
PRACTITIONER'S DIGEST

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WHAT INTEREST RATE MODELS TO USE? BUY SIDE VERSUS SELL SIDE **PAGE 5**

Sanjay K. Nawalkha and Riccardo Rebonato

The recent financial crisis showed how various buy-side institutions were fooled by the major sell-side dealer banks. Even though many CDO pricing models were wrong, some investment banks such as Goldman Sachs took exposure on both the long side and the short side of the market, canceling the hedging errors resulting from using the wrong CDO pricing models. In this paper, Sanjay Nawalkha and Riccardo Rebonato debate whether a similar problem applies to the interest rate derivatives market, which is a much bigger market consisting of \$450 trillion in notional value of swaps, FRAs, caps, swaptions, and other structured interest rate products. Responding to Nawalkha’s [2010] critique of the LMM-SABR model, Rebonato argues that the LMM-SABR model is currently the best available model for the sell-side dealer banks for pricing and hedging large portfolios of complex interest rate derivatives within tight time constraints. Nawalkha in his rejoinder argues that LMM-SABR model suffers from the criticisms of time-inhomogeneity and zero-mean reversion in forward rate volatilities, and while the use of the LMM-SABR model by sell-side dealer banks is justified due to the cancellation of hedging errors, the use of this model by the buy-side institutions is useless at best, and dangerous at worst. Buy-side institutions must use time-homogeneous fundamental and single-plus interest rate models (e.g., such as affine and quadratic term structure models) for risk-return analysis under the physical measure, as this cannot be done using the time-inhomogeneous double-plus and triple-plus versions of the LMM-SABR model.

FAT TAILS AND STOP-LOSSES IN PORTABLE ALPHA **PAGE 19**

Mark B. Wise, Yonathan Schwarzkopf and Vineer Bhansali

Portable alpha works by directing some portion of cash invested for market exposures into alpha investments that may be correlated with the market (beta) instruments. We solve the portfolio allocation

problem when there is a stop-loss on the alpha investment. The optimal stop-loss level maximizes the investors utility of wealth for a portfolio consisting of a portable alpha fund and risk free assets. In particular, we discuss how a risk averse investor should evaluate risky alpha assets in the presence of a stop-loss, the optimal choice of the liquidation threshold and asset allocation in the presence of stop-losses.

To capture different regimes we model the dynamics of the assets as a combination of a normal era where returns on average are positive and stressed era where returns on average are negative. We discuss the dependence of the optimal choice of stop-loss and the Sharpe ratio of the portfolio on the probability of being in the stressed era, the average return of the alpha asset in the stressed era and on the cost of liquidating the risky asset.

THE PERFORMANCE, Pervasiveness, AND DETERMINANTS OF VALUE PREMIUM IN DIFFERENT US EXCHANGES: 1985–2006

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George Athanassakos

Using AMEX, NASDAQ and NYSE stock market data for the period 1985–2006, the purpose of this paper is to provide further evidence on the value premium (i.e., whether value stocks tend to have higher average returns than growth stocks) and, particularly, whether the value premium is driven by risk or behavioral factors. The paper utilizes a more comprehensive set of data and tests than previous studies and a research methodology that minimizes potential data snooping problems and confounding inferences.

The paper demonstrates (a) that the value investing style works in the sense that, on average, value stocks beat growth stocks and (b) that risk is not what drives this outperformance. The paper's conclusions both with regards to the value premium and its drivers hold up well to various robustness tests. Our results are consistent with, but, in general, stronger than, those of other US studies. A better picture of the value premium is obtained when looking at markets individually, as opposed to in aggregate. Previous studies' results seem to be driven primarily by AMEX and NYSE stocks, as NASDAQ stocks experience much stronger value premium than other markets.

The paper's findings will be useful to institutional investors whose survival is tied to their short run performance vs. benchmarks for the kind of investment and risk they bear. Information, such as the one provided in this paper, will help managers do better than average. The findings can also be quite useful to individual investors in light of fundamental changes that are taking place in the retirement planning industry according to which plan contributors are now required to take personal responsibility for their own financial well being at retirement. Academics working on modeling investor behavior and the demand for stocks will also benefit from this study. Finally, since what drives the outperformance of value stocks is not risk, the paper's findings shed doubt on market efficiency. The implication of this is that an investor can follow strategies, such as buying value (i.e., low P/E or low P/BV) stocks that, on average, beat the market.

PORTFOLIO DIVERSIFICATION**PAGE 74***James A. Bennett and Richard W. Sias*

Securities and portfolios contain two kinds of risk—systematic and firm-specific. This distinction is critical because well-diversified portfolios, which by definition have no firm-specific return uncertainty, are the bedrock upon which so much financial theory is built. The argument that arbitrageurs will ensure prices are efficient, for example, requires that investors can form well-diversified portfolios to eliminate mispricings. Moreover, most asset pricing models conclude that investors are only compensated for bearing systematic risks. Because the expected total risk (return standard deviation) of a relatively small portfolio is only marginally larger than that of the equal-weighted market portfolio, conventional wisdom, the CFA curriculum, the SEC, and nearly every finance textbook holds that investors can easily form well-diversified portfolios by owning a small number of securities—typical estimates range between eight and 50 stocks.

Conventional wisdom is wrong. We demonstrate that portfolio sizes typically viewed as well-diversified (e.g., 100 stocks) contain surprisingly high levels of unsystematic risk. Over the past 10 years, for example, a randomly-formed 100-stock portfolio had an annual firm-specific return standard deviation of 5.91%. Thus, an investor holding a typical (i.e., randomly formed) “well-diversified” 100-stock portfolio should expect a firm-specific shock every three years greater than Ibbotson and Chen’s (2002) estimated market risk premium (which, coincidentally, is also 5.9%)! Our results have a number of important implications for managers including:

- The construction of a well-diversified portfolio is tremendously difficult (if not impossible), and ‘approximately’ well-diversified portfolios must necessarily contain at least an order of magnitude more stocks than previously recognized;
- Anomalies may persist and price bubbles may arise because arbitrage is difficult and risky—the inability to easily form well-diversified portfolios means arbitrageurs cannot risklessly correct systematic mispricing;
- Managers holding even relatively large portfolios are neither closet indexers nor making pure systematic bets—even large portfolios (e.g., 200 stocks) with levels of total risk approaching that of market indices contain substantial firm-specific exposures and, as a result, managers should be concerned about firm-specific forecasts;
- Unsystematic risk may be priced because it is not easily diversifiable.

HEDGE FUNDS: A SENSIBLE APPROACH TO OVERSIGHT**PAGE 99***Antony E. Ghee*

After several years of debating whether additional regulation should be imposed on hedge funds, it now appears inevitable that Congress will soon enact some form of legislation that could significantly alter the scope of government oversight in an industry that has, until recently, been subject to little regulatory scrutiny. While competing proposals have made it somewhat difficult to discern what the final regulatory framework will be, the Securities and Exchange Commission (“SEC”) and President

Obama's administration have made clear their concerns about the growth of the hedge fund industry and provided core recommendations for its regulation. While the concerns cited by the SEC were many and included issues pertaining to valuation of securities, retailization, disclosure, conflicts of interest, and general solicitation, among others, the purpose of this article is to focus on the SEC's "inability to detect fraud and other misconduct at early stages" and propose a new framework upon which the SEC may improve its efforts to detect fraud and misconduct before hedge fund investors suffer significant losses.