



June 2008

RECORDS MANAGEMENT SECTION

File ref: T/3/7/96

Mr Alan Smithee

Email: request-628-39f7356f@whatdotheyknow.com

The University of Edinburgh
Old College
South Bridge
Edinburgh EH8 9YL
Direct Dial 0131 651 4099
Switchboard 0131 650 1000
Fax 0131 650 2147

Dear Mr Smithee

Further to my letter of 23 June, please find below the second part of the University of Edinburgh's response to your freedom of information request concerning the University's socially responsible investment policy (SRI).

Thank you for your clarification that you are only interested in Investment Committee agendas, papers and minutes regarding this policy. Some of this information is available in the open agendas, papers and minutes to which I referred in my previous response. In addition, please find enclosed:

- Paper D for agenda item 4.1 of the 5 March 2007 meeting. Please note that there are no minutes for this item.
- The minutes of the 3 March 2008 meeting. The relevant paragraphs are 4.6 and 6.
- A report by Jagger & Associates. This is paper A and agenda item 4 of the 3 March 2008 meeting. This paper does not refer to the University's socially responsible investment policy; however, paragraph 6 of the minutes is related to this report.

You also enquired about the paper for agenda item 2.5 of the 25 September 2006 meeting. This document was the original 2003 version of the socially responsible investment policy that we have already provided to you.

Copyright in the information you have been given belongs to the University of Edinburgh or to another party. Copyright material must not be copied, distributed, modified, reproduced, transmitted, published (including published on the Internet or an intranet), or otherwise made available in whole or in part without the prior written consent of the copyright holder.

Yours sincerely

Anne Grzybowski

PP.
Susan Graham
University Records Manager
Susan.Graham@ed.ac.uk

The University of Edinburgh

“Socially Responsible Investment” - The Agreed Approach

Policy

1. It is competent for the University Court to give the Investment Committee, and hence the Fund Managers (Baillie Gifford), guidance and indeed, instruction, on the way in which the endowment funds are invested. The Court recognises that compliance with such guidance could constrain the Investment Committee's capacity to secure the maximum return on the endowment funds, and in such circumstances the Investment Committee may well choose to advise the Court of the prospective impact of any restrictions placed on their freedom of action.
2. The Court has endorsed an approach based on 'engagement' with companies on ethical issues through the Corporate Governance Unit operated by the Fund Managers.
3. The Court has also agreed that information regarding the companies and other funds in which the University's endowments are invested should be published annually.
4. As a consequence of 2 and 3 above, it is possible for any group within the University to draw attention to any investment held by the University that is considered 'unethical'. The Court has declared its willingness to consider such representations, on the following basis.
5. The key criterion against which specific cases would be considered would be whether the activity complained of (and substantiated) was wholly contrary to the University's value systems either as reflected in the Mission Statement, the Goals and the Corporate Plan or in regard to wider issues of social, environmental and humanitarian concern. This would for example include, but not be limited to, human rights abuse, discrimination on grounds of race, gender or disability and serious and persistent environmental damage.

Process

6. Expressions of concern should be related to specific companies whose activities or values appear, on the basis of clear evidence, to be so far removed from the University's core values as to give grounds for serious concern. Cases are normally only be considered if brought forward by representative bodies such as EUSA or a recognised trade union, or via the University's committee structure.¹
7. Cases are considered cases by the Central Management Group in the first instance. If brought forward by EUSA, the President would attend for discussion of that item. CMG is expected to take into account the current extent (if any) of the Fund Managers' engagement with the relevant company on the matters complained of. It is for CMG to decide, on Court's delegated authority, whether there are sufficiently strong grounds to warrant engagement with the company through the mechanisms established by the Fund Managers where this is not already in hand, or to request strengthening of that engagement if already active.

¹ A possible alternative approach could be for representations to be considered by the Court to the effect that the University should disinvest in categories of companies identified by reference to the businesses in which they are engaged. This has not been generally adopted, not least because the criteria for identification of such businesses would be matters of personal opinion. However, in 2004 a proposal that the University should disinvest in the tobacco industry was made, and was accepted by the Court as an exceptional case in view of the impact of that industry's products on health, in the context of Edinburgh being a major centre of medical research

8. CMG is empowered to raise matters with the Investment Committee and Fund Managers without need for Finance and General Purposes Committee's/Court's endorsement. Its decisions in regard to whether to do so in individual cases, whether positive or negative, is reported to the F&GPC and the Court. The Fund Managers would be asked to report back, giving clear details as to any action that had been taken, so ensuring accountability. CMG communicates these matters to F&GPC and Court as appropriate.

9. It is acknowledged that a situation could arise in which 'engagement' did not assuage serious concerns raised about a particular company. In those circumstances it might be concluded by the Court that it should disinvest. The Investment Committee would no doubt wish to make the financial consequences of such a decision clear to the Court.

10. CMG's requests for engagement are normally transmitted to the Fund Managers via the Investment Committee. However, in exceptional circumstances, it is possible to ask the Fund Manager's Corporate Governance Unit to pursue a matter at fairly short notice (e.g. at a forthcoming company AGM). In such circumstances a request for engagement should be passed from CMG to the Convener of the Investment Committee who would communicate it to the Fund Managers after such consultation with the Investment Committee as was practicable in the circumstances.

M D Cornish
University secretary

Based on proposals adopted by the University Court in July 2003

Modified December 2006 following disbandment of the Trustees and formation of the Investment Committee

UNIVERSITY OF EDINBURGH

Minutes of the Investment Committee meeting

1 pm, Monday 3 March 2008, Elder Room, Old College

Present		In attendance	
Dr David B B Smith	<i>Chairman</i>	Lynn Dewar	<i>Baillie Gifford</i>
Mr Ken Forman		Catrina Henderson	<i>Baillie Gifford</i>
Mr Michael Gibson			
Mr George Menzies		Simon Jagger	<i>Jagger & Associates</i>
Mr Anthony G D Johnston			
<i>Ex officio members</i>		Jon Gorringe	<i>Director of Finance</i>
Prof Timothy O'Shea	<i>Principal</i>	Lynne Ramsay	<i>Sec'y to Committee</i>
Dr John Markland	<i>Convener F&GPC</i>		

1 **MINUTES OF THE MEETINGS HELD ON 24 SEPTEMBER 2007 AND 11 DECEMBER 2007**

Minutes of meetings held on 24 September 2007 and 11 December 2007 having previously been circulated were approved as correct records.

2. **MATTERS ARISING**

There were no matters arising.

3 **CONGRATULATIONS**

The Chairman congratulated the Principal Professor Timothy O'Shea on his well deserved knighthood.

4. **INVESTMENT MANAGERS REPORT**

4.1 **Overall performance**

Baillie Gifford presented their report for the six months to 31 December 2007.

At 30 June 2007 the fund was valued at £216.8 million and fell by £3.3 million to £213.5 million at 31 December 2007. With the continuing volatility in markets the value had gone down from 31 December 2007 by £14.9 million and at 29 February 2008 the fund was valued at £198.6 million.

Fund distribution and valuation

	30-Jun-07	31-Dec-07	28-Feb-08
	%	%	%
UK Equities	62.10%	55.50%	52.70%
Overseas Equities	15.30%	17.70%	15.80%
Fixed Interest	20.80%	26.60%	27.20%
Cash and deposits	1.80%	0.20%	4.30%
Total	100.00%	100.00%	100.00%
Total value	£216.8 million	£213.5 million	£198.6 million

UNIVERSITY OF EDINBURGH

Minutes of the Investment Committee meeting

1 pm, Monday 3 March 2008, Elder Room, Old College

4.2 Performance against benchmark to 31 December 2007

Performance lagged the fund's benchmark over the six months and one year mainly because of under performance in UK equities but continued to benefit from an overweight position in Emerging Markets.

Time span	Fund	Bench mark	% diff to bench mark
6 months	-0.2%	0.4%	-0.6%
1 year	3.1%	4.9%	-1.8%
3 years	10.8%	11.3%	-0.5%
5 years	12.8%	12.2%	0.6%

4.3 Fund performance

UK stock selection was the main contributor to underperformance. It was underweight in the mining sector and there was a weak performance from banks. However there was a strong performance from energy stocks and a good performance from Tesco and Reed. Asset allocation was favourable being overweight in emerging markets and under weight in UK equities.

BG has continued to increase overall exposure to fixed interest and has purchased tier 1 bank debt which they believe is attractively valued. Single A rated bonds from well established UK banks have been offered at more than 300 basis points over gilts which overcompensates for the associated level of risk.

The risk in banks has been overstated as current spreads are pricing in failure of 1 in 3 banks and 1 in 5 large non-financial companies over the next 10 years. BG are attracted to banks because they are cheaper than their corporate peers.

<i>Returns by asset class</i>	6 months to 31 Dec 07		12 months to 31 Dec 07	
	fund	benchmark	fund	benchmark
	%	%	%	%
UK	-4.2	-2.1	-0.7	5.3
North America	4.9	0.5	7.9	5.6
Europe	0.7	3.9	10.0	15.7
Japan	-6.1	-6.4	-9.0	-6.4
Pacific (ex Japan)	20.3	15.9	41.4	34.6
Emerging	24.6	18.8	41.6	37.4
Bonds	3.7	4.3	1.6	1.8
Total	-0.2	0.4	3.1	4.9

4.4 Future

BG's current strategy is to reduce the Fund's exposure to equities and increase the holding in bonds.

It is BG's view that there will be slower economic growth. Corporate rate bonds will be increased. As company profit growth slows the fund will have a bias towards quality growth stocks

UNIVERSITY OF EDINBURGH

Minutes of the Investment Committee meeting**1 pm, Monday 3 March 2008, Elder Room, Old College****4.5 Income Target**

Income for the year is expected to be £8.8 million (108.0p per unit) which is £1.4 million higher than the target of £7.4 million (92.6p per unit). The increase was due to dividend growth in UK companies and the added weight in bonds. BG cautioned that the level of dividend growth in UK companies may not continue.

BG was instructed to continue with its current brief until the Committee firms up on its future strategy and to provide an estimate of the future income for the year to 31 July 2009 based on the present strategy.

4.6 Socially Responsible Investment - Student education

The Committee noted the action on engagement taken by the Central Management Group (CMG) with regard to RBS and Total. A meeting between the students and BG will be taking place at the end of March.

5. Major Review of Donations and Endowment Funds

The Director of Finance said that this review will not impact on the way the Committee works.

UNIVERSITY OF EDINBURGH

Minutes of the Investment Committee meeting

1 pm, Monday 3 March 2008, Elder Room, Old College

Closed Business

Information being withheld from open business under stated Freedom of Information exemption

6. REPORT FROM SIMON JAGGER

Simon Jagger (SJ) presented his report to the Committee. He said the Committee should consider its cashflow requirements, associated asset allocation and manager implementation. He outlined the Committee's requirements. These, which had been reported in his survey, were to have an income that was inflation linked and capital appreciation to help achieve this without undue risk. The Committee members all wanted transparency in investments but were not unanimous in their attitude to a short-term fall in asset valuation. The management of the Endowment fund would be separate to that of the pension fund. He looked at outgo requirements, current valuations and alternative investments, and some implementation issues.

Example portfolios

SJ showed four example portfolios with different percentages in UK equities, overseas equities, fixed interest, index linked, property and absolute return. Property and absolute return were introduced as new asset classes. He compared these to the current approach and explained the benefits and disadvantages of each. He explained that portfolio one would give expected real returns in line with, or slightly lower than the current portfolio but with slightly lower risk. Portfolios 2-4 demonstrated the change required to get the annual risk down but with greater volatility in returns.

Percentage distribution of various profiles

	actual at 28 Feb 08	current benchmark	1	2	3	4
UK Equities	52.7	60.0	40.0	32.5	30.0	20.0
Overseas Equities	15.8	10.0	20.0	17.5	10.0	10.0
Fixed Interest	27.2	30.0	15.0	15.0	15.0	15.0
Index linked			15.0	25.0	25.0	25.0
Property			10.0	10.0	10.0	10.0
Absolute return					10.0	
High yield						10.0
Cash & Deposits	4.3					10.0
	100.0	100.0	100.0	100.0	100.0	100.0

Fund managers

The current fund managers could not fulfil all the requirements of the suggested portfolios and at the moment have an instruction not to sell capital. In contrast to the current portfolio the suggested portfolios were predicated on earning less income but reducing risk and volatility. SJ said that the University could use more than one fund manager.

Investment return

The present instruction to the fund managers focuses on an income target but there is no formal year-by-year cashflow or specific projects' plan for which income has to be raised.

UNIVERSITY OF EDINBURGH

Minutes of the Investment Committee meeting

1 pm, Monday 3 March 2008, Elder Room, Old College

New asset class - Property

The Committee discussed the merits or otherwise of investing in property. Investment in property could be done through a fund of funds but the University would not want investment in poor quality properties that would require management of tenants. There is an opportunity to invest in commercial property in a pooled fund.

SRI policy

Scrutiny of the SRI policy is important and if there were to be investments in hedge funds there would need to be a formal instruction to do so. SJ said that if the Committee liked the US model then private equity and hedge funds would have to be considered and this would move away from the Committee's stated desire for transparency in investments.

Long term strategy

John Markland (JM) suggested that the Committee should consider what the Fund should be in 10 year's time. Jon Gorringer (JG) said that the Committee needed to work on its long term strategy. US institutions have less volatility and better performance, pushed towards alternative investments not index-linked gilts and were not interested in cash but in long term investment. Managers need flexibility. Baillie Gifford had outperformed because they had moved away from the benchmark.

The Principal said that the investments should grow in absolute terms and spend the income generated. The committee should look at a 4/5 year time frame. The University would not seek funds in the short term. It was planning its capital programme over the next 5 years There would be no need to expend existing endowment capital in that time frame.

Risk

The Committee discussed what was required in terms of risk, income and protection of capital:

- how much volatility the Committee was willing to accept
- whether capital could be used to supplement income
- acceptable risk compared to volatility

These discussions highlighted the lack of a clear University policy for investment.

6.2 Action

6.2a The Committee concluded that a formal instruction from F&GPC is required as to the University's policy on protection of capital and income generation. The Director of Finance agreed to request a clear statement of the requirement of the university at F&GPC on the 10th March. Once the policy is known the Committee will decide on the appropriate portfolio.

Note: Extract from the minutes of F&GPC 10 March 2008:–

“The Finance and General Purposes Committee advised the Investment Committee that it wished to see the endowment fund invested to deliver the maximum capital growth over the long term, while at the same time increasing the annual income in line with inflation from the 2007/2008 target - £7.4 million. It undertook to give at least three years notice of any requirement to sell capital in excess of £2 million per annum.”

6.2b For the next meeting SJ was asked to provide information on managers of property pooled funds.

UNIVERSITY OF EDINBURGH

Minutes of the Investment Committee meeting

1 pm, Monday 3 March 2008, Elder Room, Old College

7. **TREASURY**7.1 **Investment of cash balances**

At 31 July 2007 the University had short and medium term investments of £90.728 million. By 31 January this had risen by £46.687 million to £137.414 million which included £40 million transferred to Royal London Cash Management (RLCM) in November 2007.

The Finance Director reported that there had been difficulty in moving forward capital building projects because of planning issues and delays in projects on site. The delay in the Informatics building impacted on other projects. Money from funders has been received well ahead of the need to spend it, for example the University has received £20 million for the Scottish Centre for Regenerative Medicine (SCRM) which will not be spent until 2009.

The University had taken the opportunity to invest in deposits up to one year with interest rates over 6%

The General Reserve Fund was valued at £18.203 million on 31 January 2008, a reduction of £1.413 million since the July 2007 valuation of £19.616 million. A transfer of £1.370 million was made from the long term MTEM share sale funds to the General Reserve Fund on 7 February 2008.

RLCM will be asked to present to the Committee at its next meeting.

7.2 **Increase in deposit balance limits**

The Committee was asked to increase the limits on balances held with individual depositors. The Finance Director said that it was difficult to keep within the existing limits and get competitive rates with brokers.

The Committee ratified the limit for deposits with RLCM at £40 million.

The Committee also agreed to change from a fixed money limit on individual deposits. The balance that can be held with an individual depositor is now limited to 20% of total deposits. Any breach is to be reported. The credit quality was to remain at AAmimus or better.

8. **DATE OF NEXT MEETING**

Set up a meeting for the end of May beginning of June. The next meeting after that will be on Monday, 22 September 2008 at 10 am in the Lord Provost Elder Room, Old College.

Signed:

Date:

JAGGER & ASSOCIATES

Ground Floor, 14 Exchange Quay
Salford Quays, Manchester M5 3EQ
Tel.: 0161 873 9350, Fax: 0161 877 4851
e-mail: enquiries@jaggerandassociates.co.uk
www: www.jaggerandassociates.co.uk



The Endowment Funds of the University of Edinburgh Initial Briefing

February 2008

1. Introduction

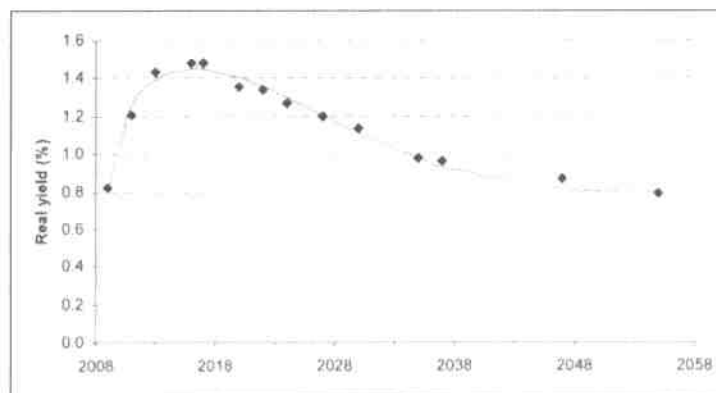
- 1.1 This initial briefing follows on from our presentation meeting with the Investment Committee. It aims to be a more formal outline of the investment strategy risk-return issues we discussed with the Committee. It also discusses some questions that the Committee needs to consider, both in terms of cashflow requirements, associated asset allocation and manager implementation.
- 1.2 In drafting this briefing, we received background data and some further feedback from Committee members, summarised here as follows for ease of reference:
 - The current benchmark is 60% UK Equities, 10% Overseas Equities and 30% Corporate Bonds (strictly, “non-Gilt”, but we will use Corporate for ease of reference in these notes).
 - There was a majority (but not unanimous) concern that the risk of a major fall (of, say, 15% or more) should be reduced, but that this protection should not be overly at the expense of damping down the long-run return on the assets.
 - Committee members were not keen on investments with a lack of transparency, or where manager monitoring would be problematic.
 - Excepting of passive managers, it was felt that separate managers be used for the University’s pension fund and endowment fund investments, to reduce the risk of both being vulnerable to the same period of manager underperformance. This diversification was felt to outweigh the potential (but limited) fee savings that could arise from *notional* aggregation of the assets. (Implementation is outside the scope of this note.)
- 1.3 The briefing’s broad structure is as follows:
 - 2 Comment on outgo requirements
 - 3 Observations on current valuations and alternative investments
 - 4 Risk-return analysis for comparing investment strategies
 - 5 Some observations on implementation issues
- 1.4 An Appendix is included on the underlying asset modelling assumptions.



2. Outgo requirements

- 2.1 We understand that withdrawals of £8m are likely each year, but it is anticipated that this amount might increase to £10m, and that new endowment bequests might amount to £5m. We have assumed that each of these figures is inflation linked; from this, based on around £200m of endowment assets, the University expects to draw down 4%-5% of assets, but of this, some 2.5% may be met from new cashflow (unless there are any constraints on how specific endowments may be applied). The resulting 1.5%-2.5% would be met from underlying income or realisation of investments. It should be noted that the income need not be generated “explicitly” (eg via income units or income on segregated portfolios), provided that cost-efficient transactions can be implemented.
- 2.2 Given the current real yields on Index-Linked Gilts (ILGs) as per Figure 2.1 below, and the yields on Index-Linked Corporate Bonds being about 1.1% higher (not much variation by term for this credit margin), this suggests that only modest additional risk may be required to reach the desired inflation-linked return. (However, the Index-Linked Corporate Bonds carry a small element of default risk, unlike ILGs.) We will return to this after setting out the relevant technical tools for analysing risk-return profiles (in section 4).

Figure 2.1: Current Real Yield Curve for ILGs



Source: DMO (20 February dataset)

- 2.3 We understand there is no formal year-by-year cashflow outgo profile for the Funds, nor any specific projects for which substantial outgo would be required in particular years. If such a profile is developed, either now or in the future, then that data would supersede the pure income requirement, and the emphasis would shift to “what investment return do we need to achieve in order to meet our cashflow profile?”
- 2.4 That return is unlikely to be achieved as a constant return each year. Therefore, the Committee needs to consider the variability of its return (either in absolute terms, or relative to any cashflow profile that has been developed). If there is a limit to the downside risk that the Committee can accept, this needs to be factored in. For example, there might be a view that “we cannot afford to have a return worse than 7% behind inflation happening more than 1 year in 6”, or “we cannot afford to have a return worse than 14% behind inflation happening more than 1 year in 20”. This line of thought may become more intuitive after section 4, but before that, a short section on investment market conditions may be helpful.



3. Observations on Current Valuations and Alternative Investments

- 3.1 If the Committee decide to adjust the current strategy, some thought should be given to issues such as the phasing in of the investments made (so as to reduce the exposure to market conditions on any single day), and the relative valuation levels of different asset classes.
- 3.2 For bond classes, the focus is on the prospective return (the “gross redemption yield”), with consideration of the additional return (“credit margin”) offered on corporate bonds relative to gilts, as compensation for the risk of partial (or full) default on corporate debt. Figures 3.1a and 3.1b show the history of gilt yields (conventional and index-linked) and credit margins. (The vertical scale in Figure 3.1b is measured in the market’s standard measure, basis points, which involves units of 0.01% - so 100 = 1%.)

Figure 3.1a: Long Gilt Yields

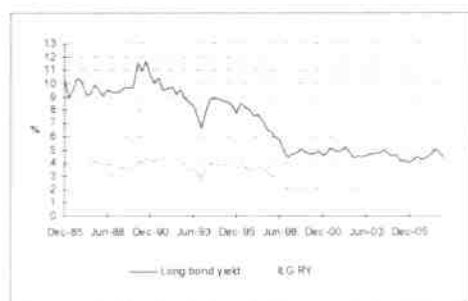
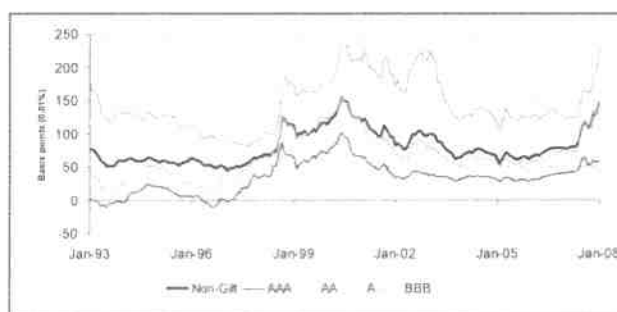


Figure 3.1b: Credit Margin (All-dated)



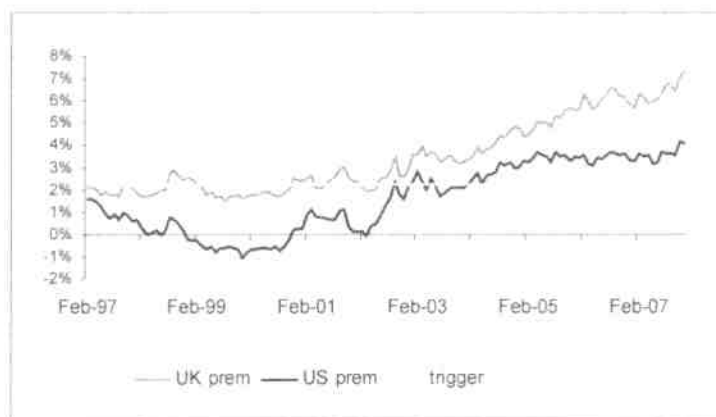
Note: Yields chart is quarterly FT data. Credit Margin chart is monthly Barclays Capital data.

- 3.3 From these, coupled with Figure 2.1, we can see that the real yield offered by index-linked gilts is very low, and that the yield offered by conventional gilts is also very low at around 4.5% p.a. – reflecting the low real yield, and also the comparatively low levels of expected future inflation. On that basis, it is tempting to conclude that gilts are an unappealing investment, even though they may correlate with the desired cashflow pattern. Corporate debt has been a major destination for some investors for the last few years. As Figure 3.1b shows, the additional return offered here is now at about 1.4% p.a., which is possibly sufficient compensation for the risk of default. (It is similar on index-linked bonds, although the mix by sector and maturity is not identical for the two markets.)
- 3.4 If credit margins widen, returns would be worse than from government bonds (over the period for which corporates were held instead of gilts). It would be understandable if the Committee therefore rejected allocating more money to corporate bonds than the existing 30% (even if they converted some to being index-linked).
- 3.5 The next potential markets to consider are equity markets, such as for the UK and the US. Figure 3.2 overleaf shows the way the expected future additional return for equities relative to government bonds has varied over time. It is termed the Equity Risk Premium (ERP), and should not be confused with the past actual additional returns reported in studies such as the Barclays Gilt-Equity Study. (Unlike the bond charts above, which simply show current market data, this ERP analysis requires an assumption about companies’ earnings growing in line with inflation – see the January / February 2003 issues of *Investment Update* on our website for more.)



- 3.6 The “trigger level” is our (subjective) level of 2.25% p.a., above which the ERP approach suggests that equity prices are allowing adequately for risk (i.e. they are fair or cheap), and below which, they may be over-optimistic (i.e. expensive). The chart suggests that at the moment there is significant allowance for risk with approximately 7% p.a. of expected additional return, and on that basis equities may remain a sensible investment.

Figure 3.2: Equity Risk Premium



Sources: *Financial Times, Jagger & Associates*

- 3.7 However, as with bonds, it is important to understand how things could still go against the Endowment Funds if they stayed with their current 70% in equities. The continued selling of equities by other institutional investors could depress the market, and the priced-in allowance for risk may not be sufficient. However, *if* the Committee were able to live with the associated volatility, then this chart would suggest that there is no pressing need for a rapid reduction in the Funds’ equity proportion, although moving into alternative assets over time may be sensible on cashflow-construction grounds or for diversification reasons to create a more efficient portfolio (see Section 4).

- 3.8 For completeness, other possible areas include the following asset classes:

- **High Yield Debt** The discussion above focused on ‘investment grade’ corporate debt (rated BBB or above). High Yield is another name for sub investment grade debt. If held as a well-diversified portfolio (thus minimising the effect of individual defaults), and with due regard for the potential recovery of assets in the event of default, this can be an effective way of achieving returns in excess of standard corporate debt.
- **Property** Although some felt that this asset’s past run of strong returns was unsustainable, and there is currently a lot of sentiment against it, several investors continue to increase their weighting in it. The Committee could do this either through a single pooled property fund holding, or possibly through a fund-of-funds arrangement.
- **Absolute Return** Until very recently, many investors had little interest in total return / target return mandates - relentless positive returns in the 1990s meant nobody felt they needed such a product. This attitude is obviously now changing, but there are not many managers with genuine long-term records in this area, particularly when you only consider long-only products, and the use of significant tactical assets allocation (TAA) between asset classes. TAA is where the investment manager moves money between asset classes (for example from overseas equities to bonds) in order to achieve the highest returns, and you only need to make small allocations to these products. We will discuss TAA further at the meeting in March.

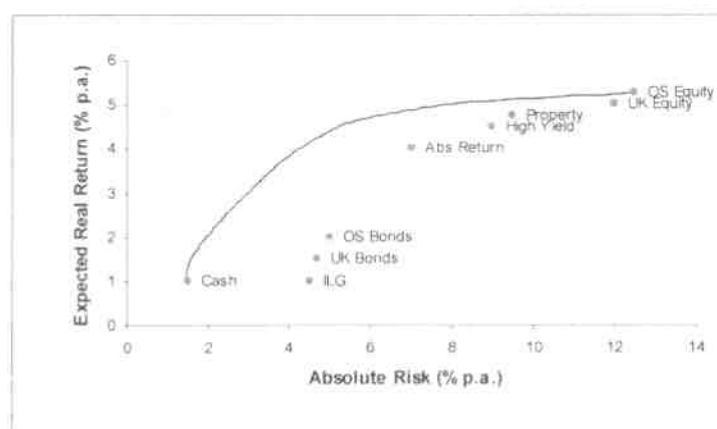


- 3.9 We think the initial feedback received from Committee members means they would be unhappy with making explicit allocations to Hedge Fund of Funds, Emerging Markets (in debt or equity format), Private Equity, or Commodities. However, these assets can turn up in Diversified Growth funds, and in other variants on Absolute Return funds. If any alternative assets are of particular interest to the Committee, we will happily comment on practical means of implementing a direct portfolio weighting for them.

4. Formalising the risk-return analysis

- 4.1 The risk-return profile of the Fund will vary according to the strategy adopted. The easiest tool to consider this is known as an efficient frontier, and is a plot of risk-return. The key is simply to work up the vertical axis – for each level of expected (real) return, there are lots of combinations of assets with that expected return; each combination has an associated risk level, and therefore there is a minimum risk level; plotting the sequence of those generates the blue line, the “efficient frontier”. At this stage, the risk relates solely to the variability of market returns (i.e. it does not equate to default risk, and it does *not* include the impact of a particular manager implementation route – we will come to that in section 5).

Figure 4.1: A general efficient frontier (absolute risk)

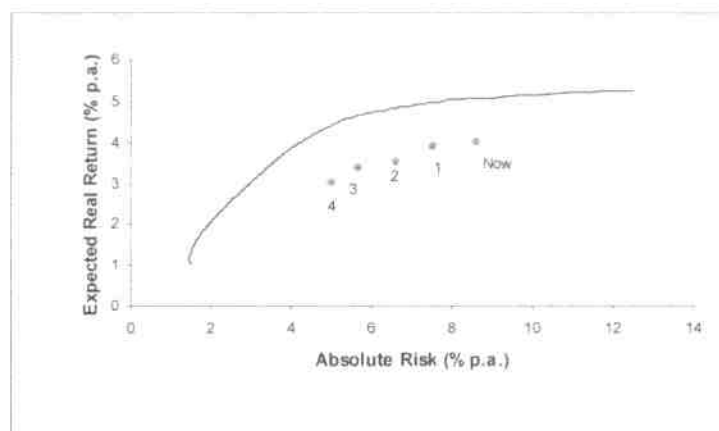


- 4.2 Places to the left of the efficient frontier are unattainable, i.e. for a given level of real return, the line identifies the portfolio of minimum risk, and what that risk level is. In practice, given the sensitivity of the calculations to the underlying assumptions, we are usually satisfied with getting close to (rather than actually on to) the frontier. It is possible to separate out UK government bonds (gilts) from corporate bonds in Figure 4.1, however we feel that the decision of whether to invest in corporates or gilts is a separate one, and should be based on assessing the available credit margins. The Appendix gives the background on the assumptions for the development of this chart.
- 4.3 We can also include different combinations of assets, and plot the resulting risk-return locations in relation to the individual asset classes. Figure 4.2 overleaf shows a few *example* portfolios to assist the meeting discussions, although the Committee should bear in mind the earlier discussion of required yields from section 2 – there is an argument for measuring the risk relative to an ILG portfolio (to mimic the desired cashflow pattern). **Now** shows the current Fund portfolio – broadly 60% UK Equities, 10% Overseas Equities, 30% Fixed Interest (but without taking the corporate credit margin into account in either the expected return or the risk level).



- On our assumptions, the **Now** portfolio has an expected real return of about 4.0% p.a. (i.e. a nominal return of about 7.0% p.a. based on a 3% inflation assumption). The **Now** portfolio risk level of 8.6% pa means that the real return can be in the range -4.6% to 12.6% in two years out of three, with the other year being either extremely good or bad. This is a high level of portfolio volatility.
- To go for a less-frequent measure (eg “1 year in 20”) places a lot of emphasis on the tails [extreme values] of an asset model. Doubling the bandwidth (here, to the range -13.2% to 21.2%) would then cover 19 years out of 20 under a simple Normal distribution, but other statistical distributions give greater weight to extreme values, eg perhaps covering only 15 out of 20 years instead.

Figure 4.2: Efficient frontier with illustrative portfolios (absolute risk)



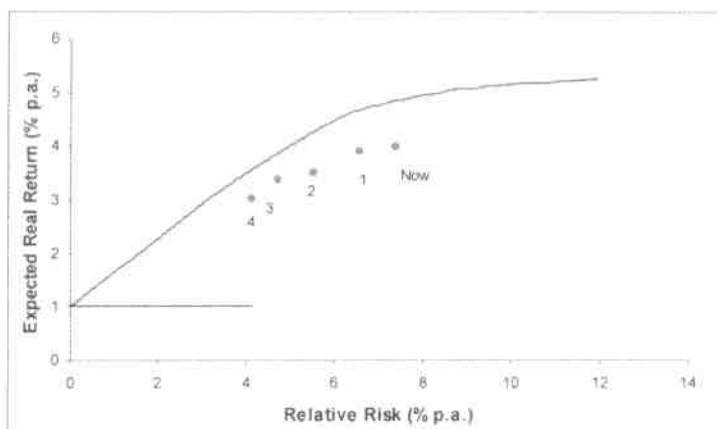
- **Portfolio 1:** 40% UK Equities, 20% Overseas Equities, 15% Fixed Interest, 15% Index-Linked, 10% Property. *This diversifies within the equities, within the bonds, and introduces a new asset class.*
- **Portfolio 2:** 32.5% UK Equities, 17.5% Overseas Equities, 15% Fixed Interest, 25% Index-Linked, 10% Property. *This starts to reduce the equities in favour of index-linked (with a current preference for corporate index-linked).*
- **Portfolio 3:** 30% UK Equities, 10% Overseas Equities, 15% Fixed Interest, 25% Index-Linked, 10% Property, 10% Absolute Return. *This damps equities down a little further, introduces a new asset class, and thus the overall risk level is down by a third from “Now”, but giving up only 0.5% pa or so of return.*
- **Portfolio 4:** 20% UK Equities, 10% Overseas Equities, 15% Fixed Interest, 25% Index-Linked, 10% Property, 10% High Yield, 10% Cash [thought of here as an ultra-short dated bond], 0% Absolute Return. *This introduces High Yield and Cash, but omits Absolute Return, and is heavily diversified.*

4.4 Portfolio 1 provides expected real returns that are in line with, or slightly lower than that expected from the current portfolio, but with slightly lower risk than the current approach. Portfolios 2, 3 and 4 show just how great a change is involved to get the annual risk down much further, and whilst the Committee may not relish yearly volatility, it may feel that the returns given up for the expected steadiness in these portfolios is simply too great.



- 4.5 For completeness, Figure 4.3 shows the analysis with risk measured as variability relative to a 100% ILG portfolio. None of the example portfolios have more than 25% in Index-Linked bonds. Portfolios with higher allocations to ILGs and Corporate Index-Linked would be further into the nose-cone of the diagram.

Figure 4.3: Efficient frontier with illustrative portfolios (relative risk)



- 4.6 For assets of around £200m, we do not think amounts of much less than 2% are material for moving (or for over-specifying benchmark weights); however, we tend to start at bigger weights, with shifts of 5% or more, hence the 'broad-brush' figures used for the example portfolios. The transaction costs of any proposed implementation route should also be considered before proceeding. If these are high (as can sometimes be the case for Property), then the Committee may wish to consider alternative asset splits.



5. Implementation Issues

- 5.1 The funds are with Baillie Gifford, whose management of the funds falls outside of the scope of this note. Even if some diversification across managers is introduced, we would advise against excessive fragmentation of the assets of the Funds, as this can generate an expensive version of index-tracking the relevant markets. In principle, diversifying between successful investment managers is good, but few (if any) investors or consultants have the ability to pick an entire set of outperforming managers. So, once the broad strategy has been determined from section 4, it is worthwhile considering how much subdivision is required.
- 5.2 Low volatility multi-asset funds could be worth considering because of their absolute return nature, and this is not an area currently offered by Baillie Gifford. The appeal is undeniable, given the lure that the fund should not go down heavily with markets. However, it is questionable whether such products have been tested enough to be used as a very significant proportion of a portfolio just yet (hence the earlier example portfolios not exceeding 10% in it), and the Committee need to be clear on how any potential product operates. They will generally make significant use of *either* a high bond weighting (to control the volatility) *or* significant asset allocation changes.
- 5.3 As was noted at the presentation meeting, we find that few 'conventional' bond managers add any real value net-of-fees, and we believe a better approach is for the Committee to consider what split it requires between Government / Corporate / High Yield, and to simply implement that through pooled index-tracking funds as far as possible. For Index-Linked Corporates, it would be more a case of constructing a well-diversified portfolio, as pooled tracker funds do not yet exist for that area. An alternative to the passive (or quasi-passive) route is to appoint a high-performance bond manager, if the Committee is prepared to accept the additional volatility from their returns.
- 5.4 Similarly, in Property, which is not within Baillie Gifford's stable of products, we find that it is very difficult for managers to provide consistency of returns, and that large funds can sometimes suffer (either from having too much uninvested cash in a strong market, or through having to have some properties they do not particularly wish to hold). In the absence of a practical index-tracking approach, our preferred alternative is a fund-of-funds route, which also helps to mitigate entry and exit costs. In general, Property fund-of-funds exhibit low volatility relative to the market as a whole. However, some are prepared to take substantial positions relative to the market, in terms of sector weightings and so on. Some property funds are listed on equity markets and therefore exhibit more volatility than from the underlying investments alone. This brings us back to the point about considering the impact that particular implementation routes have on the risk level of the overall portfolio.

6. Conclusion and Other Issues

- 6.1 The main issues to be discussed further with the Committee are as follows:
- The desired risk-return profile and the preferred risk measure.
 - The aggregate risk that is acceptable from combining strategy and manager implementation.
 - Any requirement for external manager selection input, and the resulting process for any changes to the existing investment manager arrangement and associated implementation issues.



Appendix A: Frontier Assumptions and Comment on their Justification

A.1 Table A.1 shows the assumed real return and risk figures for each of the various asset classes. The figures have recently been reviewed and have been adjusted slightly to account for current low bond yields. See section 4.3 for an example of the risk figure is applied.

Table A.1: Assumed risk and real return of asset classes

Asset class	Assumed REAL return (% p.a.)	Assumed risk (% p.a.)
Cash	1.00	1.50
Index-linked gilts	1.00	4.50
UK fixed interest	1.50	4.70
OS fixed interest	2.00	5.00
Absolute return	4.00	7.00
High yield	4.50	9.00
Property	4.75	9.50
UK equities	5.00	12.00
OS equities	5.25	12.50

- A.2 The cash return is based on our view of the margin investors can now earn ahead of inflation (from looking at the last 12 months' position, and considering current base rate levels). The low risk figure stems from our belief that cash returns are likely to be fairly stable for the foreseeable future. (Note that we are using a symmetric risk measure whereas clearly for some assets, ideally an asymmetric risk measure would be used. For example, given current yields at 5% p.a., the scope for further major rises in bond prices is limited, whereas the scope for major falls is not.)
- A.3 The returns for index-linked, UK, overseas and high yield fixed interest are determined by current market levels and published redemption yields on the assets (with some default allowed for on high yield) rounded slightly. As a rule of thumb, we would use a risk figure broadly equal to the expected nominal (not real) return on these assets, hence the risk statistic figures quoted. UK fixed interest could be subdivided into gilts and corporates but we have kept them as a single asset class for simplicity and because we believe the allocation between these classes is an implementation decision rather than a strategy one, and should be based on assessing the (currently very narrow) credit margins.
- A.4 The property return is more controversial. Running yields on property (before expenses) are at about 5%, so if capital values keep pace with inflation, that is the order of real return to be expected (although fees and running costs can reduce this to below 4%). However, we are inclined to factor in some capital decline, and hence have adopted a slightly lower return. As a rule of thumb, we would use a risk figure broadly equal to 1.5 times the expected nominal (not real) return on the asset, hence the risk statistic figure quoted.
- A.5 The equity returns are derived from forward-looking UK equity risk premium (ERP) calculations, as outlined in our January and February 2003 *Investment Updates*, available on our website. As a rule of thumb, we would use a risk figure broadly equal to between 1.5 times and twice the expected nominal (not real) return on these assets, hence the risk statistic figures quoted. However, the overseas equity assumptions are open to challenge in at least two ways. First, if the Committee were to impose a "currency hedge" requirement, the volatility would reduce slightly, but so too would the return – but it is unusual for such a requirement to be imposed when exposure is through pooled vehicles. Second, current ERP calculations for the US suggest its expected local return to be rather below that of the UK – even allowing for higher returns from less-developed markets, the overall return assumption could be made lower than the UK without a corresponding reduction in volatility (at which point the use of overseas equities becomes much less efficient).



A.6 Table A.2 shows the assumed correlation figures between each of the various asset classes. The correlations have been assessed after analysing rolling monthly, quarterly and annual data since January 1992. The important thing here is not always the actual values but the magnitude and sign of the correlation that they imply (see Table A.3 for an explanation). For example, the value of 0.8 for UK and overseas equity indicates that they are highly positively correlated, which we would expect both from intuition and our analysis.

Table A.2: Estimated correlation between assets

	Cash	Index-linked gilts	UK fixed interest	OS fixed interest	Absolute return	High yield	Property	UK equities	OS equities
Cash	1.0	0.4	0.4	0.5	0.1	0.3	0.0	0.2	0.2
Index-linked gilts		1.0	0.8	0.5	0.1	0.3	-0.2	0.4	0.3
UK fixed interest			1.0	0.4	0.1	0.1	-0.1	0.2	0.0
OS fixed interest				1.0	0.1	0.1	-0.3	0.0	0.2
Absolute return					1.0	0.1	0.1	0.1	0.1
High Yield						1.0	0.0	0.5	0.5
Property							1.0	0.1	0.0
UK equities								1.0	0.8
OS equities									1.0

Table A.3: Explanation of correlation coefficients

Correlation	Relative to their expected return, assets X and Y behave...
+1	In identical directions [both outperform or both underperform]
Positive but below 1	Usually in identical directions
Zero	Independently
Negative but above -1	Usually in opposite directions
-1	In complete opposite directions [one outperforms and one underperforms]

- A.7 Index-linked gilts, and UK and overseas fixed interest display an unusually high degree of correlation. We suspect that this would be lower in future, because there is likely to be less scope for major yield shifts (the dominant factor in getting very similar returns), but we have allowed the historical data to be used at this stage. For high yield we have assumed similar figures to those of other bond classes.
- A.8 Property correlation with most other assets is small (and negative), mostly due to the steady returns that were made during a time of variable returns for other asset classes. There is an argument for making it have a modest positive correlation with bonds, if no further re-rating of either class is expected.
- A.9 The "absolute return" correlation is assumed to be low but positive, given that it is long-only but will vary its asset allocation significantly over time.
- A.10 There are no single right answers as to the assumptions that should be used. Although much data has been used to estimate these figures, 16 years is still only a relatively short term in investment, and any unadjusted past data should be treated with caution. The Committee should satisfy themselves that the assumptions used are reasonable. This might include (but should not rely on) an analysis of past returns. The table overleaf shows the past annual real (above inflation) returns of the asset classes under consideration since 1992¹ (the last 16 years²). The average real returns over the period are shown at the bottom of the table along with the standard deviations. All entries are in %.

¹ High Yield data from 1998

² Longer data sets exist but there is the separate question of whether earlier data should have the same weighting / importance attached as more recent data



Table A.4: Historical Real Returns

Year	Cash	ILG	UK Bonds	OS Bonds	High Yield	Property	UK Equity	OS Equity
1992	7.4	13.5	14.0	26.8		-2.6	17.5	13.5
1993	4.1	16.7	31.8	12.0		14.2	26.0	22.6
1994	2.7	-9.6	-14.6	-6.7		12.0	-8.5	-2.3
1995	3.6	8.2	13.7	16.7		-0.0	20.0	16.0
1996	3.7	3.9	6.3	-8.4		6.7	13.9	-1.3
1997	3.3	9.8	18.6	1.1		11.7	19.2	14.8
1998	4.7	16.7	26.2	10.6	-0.8	9.2	10.7	18.8
1999	3.8	2.0	-2.1	-3.8	4.1	12.2	22.0	28.7
2000	3.2	1.3	4.9	7.4	-1.2	7.4	-8.6	-7.2
2001	4.4	-1.2	-1.6	1.0	5.1	6.3	-13.9	-14.6
2002	1.1	5.1	6.8	4.8	-13.2	7.4	-24.9	-29.2
2003	0.9	3.7	-1.6	0.2	14.3	8.3	17.6	17.8
2004	1.1	4.8	4.8	-1.0	1.3	14.3	9.0	4.3
2005	2.5	6.6	8.6	2.1	11.0	16.3	19.4	22.6
2006	0.4	-1.5	-4.2	-11.5	-4.7	13.1	11.8	1.9
2007	2.0	4.2	-1.3	5.0	-1.8	-9.2	1.2	6.9
Geometric Mean	3.0	5.0	6.3	3.1	5.4	7.7	7.2	5.9
Arithmetic Mean	3.1	5.3	6.9	3.5	5.7	7.9	8.3	7.1
St dev.	1.8	6.8	11.9	9.7	8.6	6.8	14.9	15.4

Notes: Data is as per Jagger & Associates' monthly Investment Update.

- A.11 Returns for the Absolute Return asset class are very much dependent on the product used. In other cases where we are providing manager selection guidance, we would look for a product that suited the Committee's chosen target return. The profile adopted in our reports plays down the expected return slightly, but increases the volatility from that professed by managers' marketing literature.
- A.12 Some of the returns in the table are surprising and probably unlikely to be repeated. For example, the very high returns on UK Bonds in some years (when future inflation expectations were revised down) have pushed the average up above that of other asset classes (close to that for equity). It would therefore be wrong to rely on these because the assumptions used should be appropriate estimates of prospective returns and risks. There may be valid reasons why past and future patterns are not the same. In particular, average past returns depend heavily on the period looked at.
- A.13 We generally determine our assumptions according to fairly broad rules:
- There are no right or wrong answers but the assumptions should provide a sensible framework for decision-making. (Any decisions should reflect the level of accuracy inherent in the model e.g. we generally only consider changes to the portfolio of 5% or more.)
 - Any individual assumption should be consistent with the other assumptions. It is more important that the assumptions for any individual asset are sensible when compared with other assets that the individual assumptions being correct.
 - The assumptions should not be too precise as this would simply lead to spurious accuracy and provide results that depend too much on the assumptions. A useful model should be fairly robust with respect to small changes in the assumptions anyway e.g. small changes in the assumptions should not lead to large changes in the results.
- A.14 It would be straightforward to re-run the analysis with different assumptions if required (even just to test the effect of using different assumptions).