

The Hierarchy of Investment Choice: Comment

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In "The Hierarchy of Investment Choice," Kritzman and Page (KP) [2003] claim that security selection is the most important and asset allocation is the least important investment decision. This is the opposite of the conclusion that Brinson, Hood, and Beebower [1986] reach in "Determinants of Portfolio Performance." Why?

KP claim to analyze what an investor could have done (*normative analysis*), while the others examine what investors actually did do (*positive analysis*). We do not think this is the real reason.

With different sets of examination parameters, it comes as no surprise that the conclusions do not match. But while KP have a valid point in that security selection has much potential for active return, this is not news, and should already be built into any investment process. It certainly does not need to be validated by a bootstrapping simulation as comprehensive as KP's.

We start with a summary of the two articles.

BRINSON, HOOD, AND BEEBOWER

Using a regression analysis of plan sponsor portfolios, Brinson, Hood, and Beebower [1986] (BHB) find that 93.6% of a portfolio's historical variance is explained by its policy. Their article became one of the most quoted in the investment community.

Exhibits 1 and 2, showing *hypothetical* monthly returns and the corresponding performance indexes of policy and portfolio, illustrate the issue of explained variance. As the movements are highly synchronized, policy's movement explains a large portion of the portfolio's movement. The synchronicity measure is R^2 ; in our example, it is 93.6% as well. A value this high is the prime reason BHB claim that asset allocation is the most important investment decision.

High synchronicity, however, does not necessarily imply a negligible *return gap* between policy and portfolio, as the gap is determined by the average return rates of policy and portfolio.¹

KRITZMAN AND PAGE

Kritzman and Page [2003] use bootstrapping to generate return samples by randomly selecting observations from the original data set. They run repeated simulations over 15 years, calculate average annualized portfolio returns, and examine their distribution. They report the dispersions in Exhibit 3.²

The return gap is five times greater for security selection than for asset allocation, and before further analysis KP [2003, p. 16] conclude:³

Contrary to perceived doctrine, dispersion around average performance arising from security selection is substantially greater than dispersion around average performance arising from all other investment choices. Moreover, asset allocation, widely considered the most important investment choice, produces the least dispersion; thus, from a normative perspective it is the least important investment choice.

ANALYSIS AND CRITIQUE

Our critique of the KP results centers on two key issues: the absence of a meaningful risk analysis, and the size of the reported return gaps. KP judge the importance of asset allocation *solely* on the basis of the dispersion of the return gaps. The wording and the positioning of the conclusion we quote allow no other conclusion. Do they claim that only *relative* return matters? The last few years have painfully taught us otherwise.

To make our point about risk, let us set a frame. Generally, an information ratio of 0.50 is considered very high for a stock-picker. Hence, assuming an information ratio of 0.50 for the 95th percentile manager and using the relationship:

$$\text{Tracking Error} = \frac{\text{Active Return}}{\text{Information Ratio}} = \frac{1.70\%}{0.50} = 3.40\%$$

EXHIBIT 1

Simulated Monthly Returns with $R^2 = 93.6\%$

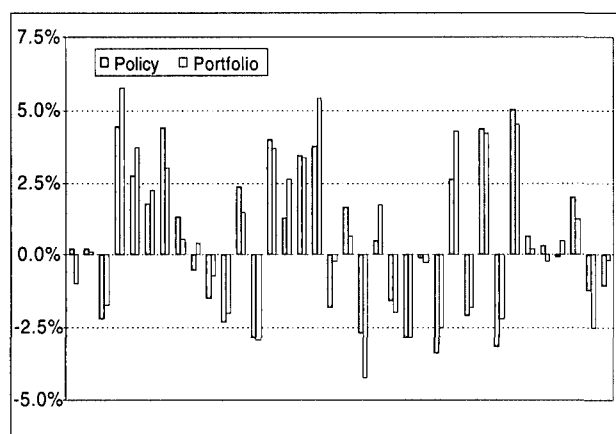


EXHIBIT 2

Indexes Corresponding to Exhibit 1

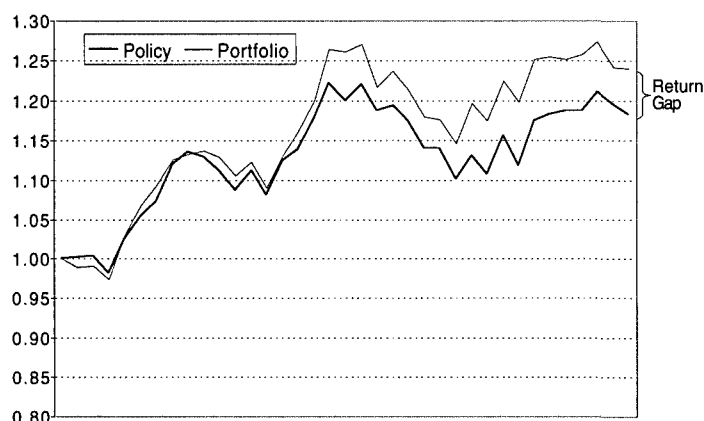


EXHIBIT 3

Kritzman-Page Results

	95th Percentile	5th Percentile
Global Asset Allocation	-0.35%	0.35%
Security Selection	-1.70%	1.70%

we conclude that the manager must run a tracking error of 3.40% for generating an active return of 1.70% through security selection. Given an average risk of 4% for global bonds, 14% for global equities, and a 0.30 correlation between them, and combined with uncorrelated tracking errors of 3.40% for global equity and 1.00% for global bonds, we get the risks as in Exhibit 4.⁴

The total risk is almost entirely independent from security selection, as almost all specific risk is diversified, and the remainder is market risk. Hence, to change the

total portfolio risk meaningfully, investors need to change the portfolio's *market* risk. This is achieved only by a change in asset allocation. As market risk is not always compensated, investors should assume it only when they feel it is compensated.

For their global asset allocation portfolio and security selection portfolio, KP get volatilities slightly above 10%, with 20 to 30 basis points more for the latter. A risk decomposition, however, would show that almost all risk is market risk.

Further, KP generate portfolios with asset mixes varying randomly around 60% stocks, 30% bonds, and 10% cash. Why would they choose such a mix, or, more pointedly, why would they anchor their portfolio at all? Since investors can go as far as 100% in stocks or cash, KP's approach is—counter to their claim—not *normative* at all.⁵

Over their examination horizon, the annualized return differential between global equities in U.S. dollars and U.S. cash was 4.22 percentage points.⁶ Even more striking, over the past three years we experienced a massive return differential between the stock and the bond market. Timely and aggressive moves between these markets would have impressively differentiated the skilled strategist from the competition.

How aggressive is the dispersion of KP's simulated asset allocation mixes? An estimate should shed some light on this. An information ratio of 0.25 is considered very high for an asset allocation strategist. Assuming again it is the information ratio of the 95th percentile strategist and using the relationship:⁷

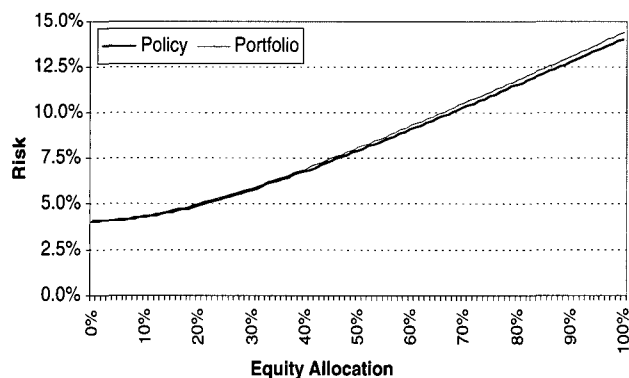
$$TE = \frac{AR}{IR} = \frac{0.35\%}{0.25} = 1.40\%$$

we conclude the tracking error must be 1.40%. For a stock-bond policy, this implies an active weight of $\pm 10.5\%$.⁸ Be this aggressive or not—we do not think it is—one cannot tightly anchor a portfolio and at the same time blame it for this very fact.

An active weight of $\pm 10.5\%$ is by no means aggressive, particularly given the increasing industry pressure to soften the traditional concept of fixed benchmarks. While Clarke and de Silva [1998], for instance, promote risk state-dependent benchmarks, Bernstein [2003] questions benchmarking completely, suggesting more opportunistic and ad hoc investing. Whether variable or no benchmarks at all, this will cause more dynamic asset class movements than we have experienced so far.

EXHIBIT 4

Risk as a Function of Equity Exposure



CONCLUSION

As far as asset allocation is concerned, the Kritzman-Page simulation is strongly driven by their own assumptions, in particular by keeping the asset allocation mix closely around 60% equity, 30% bonds, and 10% cash. Contrary to their claim, this is not normative. Hence, there are good reasons to question the reported return dispersions.

Further, their portfolio risk analysis is not compelling, and they ignore the fact that the only way to change a portfolio's market risk is a change in asset allocation. Ultimately, asset allocation is much more powerful than Kritzman and Page suggest.

ENDNOTES

¹The often heard claim that 93.6% of a portfolio's return comes from policy is not correct, as R^2 is a variability measure, while an annualized averaged return is a single number and by definition does not vary.

²These results are not available as numbers. The numbers in our Exhibit 3 are read from KP's Exhibit 3, which graphs the results.

³We define the return gap as the difference between the 5th and the 95th percentile.

⁴That is, tracking errors are correlated neither among themselves nor with global bonds or global equity. If they were correlated with global bonds or global equity, they would entail an asset allocation bet.

⁵KP claim their analysis is normative; hence, this is not about investor behavior or investor comfort. Rather, it is about investment opportunity.

⁶MSCI World Free and U.S. 30 day T-bills, 12/31/1986–12 31/2001.

⁷Obviously, top stock-pickers and top strategists do not

have the same information ratio. The reason is that stock-pickers can make many more independent bets, so their bets can be better diversified.

⁸We apply the same parameters as in Exhibit 4. The formula is:

$$\Delta = \pm \frac{TE}{\left(\sqrt{\sigma_e^2} - 2r\sigma_e\sigma_b + \sigma_b\right)^2} = \pm 10.5\%$$

where $\pm\Delta$ is the active weight.

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Editor's Note

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