

---

## PRACTITIONER'S DIGEST

---

The “Practitioner’s Digest” emphasizes the practical significance of manuscripts featured in the “Insights” and “Articles” sections of the journal. Readers who are interested in extracting the practical value of an article, or who are simply looking for a summary, may look to this section.



### **ALTERNATIVE CURRENCY HEDGING STRATEGIES WITH KNOWN COVARIANCES**

**PAGE 6**

*Wei Chen, Mark Kritzman and David Turkington*

Informed investors recognize that hedging at least some of a portfolio’s currency exposure, in most cases, improves its quality, but the best approach for doing so is not often obvious. We investigate a variety of currency hedging strategies, including linear strategies, non-linear strategies, and combinations thereof, to help investors determine their most suitable strategy.

Although there is not a unique hedging strategy that is universally superior, we are able to quantify the advantages and disadvantages of various hedging strategies and draw several general conclusions. For example, more flexible hedging constraints offer greater potential for risk reduction, non-linear hedging strategies using options offer clear tradeoffs between the degree of protection and the cost of the strategies, and both linear and non-linear strategies can be combined using full-scale optimization to account for non-normal payout structures and investor-specific preferences.

### **A STRUCTURAL MACRO-FINANCIAL MODEL AND MACRO-RISK MANAGEMENT**

**PAGE 25**

*Thomas S. Y. Ho and Sang Bin Lee*

This paper provides a structural macro-financial model that can be used for the cost and benefit analysis of alternative financial regulatory regimes. The model solves for the optimal financial sector size to the real aggregate asset (household leverage) and to the aggregate capital (financial leverage) that maximize the expected real output. This paper suggests that macro-risk management is necessary and managing the aggregate capital in the financial sector is important.

We illustrate the impact of some regulatory policies on the real outputs with some numerical examples. Our model shows that holding 2.39% in excess of the optimal capital ratio would lower the GDP

growth rate by 0.61%. Since the model shows that higher financial leverage would result in higher expected growth rate and volatility of real outputs, we suggest that macro-risk management also needs to determine a risk and return tradeoff of real output.

## **STRATEGIC ASSET ALLOCATION WITH LOW-RISK STOCKS: A BOOTSTRAP ANALYSIS**

**PAGE 39**

*Wai Mun Fong and Timothy Koh*

The security market line for stocks is flat or even negative, implying that stocks with low-betas have higher average returns than is predicted by theory. As early as 1993, Fischer Black suggested that an interesting way to exploit the low-beta anomaly is to substitute the market portfolio for a given stockbond asset allocation with low-beta stocks. For example, instead of a 60/40 stock/bond portfolio, an investor might want to consider a portfolio with 80% in low-beta stocks and the rest in bonds. Neither Black (1993) nor other researchers after him has pursued this idea in detail. In this paper, we take up Black's suggestion by providing simulation evidence on the advantages of low-beta stocks in the context of strategic asset allocation. Such a strategy would seem to be most appealing to loss-averse investors, for whom losses loom larger than gains of similar absolute magnitudes (Kahneman and Tversky, 1979; Tversky and Kahneman, 1992).

Focusing on a long-term (20-year) investment horizon, we show that an attractive solution for loss-averse investors is a portfolio that combines stocks with low betas and high dividend yield. We call this the "beta-yield" strategy. This strategy has three attractive features. First, low-beta and high dividend yield are complementary investment styles in that high dividend yield stocks are only slightly more volatile than low-beta stocks while both are much less volatile than the market portfolio. Moreover, low-beta stocks themselves have high dividend yields compared to high-beta stocks. Second the investor derives diversification benefits as high dividend yield stocks tend to outperform low yield stocks in declining markets (Fuller and Goldstein, 2011). Third, since dividend payments provide a cushion against capital losses, the strategy encourages myopic loss-averse investors (Benartzi and Thaler, 1995) to maintain a long term focus.

Consistent with the above hypothesized features, we show that the beta-yield portfolio has a lower portfolio beta, lower maximum drawdown and higher Omega ratio than either a pure low-beta or pure 2 high dividend yield portfolio, while having nearly the same Sharp ratio as its constituents. Using bootstrap simulations, we show that for an investor with a 20-year horizon, the beta-yield strategy outperforms traditional stock/bond portfolios such as the 60/40, 70/30, and 80/20 portfolios in having (a) higher cumulative returns across all percentiles of the return distribution, (b) lower shortfall risk for target returns of between 4% and 6% a year, (c) higher Omega ratios for the same range of target returns, (d) higher mean and median values for the Prospect Theory utility function, and (e) outperforms the stock/bond portfolios even when its historical arithmetic average return is reduced to that of the market portfolio.

Both low-beta and high dividend yield stocks contribute, albeit differently, to the good long-term performance of the beta-yield strategy, but it is the combination of the two investment styles that deliver impressive synergistic benefits to the long-term investor. We conclude that the beta-yield strategy is

a compelling alternative to traditional stock/bond allocations for individuals investing for their future retirement and fiduciary institutions operating under the Prudent Man Rule.

## **GROWTH OPTIMAL PORTFOLIO INSURANCE FOR LONG-TERM INVESTORS**

**PAGE 59**

*Daniel Mantilla-García*

This paper studies a class of risk-control strategies similar to the popular Constant Proportion Portfolio Insurance (CPPI) but with a time-varying multiplier process. The paper provides an explicit formula for the varying multiplier that maximizes the average growth-rate of the strategies, in the general case with a locally risky asset different from cash.

Important potential benefits are found in terms of performance and risk in using the growth-optimal portfolio insurance strategy (GOPI) over the standard CPPI with constant multiplier. Interestingly, the level of the optimal time-varying multiplier turns out to be lower than the standard constant multiplier of CPPI for common parameter values. As a consequence the outperformance of GOPI does not come with higher risk.

The paper shows that interest rate risk induces a negative relationship between the optimal multiplier and horizon, due to the higher expected return of long maturity bonds. On the other hand, mean-reversion in equity returns induces a “strategic” increase in the allocation to stocks for longer investment horizons and introduces a counter-cyclical short-term “tactical” component to the strategy that contrasts with the pure trend-following behavior of the CPPI allocation. These features of the GOPI strategy are consistent with common features of popular asset allocation professional advice, such as the horizon puzzle and the risk-sensitive bond/stock allocation ratio puzzle reported by Samuelson (1963) and Canner, Mankiw, and Weil (1997). Most former studies of the CPPI assumed a constant interest rate, neglecting the covariance between the underlying assets of the strategy. The paper also illustrates that a *higher* correlation between the safe and the risky assets implies an increase in the value of the strategy, everything else being equal.

## **EQUITY INDICES' RETURNS: CONTINGENT CLAIMS ON GDP STOCHASTIC MOVEMENTS**

**PAGE 94**

*Thomas S.Y. Ho and Sang Bin Lee*

This paper identifies the risk drivers underlying various stock indices by assuming that the stock index is a contingent claim on the GDP's macro-economic factors. Specifically, our relative valuation approach is analogous to the option-adjusted spread in bond analytics.

This paper enables the stock investors to compare one stock index with other stock indices in terms of how they are related to the GDP movements or how the stock indices are valued relatively. This paper has many applications in stock investments, such as asset allocation and hedging in the investment strategies.