

The Case for a Global Risk-Balanced Approach for DC Investments

FQ Insight

Challenges for the DC Market

Many DC providers use balanced funds as the default option in DC funds. In the UK, diversified growth funds (DGFs) have emerged as market leaders for the balanced fund option. Generally comprised of a mixture of asset classes, they are sold as well-diversified enough to be able to perform in all market conditions and able to withstand market volatility. However, in 2008, many DGFs underperformed significantly and this has led to questions as to whether these are really the best options for DC investors?

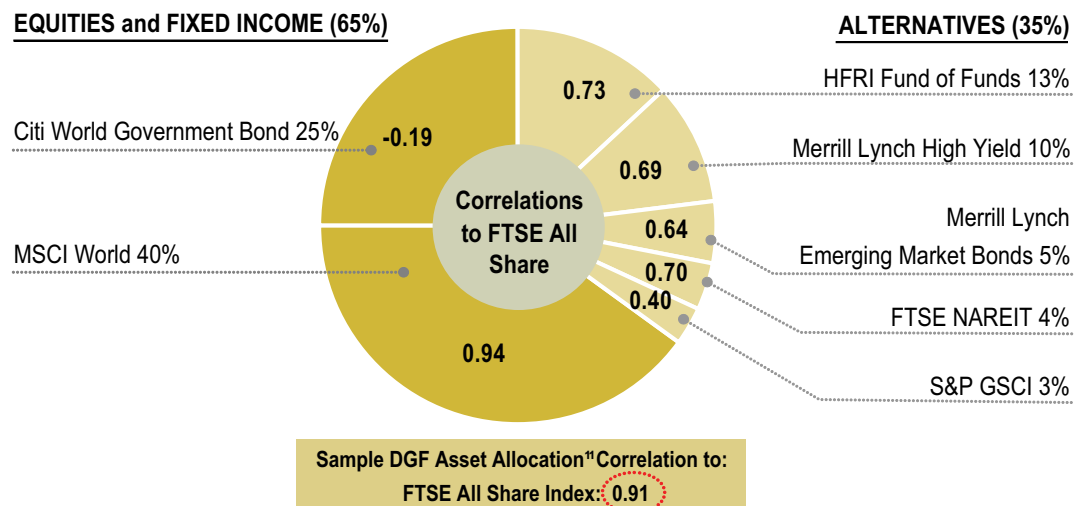
We must first consider the two basic needs of DC investors:

1. Growth of capital during the accumulation phase of saving for retirement to fund retirement at a satisfactory level.
2. Predictable and consistent investment risk to maintain value before the lump sum is converted to an annuity.

DGFs do offer capital growth potential although this may incur greater risk than necessary, as DGFs typically fall short of providing investors with a predictable and consistent risk experience. Although DGFs are often considered to be diversified, our analysis shows that often they are in fact highly correlated to equity markets.

The chart below shows the asset allocation for a typical DGF.

FIGURE 1: SAMPLE DIVERSIFIED GROWTH ASSET ALLOCATION¹
Correlations to FTSE All Share Index – Five Years Ending June 30, 2010



Sources: First Quadrant, LP, StyleAdvisor, Bloomberg

¹Sample Diversified Growth Asset Allocation is a hypothetical portfolio used for illustrative purposes only.



As can be seen this portfolio contains global equities, three types of bonds: sovereign, high yield and emerging market, property, commodities and hedge fund of funds and definitely “sounds” like a diversified portfolio. However, closer inspection reveals a 91% correlation with the FTSE All Share, due to the high correlations of individual asset classes with the equity market. Sovereign bonds is the only asset class that is negatively correlated with the FTSE All Share. So whilst this portfolio may sound diversified, the inclusion of assets with high correlations to the FTSE All Share negates the benefits of having a range of different asset types.

Between 2003 and 2007, investors saw declining financial market volatility and generally positive asset class returns. This led to investors relaxing their risk tolerance levels and turning to more risky assets in the hope of seeing higher returns. Sovereign bonds, safe but low-yielding assets, were replaced by more risky assets such as high yield bonds and emerging market debt. However, investors did not realize these assets are more correlated to the equity market. So whilst they may give a higher return in times of market volatility, they do not act as a stabilizing component of the portfolio. A 25% allocation to sovereign bonds will be overwhelmed by equities and other equity-like assets. In this situation, a much higher weight to sovereign bonds or much lower weight to equities would be needed to reduce a DGF’s overall correlation to equities.

The characteristics of the equity market can be seen in Figure 2. While we believe that equities outperform bonds over time, it can take a very long time for the returns to materialize. Investors relying mainly on equities for growth need to be exceedingly patient, and they must have the fortitude to withstand roller-coaster volatility. The DGF portfolio shown in Figure 1 had 72% of assets with correlations to the equity market in excess of 60% which would exhibit a similar pattern of returns as that below. We believe it is unlikely the chart in Figure 2 is the ideal return series for a DC investor.

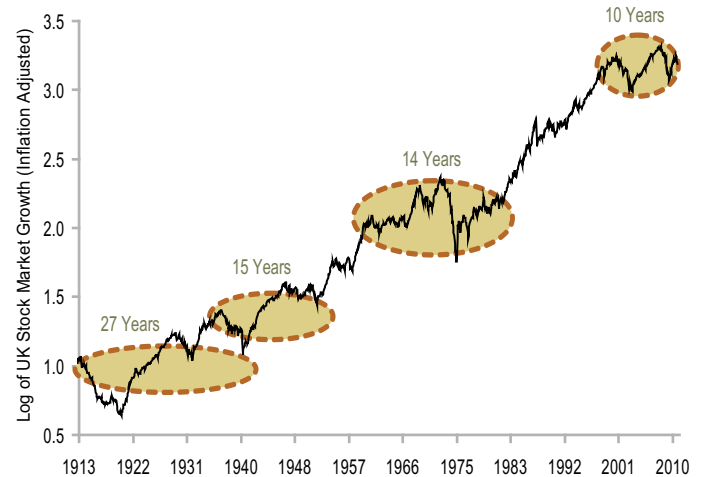
Risk-Balancing – A Better Solution?

We believe a better solution is risk balancing. We believe there are three components to this approach:

1. Risk Balancing Across Asset Classes

We believe using capital allocation – weighted by the amount of capital in each asset – to assess asset allocation, can be misleading when the portfolio is composed of assets with very different levels of risk – usually the case with balanced portfolios. We prefer risk allocation using the proportion of risk that comes from each portfolio asset. A traditional balanced portfolio with a capital allocation

FIGURE 2: HOW LONG TO WAIT FOR ‘STOCKS FOR THE LONG RUN’
Real Returns: January 1913 – June 2010



Source: Global Financial Data (GFD)

Stocks for the Long Run, By Jeremy J. Siegel, McGraw-Hill Companies, 4th Edition.

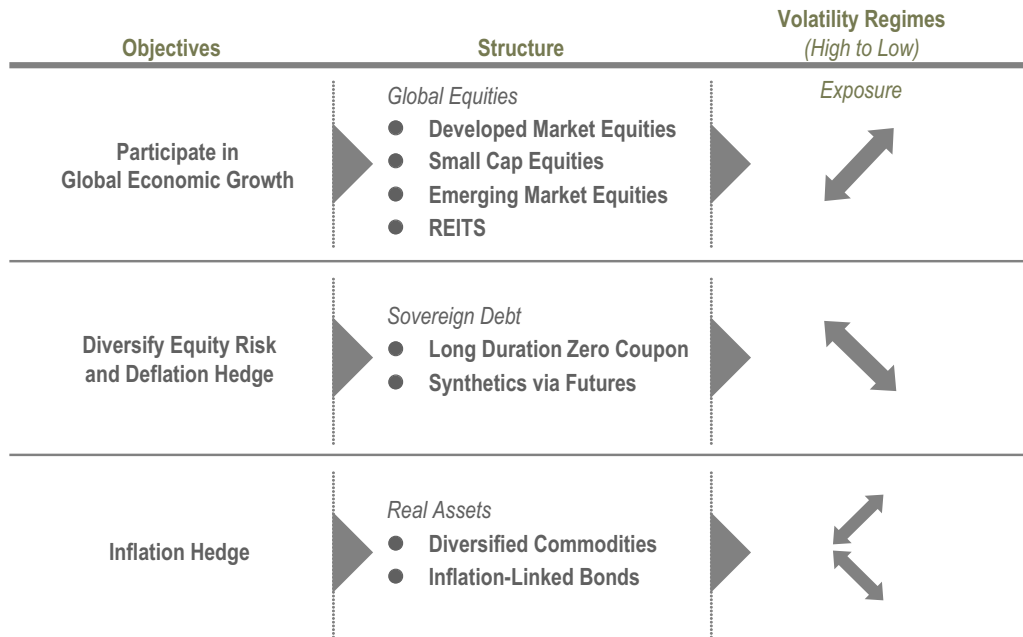
of 60% to equities and 40% to fixed interest has, from a risk allocation perspective, 90% of the risk generated by equities and 10% from fixed interest.

A portfolio with the highest Sharpe ratio on an efficient frontier, by contrast, has a capital allocation of 28% to equities and 72% to fixed-interest, which translates into risk allocations of 50% equities / 50% fixed-interest. Information above is a long-term perspective based on empirical evidence. Equities are based on broad market index and fixed interest is based on broad market long-term sovereigns.

In building a portfolio, we believe portfolios built from three categories of assets are most likely to satisfy DC investor objectives. First, investors saving for retirement usually require growth of capital, and an allocation to global equities makes an important contribution to growth. Second, sovereign bonds are an effective hedge against equity risk and a hedge in deflationary periods. Third, most DC investors are concerned about maintaining purchasing power, so an allocation to real assets (inflation-linked bonds and commodities) provides inflation protection. Figure 3 summarizes the asset classes in our preferred DC portfolio, which we refer to as ‘risk-balanced.’

There are many asset classes that we exclude from the risk-balanced portfolio. Corporate bonds are an example. Corporate bonds can be decomposed largely into risk-free interest rate exposure and equity exposure. Both of these exposures are provided by the equities and sovereign bonds, so there is no need to duplicate them with a holding of corporate bonds.

FIGURE 3: WHAT IS ESSENTIAL TO BUILD A RISK-BALANCED PORTFOLIO?



2. Risk Balancing Within Asset Classes

In addition to risk balancing between asset classes, large benefits are available from balancing risk within asset classes. Here we are referring to balancing risk across the individual country equity and bond markets, and across individual commodities. Risk balancing within asset classes prevents over-concentration in any single country or commodity. It removes dominance due to capitalization or (commodity) production weights. Risk weighting re-

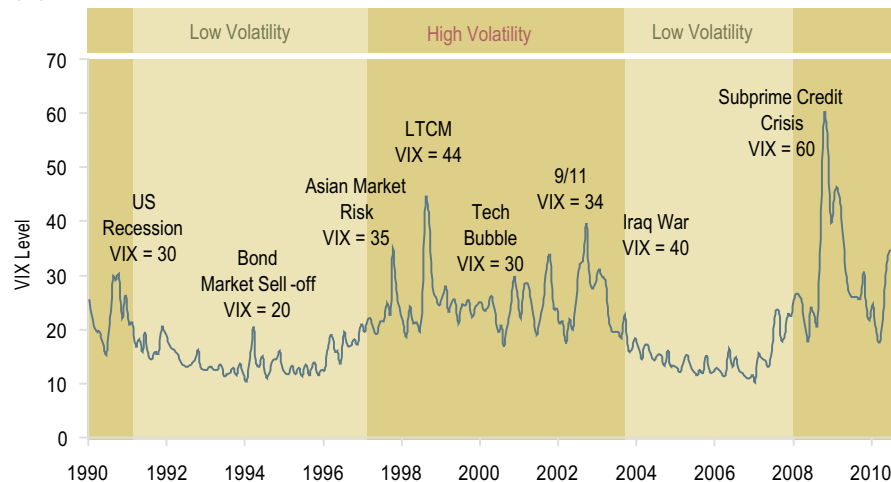
duces the portfolio’s susceptibility to price bubbles forming in specific countries, regions or commodities. It also prevents the portfolio from loading up on a country’s debt for the dubious reason that the country has issued a great deal of debt.

3. Risk Balancing Across Time

Looking back over the past 20 years, we can see that periods of elevated or depressed volatility tend to be persis-

FIGURE 4: VOLATILITY REGIMES IMPACT ASSET ALLOCATION

January 1990 – June 2010



Sources: Chicago Board Options Exchange, First Quadrant, LP



tent – they usually last several months and often years, as shown in the chart below. The chart below shows the historical level of the VIX, a popular indicator of market risk.

Our research has shown that in times of heightened risk, the correlation between equities and sovereign bonds decreases and often becomes negative. Thus we believe that risk balancing across time will lead to a more consistent risk budget. This is achieved by changing the portfolio allocation depending on the volatility regime. In high volatility regimes, the allocation to risky assets – equities and commodities – should be reduced, and the allocation to sovereign bonds increased. Conversely, in low volatility regimes, the allocation to risky assets should be increased at the expense of sovereign bonds.

The result of balancing risk through time is that the portfolio has approximately the same average risk level regardless of the volatility regime, and we believe investors want better predictability, compared to the more pronounced swings experienced by DGFs.

A further research insight is that risk-balancing through time, when properly implemented, actually improves the

Sharpe ratio. As shown in Figure 5 below, our risk-balanced model portfolio has outperformed traditional DGFs over a 10 year period:

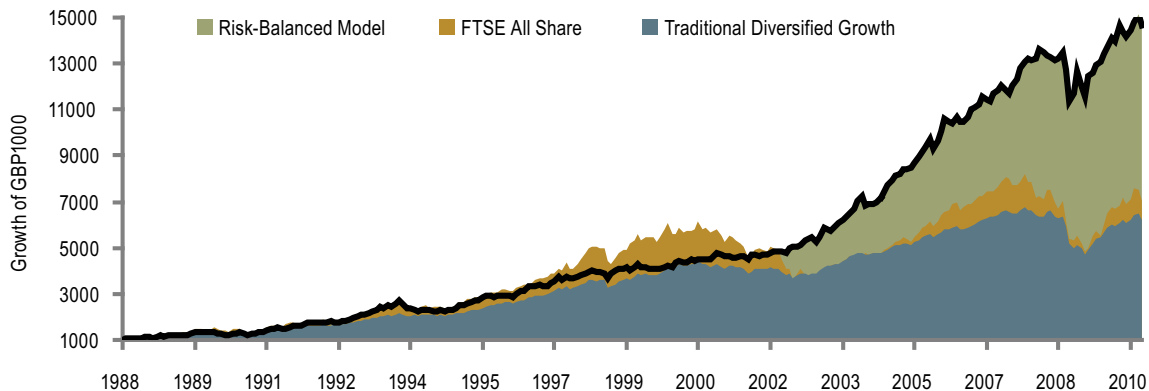
Conclusion

We have looked at typical DGFs and whilst we appreciate there are many different DGF approaches we have highlighted some of their inherent problems for investors.

In describing the three components of risk balancing we believe we have made a compelling argument for their usage. We believe the implementation of the risk balancing approach will help DC schemes to provide their members with a more appropriate default fund. The expected benefits of the risk-balanced solution compared to DGFs, can be summarized as follows:

- Lower correlation to equity markets
- Higher expected reward-to-risk ratio
- Better maintenance of purchasing power
- Comparable or higher level of expected return

FIGURE 5: GROWTH OF GBP: A BETTER SOLUTION¹



Sources: Bloomberg, Global Financial Data (GFD), StyleAdvisor.

¹Risk-Balanced Model results are supplemental information. Please see Simulation Disclosures: Essential Beta GBP – Simulated Performance (Gross of Fees) and Essential Beta Composite Information (performance used in simulation) and Essential Beta Strategy disclosures found at the end of this presentation for information concerning this simulation, the live composite, and the effect of fees on the performance. Traditional Diversified Growth is a hypothetical plan used for illustrative purposes. It is composed 40% MSCI World (local currency), 25% Citi World Government Bond Index (local currency), 10% ML High Yield Master, 5% ML Emerging Market Sovereign Plus Bonds, 4% NAREIT, 3% S&P GSCI, 13% HFRI FoF. The exposures were hedged to GBP (unless indicated as local), rebalanced monthly and no transaction costs were assumed.



DISCLOSURE — Essential Beta GBP – Simulated Performance — Simulated performance is no guarantee of the future results in a live portfolio using the strategy. Potential profit is accompanied by possibility of loss. General Disclosures: The simulated performance used in this presentation will differ from live performance that would have been experienced using the strategy for the following reasons: • The simulation assumes that we adjust the risk and capital allocated to each sub-strategy on a monthly basis after the close on the last day of each month, whereas the live product may not adjust the allocations exactly at that time. • The simulation assumes that the strategy and sub-strategy guidelines are constant through the life of the portfolio, whereas, the guidelines for live portfolios may have changed over the life of each portfolio. • The simulation assumes fixed transaction costs whereas live portfolio transaction costs will be variable. • The simulation uses a synthetic long duration zero coupon bond for each bond country allocation. The cash return for the synthetic bond can vary by broker. • The simulation assumes all trading takes place once a month (on the last day of the month) whereas live portfolios may trade often during the month. • Hypothetical or simulated performance results have certain inherent limitations. Unlike an actual performance record, simulated results do not represent actual trading. Also, since the trades have not actually been executed, results may have under or over compensated for the impact, if any, of certain market factors, such as lack of liquidity or positions need to be rounded based upon contract size when future trades are being executed. Simulated trading programs in general are also subject to the fact that they are designed with the benefit of hindsight. No representation is being made that an account will or is likely to achieve profits or losses similar to those shown. Unless otherwise noted, performance returns for one year or longer are annualized. Performance returns for periods of less than one year are for the period reported. **Disclosures Specific to Simulation:** The Essential Beta simulation is constructed with the goal to diversify risk in a portfolio by strategic allocation of risk to several sub-strategies/asset classes including, without limitation: Developed Market Equities; US Small Cap Equities; Emerging Market Equities; Real Estate Investment Trusts (“REITs”); Diversified Commodities; US Treasury Inflation-Protected Securities (“US TIPS”), and Long Duration Zero Coupon Synthetic Bonds (“Synthetic Treasuries”). The simulation assumes Synthetic Treasuries are created by using futures on various developed country sovereign bonds. The simulation additionally attempts to balance risk relative to country and sector weightings. The simulation targets overall portfolio risk allocations based on pre-determined indicators of market risk which may change over time. Simulated performance has been adjusted to account for the difference between the GBP three month LIBOR and USD three-month LIBOR. **Investment Management Fees:** All performance results presented include trading commissions. The FQ investment management asset-based fee schedule (assets managed in millions) for this strategy, which is negotiable, is as follows: \$0–\$100, 0.50%; \$100–\$350, 0.30%; more than \$350, 0.15%. Asset-based fees are charged incrementally. For example, a \$200 million dollar portfolio will be charged .50% for the first \$100 million, 0.30% for the next \$100 million.

COMPOSITE INFORMATION

| Essential Beta Strategy | Total Return Net | Number of Portfolios ¹ | Composite Dispersion (%) | Total Composite Assets ¹ (Millions USD) | % of Firm Assets ¹ | Total Firm Assets ¹ (Millions USD) | *Actively Managed AUM ^{1,2} (Millions USD) | *Total Firm Assets (Including Notional Values) ^{1,3} (Millions USD) |
|-------------------------|------------------|-----------------------------------|--------------------------|--|-------------------------------|---|---|--|
| 2009 (Mar-Dec) | +23.3% | <5 | – | 6 | 0.1 | 7,867 | 17,342 | 17,427 |
| 2010 (Jan-Jun)** | +2.7% | <5 | – | 211 | 2.9 | 7,179 | 16,590 | 16,673 |

See Additional Disclosures for important information concerning this composite and the effect of fees. *Supplemental Information. **All performance and AUM data is preliminary. ¹At End Period Reported. ²Includes market values for fully funded portfolios and the notional values for margin funded portfolios, all actively managed by First Quadrant and non-discretionary portfolio managed by joint venture partners using First Quadrant, L.P. investment signals. First Quadrant is defined in this context as the combination of all discretionary portfolios of First Quadrant, and its joint venture partners, but only wherein FQ has full investment discretion over the portfolios. ³Includes market values for fully funded portfolios and the notional values for margin funded portfolios managed by First Quadrant and non-discretionary portfolios managed by joint venture partners using First Quadrant, L.P. investment signals. First Quadrant is defined in this context as the combination of all discretionary portfolios of First Quadrant, L.P. and its joint venture partners, but only wherein FQ has full investment discretion over the portfolios.

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