it becomes possible to vary (manage) the degree of risk assumed by varying (managing) the mix of investment assets held. But how can Trustees or Investment Committees decide what degree (appetite) of risk is acceptable for them? The speaker proposed a framework within which factors specific to the fund, its investment goals, or objectives, can be evaluated:

- (i) *Minimum Risk;*
- (ii) *Strategic Risk;*
- (iii) *Active (or Implementation) Risk.*

(i) *Minimum Risk*: the speaker suggested some questions that Trustees might think about in forming their own attitude to minimum risk, for example:

- *How well defined is the objective that the fund is trying to meet? Are the liabilities fixed or discretionary or something in between? The more quantifiable the objective the more precisely it can be targeted as opposed to an expanding funding requirement. The more clearly the fund is able to articulate its objectives the easier it is to define what the minimum approach to risk should be.*
- *Does the fund have access to sources of new money? Those with access to new money perhaps can afford a riskier strategy than those without, since they will be less sensitive to the timing of returns. For a static endowment some poor equity returns early on could permanently harm the endowment if the losses had to be realised.*
- *What is the life (duration) of the fund? Those in perpetuity can absorb risk more easily than funds with a short duration.*
- *What of the impact on beneficiaries of short or long term losses? Is the spend policy committed, sustainable or flexible? Is there a reserves policy that can cushion the impact of short term fluctuations?*
- *What are the pressures of accountability and expectations? Might external scrutiny (from the public or the media) lead to expectations of a higher return or a lower risk requirement?*
- *How important is the preservation of capital? Are Trustees willing to take higher risks with capital in order to be able to distribute more at some stage?*

Answers to these and other questions relevant to the fund itself will give Trustees a feel for whether they want to adopt a minimum risk portfolio or a more aggressive approach to risk in the pursuit of higher returns.

What would constitute a ‘minimum risk’ benchmark (or portfolio)? Three options might be:

- *matching assets to the duration and flow of liabilities* as closely as possible with a portfolio of bonds - if liabilities can be so predictable for an endowment.
- *matching assets to inflation* would be a strategy for an endowment with the principal objective of preserving capital.
- *matching the real return on cash* might be the default ‘standard’ of minimum risk for an endowment with a manageable spend rate.

Once Trustees have settled on a suitable ‘benchmark’ which can represent the minimum acceptable risk, the Trustees may decide that they are prepared to swap some ‘minimum risk’ assets (say bonds) for some additional risk assets (say equities) in order to secure a higher return than the minimum requirement: this additional risk can be called the ‘Strategic Risk’.

(ii) *Strategic Risk*: with additional risk comes with additional probability that losses will be incurred. The measure of ‘how much more risk’ is provided by the *volatility (or standard deviation) of returns*.

Usually Trustees would wish to choose from a range of scenarios based on returns and expected volatility that could be expected from different combinations of underlying assets. Typically this is modelled using a standard set of risk and volatility assumptions so that for every combination of assets we see the expected return combined with the expected risk of the asset schedule. This is usually illustrated with an ‘efficient frontier’ chart. Repeating the calculation for sets of random future economic scenarios creates a range of outcomes which can be ranked to demonstrate the likelihood of any particular outcome (Monte Carlo simulations).

While helpful in decision making these projections come with significant limitations:

- There is the implied assumption that the future will look a lot like the past, and there are arguments that this will not be the case;
- The vast range of potential outcomes widens the further out in time that projections are made;
- The range of possible combinations of assets generates so many options that they can become overwhelming.

Modelling possible combinations of assets will provide helpful information on expected returns for different levels of volatility and vice versa. However they cannot provide a precise answer because there remains the need for judgement about the value of the additional return for the increased probability of loss (or volatility).

(iii) *Active (or Implementation) Risk*: There are further risks to the Trustees depending on how this additional volatility is found. Implementation can be passive (e.g. indexed) or active (mandates to individual managers to use their particular skills to

add additional value). The active style implies more volatility and the volatility grows depending on how much additional value the manager is expected to add: as a 'rule of thumb', it is expected that a manager will need to take an ex ante volatility of 2-3x the target performance; for 1% added value, there might additional portfolio volatility of 3%. However, this is not simply additive because some active management strategies provide low correlation with underlying assets, so the combination of higher volatility assets and higher volatility implementation can result in a more 'efficient' use of risk through diversification.

Since some asset classes are better suited to one type of implementation strategy than the other (e.g. gilts (passive) v property (active)), with the respective costs needing to be taken into account, it was suggested that the active (implementation) risk be concentrated in those areas where it is possible to add more value, or at least to add value with greater consistency.

Finally, the speaker introduced a fourth type of risk: *unintended risk*. Differential movement of asset values can mean that, over long periods of time, uncorrected portfolios will tend to contain ever increasing allocations to more volatile assets as their higher returns cause them to crowd out other less risky holdings. At the time it can seem contrarian, costly and disruptive but the purpose of rebalancing is to control risk by controlling the greater than intended exposure to particular assets.

At the end of the presentation a number of questions were asked.

- *Question:* Have estimates of risk and return changed very much over time?
Answer: Without knowing the precise parameters, it appears that the anticipated levels of returns have reduced, volatility has increased, and the likelihood of extreme outcomes has increased.
- *Question:* How helpful is the Minimum Risk Benchmark (MRB) for an endowment fund? Pension funds have 'promises' to keep, but endowments have trade offs between maximising current distribution and intergenerational equity.
Answer: The MRB could be helpful in making it explicit what volatility is being taken, although it might limit a policy designed to maximise return. It might also help develop a better understanding of what damage could be done. In all, MRB is considered a valid concept from which to consciously step away, if appropriate.
- *Question:* An MRB linked to index linked wouldn't be appropriate for a fund where the greatest liability was salaries growing at 2% over inflation. What about creating a benchmark linked to other measures such as the All-Share Index? Also, what about creating a simulation of returns of a randomly selected portfolio and comparing managers against that?
Answer: Construction of bespoke MRB would be quite reasonable, depending on the fund's own specific circumstances.
- *Question:* Assuming that risk equals volatility, how can other asset classes be risk assessed?
Answer: Through the same principle of the volatility of returns: for example private equity has high levels of volatility. However, assessment depends on historical data which makes it more difficult for the more recent asset classes.

- *Question:* With income distributions key for endowments, volatility of income is more important than the volatility of capital, but there little reference to income volatility. Is the importance of volatility of total returns overstated for endowments?

Answer: Capital values still have importance to endowments so they are as subject to capital volatility as much as any other type of fund. However, what and how volatility might matter to a fund differs to how it matters to the active manager who is remunerated on results.

Risk and Investing for the Long Term.

In contrast to the previous speaker, who had discussed how to assess risk generally in crafting an investment strategy, Professor Dimson (London Business School) focused on just one aspect of investment risk: namely investing over the long term, particularly in equities, drawing on detailed research by Elroy Dimson, Paul Marsh and Mike Staunton, all of the London Business School.¹

What returns do investors expect? Looking at different historical periods gives different answers. In general, over the last 5 years (2000-4) returns went down; what does that say about future returns? Over the 10 years 1990-99, returns were good with lots of evidence that in 1999 investors were willing to extrapolate these returns into the future. Over the much longer term 105 year period (1900-2004) real returns have neither disappointed nor been wonderful, but typically have been around 4-6% p.a. on average, telling a fairly rosy picture but lower returns that would have been extrapolated in the 80's and 90's.

But what was expected? In a survey² of expectations of financial economists, the long term 30 year equity risk premium (the expected equity return less risk free interest rate) in the US market fell from 7.9% in late 1998 to 5.5% in mid 2001, with 1 year short term expectations at only 3.4%. Alternatively extrapolating the equity premium from historical stock market returns and computing an average return over very long intervals describes a wide bell curve: the average annualised return was just over 7% but the bell curve could as easily suggest a range of between 5% and 9% (although unlikely to be as low as, say, 2% or as high as 13%). Since both history *and* experts have equal chances of imprecision, each of us needs to form a view for him or herself by looking at the long-term record.

So what is the long term record of investment returns? Research on total returns (dividends reinvested) of 17 national markets over 105 years show some broad common patterns: that equities did far better than risk-free investments. For example, stripping out the impact of inflation, UK equities increased in real purchasing power by 245x whereas risk free fixed income securities increased a mere 3x or 4x their real value over more than a century. In annualised terms, UK equities increased by 5.4% p.a., bonds by 1.3% p.a. and bills by 1% p.a. The huge difference in terminal wealth,

¹ See also *Financial Analyst Journal* January/February 2004 p15-25

² *The Journal of Business*, 2000, vol 73 no 4 p501-537 and Yale University, Cowes Foundation Discussion Paper Number 1325, Sept 2001

as compared to the more modest difference in annualised returns, demonstrates the power of compound interest! Whether returns were generally more or less, the pattern (of long term equity out-performance) is similar for other markets over the same 105-year period and this has given rise to the belief that equities are the place to be.

So are equities safe in the long run? Research by Jeremy Siegel³ on the performance of the US market concluded that over intervals of 20 years, the historical probability of receiving a negative real return was zero; anybody with an investment horizon of at least 20 years would have been sure of getting a positive real return from equities. The concept here is that real returns are stable over such a period, with annualised real returns over the very long term of around 6.75% (“Siegel’s Constant”). For the US equity market, it appears that if the future is uncertain, but the distribution of possible returns remains the same as in the past, then holding equities for 20 years is safe – there is no downside in real terms.

But is the same true for other markets? Research by Dimson, Marsh and Staunton⁴ uses their database to do similar calculations for other markets.

In the UK, there are a few 20 year intervals when returns have been negative (23 years to ‘wait’ for positive returns...). France is even more volatile: 25% of all 20 year intervals gave returns that failed to keep up with inflation (54 years to wait - providing for the pension needs of the *next* generation...) For Italy, 40% of all intervals show negative real returns. In this last case, an investor would historically have had to wait 74 years to be sure of retaining the purchasing power of his investment. All of the returns are before costs and, importantly, include the reinvestment of income. Keeping to the 20 year intervals, and making similar calculations across 17 countries, the research shows that three-quarters of non-US markets have had intervals, of at least 20 years, over which real returns were negative: only Canada, Australia and Denmark resemble the US experience with another (South Africa) borderline.

Looking forward, the real rate of return and volatility are unknown but modelling assumptions of combinations of these produces a range of outcomes. An assumption of 5% annualised real return and a 20% volatility demonstrates the range of real returns that can be expected over any holding period: to be virtually sure of a positive real return the period over which you would need to be invested is longer than 80 years. With the same return but increased volatility, the range of outcomes becomes wider and the probability of adverse outcomes becomes larger. The risk of poor returns doesn’t go away if you just buy and hold.

Concluding observations. Historically, equities have outperformed bonds over a 105-year period. But looking to the future, equities cannot guarantee a positive return over any particular time interval. While you can mitigate risk by diversifying within a portfolio and across national markets and asset classes, you cannot eliminate it entirely. Therefore, according to the speaker, those who ignore risk, and who regard equities as safe, are irrational optimists.

Questions related to the presentation were invited:

³ Siegel, J. (2003 3rd ed) *Stocks for the Long Run*, McGraw-Hill

⁴ Dimson, E. Marsh, P. and Staunton M. (2002) *Triumph of the Optimists, 101 years of Global Investment Returns*, Princeton University Press

- *Question:* Is a moderate forecast for the Equity Risk Premium an indication of pessimism?
- *Answer:* One's view is often coloured by recent events, but being realistic about the interpretation of the global economy, in general the world is regarded as a 'safer' place - better corporate governance, better risk management - and this justifies higher prices for equities. In general, risk for which one would look for a higher return (reward) is now much lower, and this has lowered forward-looking expected returns. So the lower risk premium might be regarded as a reflection of *optimism* about the future.
- *Question:* While diversifying is good because it lowers risk, why not have an investment strategy that strips out the poor long term historical markets (e.g. Italy) to reap the benefits of concentration on the better ones?
- *Answer:* Because asset managers have, at the very most, only a tiny amount of forecasting ability which might underpin a very small tilt towards "better" countries. In general, investors reveal a tendency towards a home country bias, with expectations that the home country will be one of the winners. As index compilers, we assume that investors exhibit no skill at determining whether a market is mispriced, and we simply report overall performance over an entire time interval.
- *Question:* What impact is there on the results for different trading periods? Is there a best fit trend, or long term trends and consistency across countries and across different interval periods?
- *Answer:* The annualised returns are not arithmetic returns so starting at good or bad years makes a difference although less of a difference that one might imagine. A bigger difference comes if the start date is at the bottom of a cycle. In fact, the choice of the start date has a bigger impact than other aspects of index construction. Prior research results, which were based on easy-to-find returns data, flattered "long term" index performance by an annualised 3% on average.

General discussion:

It was suggested that given the function of volatility in assessing risk, a chart of relative volatility by country might be useful in evaluating risk. For example the US has had relatively low volatility, but Germany and Japan have been the most volatile and been "ultra high risk."

Question: Does it become foolhardy to invest in equities according to an index weighted benchmark?

Answer: Equity returns include both the investment return and a speculative element so an index can become a diversification against poor manager selection. Equally an index or quasi -index becomes a benchmark against which to measure manager performance. But for an academic, the precise composition of an index has less relevance since the benchmark should be the most diversified portfolio (of marketable assets) possible!

Question: Does investment in equities become riskier for an endowment with a 4% spend rate when CPI is 2%? Should this lead to the revision of the spend rate?

Answer: This would require careful consideration between whether spending everything now can achieve the fund's objectives, or planning to go on forever where taking some risk is worthwhile, or something in between these two extremes. Endowments have no legal obligations and beneficiaries are anonymous so what, or where, is the risk? However in some cases there is considerable visibility, and you do know your beneficiaries (hospital trusts for example) so maybe some endowments are not so anonymous...

Also there are considerable psychological factors to be taken into account: "maybe it is rational to be slightly irrational?" Risk is the fear of doing worse than the rest rather than the benefit of doing better than the rest?

Question: Are professional investors more optimistic than academic economists?

Answer: Certainly the professionals appear to expect averaged annualised 5.5% nominal returns and upwards to 10% real returns for ever. But academics can change their minds very quickly. Clearly a need to worry about both!

Summary

The Chairman summarised the debate by commenting that discussion on topics such as this always provided something new to the participants. Whatever the level of knowledge or expertise, there was the realisation that you didn't know as much as you thought you did...

The two presentations had both rehearsed the current thinking about risk, but at the same time had begun to unpick some of the bundled concepts of the notion of what constitutes 'risk'.

Next meeting:

Seminar 3 will be held on Monday 5th December 2005 at 4.00 p.m. at
The Nuffield Foundation, 28, Bedford Square, London, WC1

Speaker: Mr Andrew Hind, Chief Executive of the Charity Commission

Panel: Discussing the different responsibilities of trustees, staff, and investment consultants/fund managers

Subject: *Governance: What are the implications of governance on the management of investment assets? Discussion of the roles and responsibilities of each member of the investment team.*