

## The Benefits of Portfolio Diversification

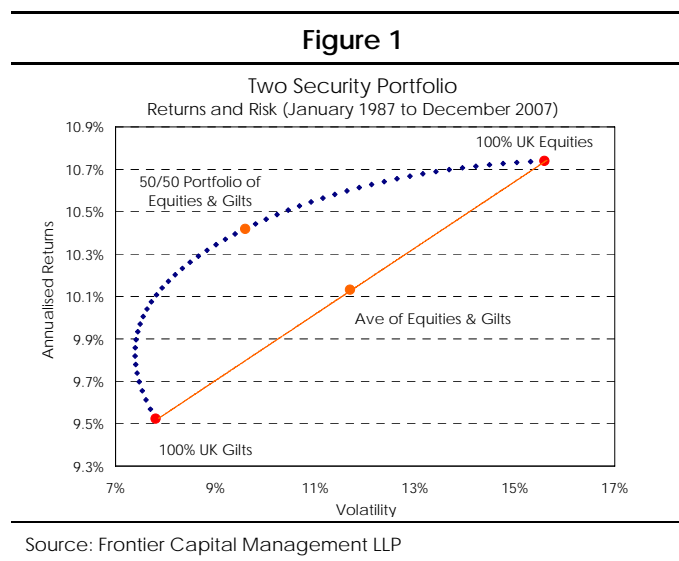
Research article by Frontier Capital Management LLP  
January 2008

The second half of 2007 has been a period of heightened volatility in financial markets. Without passing judgment on current valuations, this article looks at portfolio diversification and considers the benefits in the event of a decline in the UK equity market.

Portfolio diversification is a widely embraced investment strategy that helps mitigate the unpredictability of markets for investors. It has the key benefits of reducing portfolio loss and volatility and is especially important during times of increased uncertainty.

Modern Portfolio Theory, for which Harry Markowitz was jointly awarded the Nobel Prize in 1990, provides the academic bedrock for diversifying portfolios. Simply stated, by combining assets that are not perfectly correlated, that is, do not move in perfect lock-step together, the risks embedded in a portfolio are lowered and higher risk-adjusted returns can be achieved. The lower the correlation between assets, the greater the reduction in risk that can be derived. Modern Portfolio Theory was first developed with individual securities in mind but can also be applied to combinations of asset classes. Consider the situation in which an investor has an exposure to just one asset class, such as to UK Equities. The fortunes of this investor will rise and fall completely with that for UK Equities. But if this investor diversifies to also hold UK Gilts, some of the risks embedded in this portfolio can be removed without necessarily impacting on returns. As one asset class performs strongly, the other may not. In the October 1987 equity market crash for example, UK Equities declined 27% for the month while UK Gilts increased by approximately 6%.<sup>1</sup>

Figure 1 illustrates the risk-return relationship for UK Equities and UK Gilts. UK Equities have a higher return and risk profile than UK Gilts. The curved line, which represents different portfolio combinations of the two asset classes, indicates that the return-risk profile of a portfolio of assets is greater than the average of the individual assets. This is the diversification benefit explained by Modern Portfolio Theory. Diversification away from equities reduces risk while still providing attractive returns.



<sup>1</sup> Data in this report are for the period January 1987 to December 2007 and were currency hedged into sterling where applicable. Hedge Fund and Manage Futures returns have been reduced by 1% per year to adjust for survivorship bias.

A logical extension of the two asset class example is to diversify further, to include exposure to additional asset classes. Economists and financial academics refer to the “Market Portfolio” as the combination of all assets classes that generates the highest risk adjusted returns. This portfolio is massively diversified and continually changing, and for this reason it is not possible to own in practice. Nevertheless the Market Portfolio provides a useful guideline for the reduction of risk: to diversify as much as possible amongst uncorrelated assets. This diversification should not be restricted to one country but should include all asset classes globally.

To understand the benefits of global diversification it is useful to separate the risk of investments into two broad types, security specific risks and market risks. Security specific risks result from factors specific to the security, such as management skill at a corporation. Security specific risks can be almost eliminated by gaining an exposure to a whole asset class. Market risk results from factors that impact on groups of securities or a whole asset class, such as interest rates or macroeconomic factors like the business cycle. By diversifying between asset classes we can reduce market risk and because of different economic factors between countries, global diversification can reduce these risks even further.

The benefits of global diversification are illustrated in Figure 2, which considers four portfolios each with increasing levels of diversification. Even when diversifying within the UK investors are able to achieve a significant reduction in risk. Relative to Portfolio 1, which contains only UK Equities, the addition of UK Gilts and UK property reduces volatility by over 35% and reduces the maximum loss by over 40%. However, much greater benefits are derived by diversifying globally. Portfolio 4 has exposure to global equities and bonds and includes alternative asset classes, and this diversification results in a 60% reduction in volatility, roughly 70% reduction in the maximum loss, as well as an improvement in portfolio returns.

**Figure 2 – Portfolio Returns (Jan 1987 to Dec 2007)**

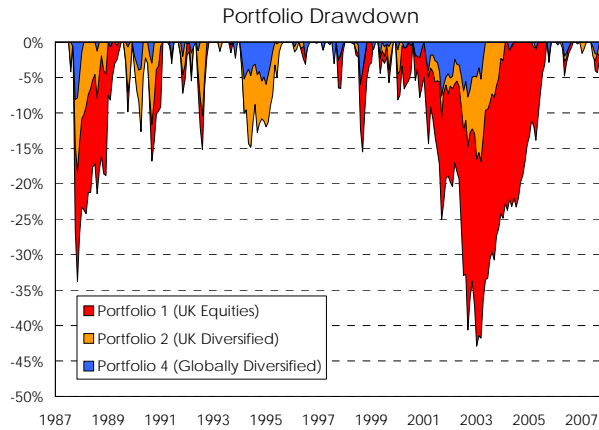
	Portfolio 1	Portfolio 2	Portfolio 3	Portfolio 4
UK Equities	100%	45%		
UK Gilts		45%		
UK Property		10%		
Global Equities			45%	35%
Global Bonds			45%	35%
Global Property			10%	7.5%
Commodities				7.5%
Hedge Funds				7.5%
Managed Futures				7.5%
Annualised Return	10.7%	10.6%	11.1%	11.6%
Volatility (Std Deviation)	15.6%	9.9%	7.6%	6.3%
Maximum Loss	-42.9%	-18.4%	-12.2%	-8.1%
Return / Volatility	0.7	1.1	1.5	1.8
Return / Max Loss	0.3	0.6	0.9	1.4

Source: Frontier Capital Management LLP

The main benefit of diversification is a reduction in risk. The drawdowns or peak-to-trough maximum losses of Portfolio 4 are nearly always below those of the other portfolios (Figure 3). This is particularly evident during the recent equity bear market of August 2000 to January 2003 when

UK Equities lost 43%, Portfolio 2 lost 17% and Portfolio 4 just 8%. Going hand-in-hand with smaller losses are shorter recovery times. It took Portfolio 4 just 8 months to recover from its maximum loss while it took Portfolio 1 almost 2 ½ years.

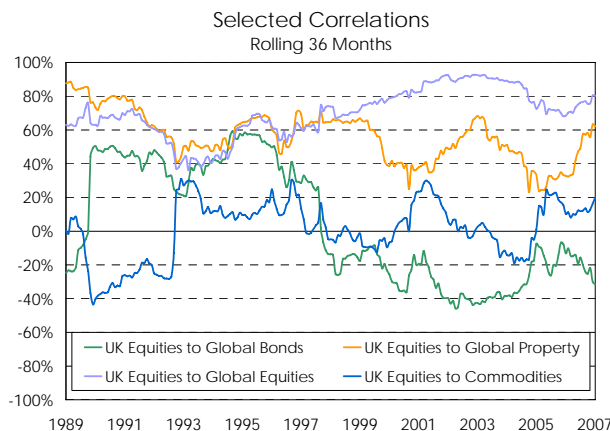
**Figure 3**



Source: Frontier Capital Management LLP

Successful diversification depends upon combining asset classes that are not perfectly correlated. The figure below shows the historic correlations between asset classes over the last 20 years. It may be thought that increasing globalisation of economies and markets would lead to increased correlations between asset classes. However as Figure 4 illustrates, correlations are below their peaks and so there are still diversification benefits available to investors. Moreover, correlations appear to be cyclical rather than containing any upward trends, suggesting global diversification benefits will continue in the future.

**Figure 4**



Source: Frontier Capital Management LLP

With increased uncertainty surrounding equity market valuations of late it is interesting to examine the benefits that diversification could bring during the next UK Equity bear market. Without knowing the likelihood or severity of the next equity bear market, taking the average of the largest 5 bear markets since 1987 suggests considerable benefits may be derived. Figure 5 presents the returns of various asset classes during these 5 bear markets. If we apply the average performance numbers to the portfolios weights considered earlier (in Figure 2) we see very large reductions in risk and volatility from global diversification. With a 25% decline in UK Equities, Portfolio 2 (UK diversified) declines 11% and Portfolio 4 (globally diversified) declines just 1.5%.

**Figure 5 – UK Equity Bear Markets (Jan 1987 to Mar 2007)**

Equity Drawdown	UK Equities	Global ex UK Equities	Global Bonds	Global Property	Comm - odities	Hedge Funds	Managed Futures
Aug 2000 to Jan 2003	-43%	-42%	26%	10%	7%	1%	31%
Sep 1987 to Nov 1987	-34%	-18%	6%	-24%	2%	-9%	12%
Dec 1989 to Sep 1990	-17%	-22%	6%	-35%	58%	20%	30%
May 1998 to Sep 1998	-16%	-9%	7%	-13%	-7%	-11%	9%
May 1992 to Aug 1992	-15%	2%	5%	-7%	0%	3%	20%
<i>Average</i>	<i>-25%</i>	<i>-18%</i>	<i>10%</i>	<i>-14%</i>	<i>12%</i>	<i>1%</i>	<i>21%</i>

Source: Frontier Capital Management LLP

This article highlights the twin benefits that diversification can bring; a reduction in the risk of losses and a reduction in portfolio volatility. Even when diversifying domestically significant benefits can be achieved. However to maximise diversification benefits investors should strive for a global exposure to broad asset classes. This reduces both security specific and market risks to even lower levels. Diversification will not guarantee a profit or assure against losses during bear markets, however it should at the very least provide considerable protection of some of the gains investors have thus far accumulated.

This article was prepared by Richard Brazenor at Frontier Capital Management LLP. Frontier Capital Management is the investment manager of a range of globally diversified multi-asset funds. For further information please visit [www.FrontierCM.com](http://www.FrontierCM.com)

**IMPORTANT INFORMATION**

This presentational material is for information purposes only and is not a solicitation for investment. The terms and conditions of the Multi Asset Platform Fund SPC are set out in the Prospectus to the Fund. All persons wishing to invest in the Fund should read the prospectus in order to familiarise themselves with these terms and conditions. In the event that there are any differences between this presentational material and the Prospectus, the terms of the Prospectus will prevail.

This document is issued by Frontier Capital Management LLP which is authorised and regulated by the Financial Services Authority ("FSA"). The funds offered by Frontier are defined as "Unregulated Collective Investment Schemes" ("UCIS") and the promotion of a UCIS either within the UK or from the UK is severely restricted by statute. Consequently, this document is only made available to Intermediate Customers and Market Counterparties as defined by the FSA and to persons falling within the Financial Services and Markets Act 2000 (Promotion of Collective Investment Schemes) (Exemptions) Order 2001. Shares in such funds should only be purchased by persons with professional experience of participating in unregulated schemes.

**PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE PERFORMANCE**