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Talent pays as much, no matter the investment choice.

Abstract

Kritzman and Page (2003) determine the relative importance of investment activities through a bootstrapping simulation. They conclude that asset allocation should be viewed as the least important investment activity, and security selection, the most important investment choice. Their methodology design does not explicitly control for the active risk generated by each activity. It appears that when active risk is estimated, the risk level is much higher for security selection than for asset allocation. When similar active risk levels are used for security selection as well as asset allocation or sector allocation, each investment choice seems equally important. The bottom line is that a talented manager will add as much value for a given level of active risk irrespective of whether he is involved in a stock selection, a sector allocation or an asset allocation activity.

Keywords: Security selection, Active risk

JEL Classification : G11

La hiérarchie des différentes activités d'investissement : Mythe ou réalité?

Résumé

Kritzman et Page (2003) ont examiné l'importance relative des différentes activités du processus d'investissement en utilisant une simulation par rééchantillonnage. Ils ont montré que l'activité de répartition d'actifs doit être considérée comme la moins importante, et la sélection de titres comme la plus importante activité du processus d'investissement. Leur approche méthodologique n'a pas pris explicitement en compte le risque actif issu à chaque activité. Nous montrons que le risque actif associé à l'activité de sélection de titres est beaucoup plus important que celui associé à l'allocation d'actifs. En prenant en compte le niveau de risque actif rattaché aux décisions de sélection de titres, de répartition sectorielle et d'allocation d'actifs, nous montrons que ces trois activités du processus d'investissement sont aussi importantes les unes que les autres. Par conséquent, un gestionnaire de portefeuille talentueux ajoutera de la valeur à son portefeuille peu importe qu'il privilégie l'activité de sélection de titres, de répartition sectorielle ou d'allocation d'actifs.

The debate on the relative importance of asset allocation, sector allocation and security selection recently took a new turn when Kritzman and Page [2003, p.22] (KP) unambiguously concluded that "[…] asset allocation is the least important investment activity […] and security selection is the most important investment choice." KP use a normative approach based on a bootstrapping simulation, which allows the potential contribution of each investment decision to the portfolio performance to be disentangled from the impact of actual investors' choices on their portfolio performance. They argue that this approach is more appropriate than the positive approach followed by studies initiated by Brinson, Hood and Beebower [1986], in investigating which investment activity is more important. Indeed, KP claim that the methodology followed by Brinson, Hood and Beebower – time-series regressions to explain the relative importance of the variability of large pension fund returns over time – allows them to reach conclusions on which investment activities investors choose to emphasize, as opposed to what they *should* emphasize.

In the KP normative framework, the consequences of each of these decisions – and thus the importance of the investment activities – are evaluated with respect to the extent to which they cause dispersion on future portfolio value. In our view, and as emphasized by Darnell [2003, p.3], "What's wrong with all of this is that the way to measure the relative value of investment decisions is to make a [an active] *risk-adjusted* comparison, not to merely compare the relative magnitude of returns." A recent comment by Staub (2004) also echoes that point, stating that the KP paper suffers from "the absence of a meaningful risk analysis" as "they judge the importance of asset allocation *solely* on the basis of the dispersion of return gaps". As underscored by Siegel [2003] in his seminal work on benchmarks and investment management, achieving active return while avoiding active risk is the only goal active managers should pursue.[1] Active portfolio management is an attempt by the manager to outperform, on a risk-adjusted basis, a passive portfolio whose average characteristics match the risk-return objectives of the investor (client). To ensure that the main characteristics of the product (benchmark) sold to the client are essentially maintained, an active risk constraint is generally imposed on managers (Jorion [2003]). Accounting for the assertion by Alford, Jones and Winkelmann [2003, p.49] that

"it is now commonplace to categorize active managers by the level of active risk," we add this real world aspect of investing to the normative framework set up by KP in order to examine the relative contribution of asset allocation, sector allocation and security selection decisions to portfolio performance.

We use the same bootstrapping approach as KP, except that we solve for the issue raised out by Darnell (2003) and Staub (2004) by relying on the information ratio of the simulated portfolios to evaluate the relative importance of each investment decision. We indeed consider that KP's methodology design induces a flaw, for they generate random portfolios picking the same number of observations (100 with replacement) whatever the size of the universe considered (asset classes, countries, industries or securities). Consequently, the active risk from the portfolios is implicitly higher for an activity with a larger and diversified universe (the global MSCI universe in this case, with 1,512 stocks). Therefore, their conclusion that security selection is a relatively more important investment choice than asset allocation is questionable since the active risk concern is ignored. It is indeed expected that the more some managers can move away from their benchmarks, the more dispersion we will observe in their excess returns.[2] The importance of an active management activity must be evaluated on the basis of the information ratio (excess return per unit of active risk) rather than only the excess return as KP did, in line with Darnell's assertion [2003, p.3] that "quality is not a matter of size."

This paper focuses on the three main specific choices within a country, namely asset allocation, sector allocation, and security selection decisions. We use a methodology design identical to KP's (uniform rebalancing rules across the three specific choices), and we basically obtain the same results: security selection dominates asset allocation in terms of dispersion of excess return. We then measure active risk for each of the randomly generated portfolios. As expected, the active risk level is much higher for security selection than for asset allocation, i.e., the security selection's greatest potential to generate dispersion in excess return does come at the cost of greater active risk. We clearly provide evidence that, when the importance of the three investment decisions is evaluated on the basis of the dispersion of information ratios instead of the dispersion of

excess returns, security selection, sector allocation and asset allocation are equally important investment choices. The remainder of the paper is organized as follows: the next section describes the data and presents the methodology used, while the section that follows presents empirical results and contrasts them with those reported by KP.

Data and Methodology

This study focuses on country-specific activities within the same five countries considered by KP: Australia, Germany, Japan, the United Kingdom, and the United States. Unlike KP, we do not examine the country allocation decision within a World benchmark. The study covers the period going from January 1988 to December 2002. For each country, three asset classes are selected: cash, bonds and stocks. We compute the monthly total returns from the JP Morgan cash index and from the JP Morgan government bond index series. Individual stock returns and the market values of the constituents of each country's MSCI equity index are selected at the end of 2002. Based on the MSCI classification, we construct value-weighted sector indices for the 24 MSCI sector categories within each country.[3] Following the same approach as do KP, we recompose the stock market index and the sector indices for each country in order to ensure internal consistency.[4]

We use the same bootstrap methodology as KP. As the methodology is extensively discussed in their paper, we only report its main features here. For each country, we use a benchmark comprising a country-balanced portfolio with the following composition: stocks, 60%; bonds, 30% and cash, 10%. For the asset allocation analysis, we randomly choose 100 asset classes with replacement (Stocks, Bonds or Cash), with a resulting 60% chance of selecting stocks, a 30% chance of selecting bonds, and a 10% chance of selecting cash. We use the same procedure for the sector allocation and security selection analyses, with the exception that sectors or securities are randomly selected to form the 60% stock component of the balanced portfolio. The bootstrap procedure for the sector allocation and stock selection decisions leads respectively to 1) a random selection of 100 sector indices with replacement from a sample of the 24 MSCI sectors, and 2) a random selection of 100 stocks with replacement from each country MSCI universe to compose a

stock portfolio (see Exhibit 1 for illustration). It is important to emphasize that contrary to Staub (2004) who suggests a different rebalancing rule for different decisions (we agree with KP's response on this matter – see KP, 2004), we use the same methodological approach as K.P. by applying uniform rebalancing rules for asset allocation, sector allocation and security selection decisions.

For each iteration (one country, one year and one investment activity), we not only calculate the sample portfolio's excess return (ER) as do KP, but we also calculate the active risk (AR) and the information ratio (IR), which is the ratio of the excess return per unit of active risk. We repeat the process 10,000 times for each of the 15 years considered, and analyse the dispersion of the average ER, AR and IR. The dispersion of these three measures is then examined and compared across the other investment choices. Within the KP framework, the more significant the ER dispersion, the more significant the activity: a higher dispersion is interpreted as potentially rewarding for talented managers, and unfortunately, potentially dangerous for untalented managers.

EXHIBIT 1
Methodology

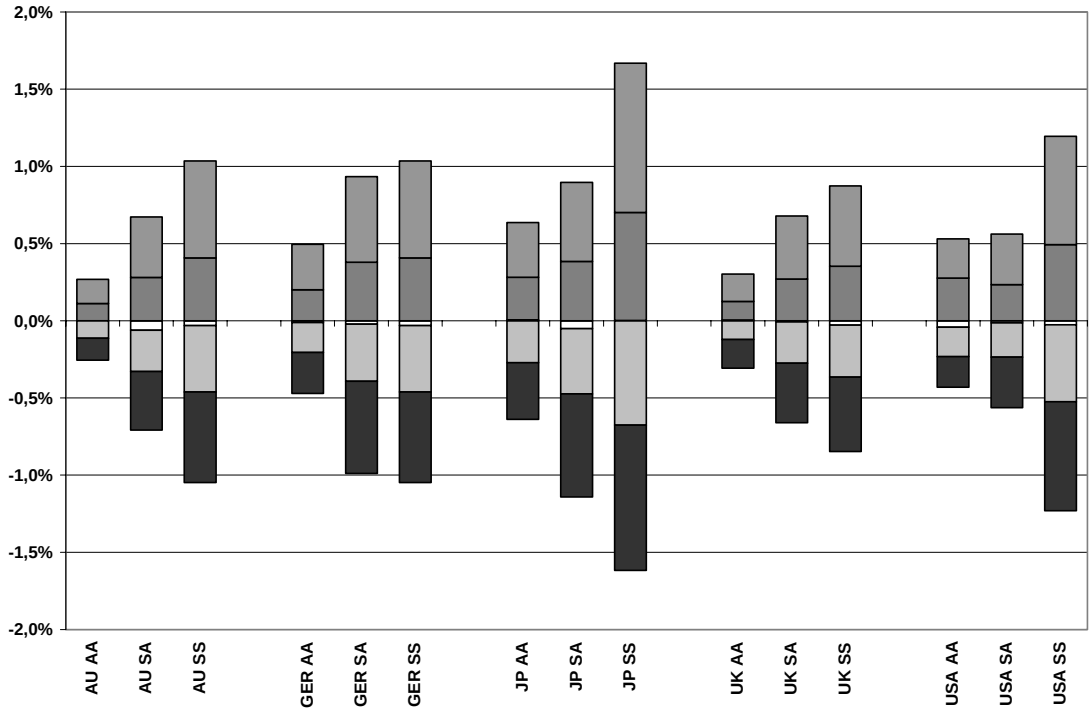
Benchmark	Asset Allocation (AA)	Sector Allocation (SA)	Security Selection (SS)
60% Stocks	Around 60% (random) Stocks	60% Stocks (Random Sector Allocation)	60% Stocks (Random Security Selection)
30% Bonds	Around 30% (random) Bonds	30% Bonds	30% Bonds
10% Cash	Around 10% (random) Cash	10% Cash	10% Cash

Results

We analyse the distribution of the average ER, AR, and IR that result from the three main investment decisions in order to appreciate the relative importance of each one. Exhibit 2 shows the dispersion of the average ER for asset allocation, sector allocation and security selection decisions over the 1988-2002 period in the U.S., Japan, Germany, Australia and U.K. markets. The first step of our methodology confirms the results reported by KP; the distributions are very similar to those reported by KP for each of the five countries considered. The ER asset class dispersion is always lower than the dispersion observed for sectors, which is far less than that observed for security selection. These results led KP to conclude that stock picking is the most valuable skill to have, and asset allocation, the least valuable.

EXHIBIT 2
Dispersion of Average Excess Return

5^{th}, 25^{th}, 75^{th} and 95^{th} percentile average excess return associated with asset allocation (AA), sector allocation (SA), and security selection (SS) decisions over the 1998-2002 period in Australia (AU), Germany (GER), Japan (JP), the United Kingdom (UK), and the United States (US).



KP provide further evidence by showing that the simulated security selection portfolios do not present a greater absolute risk than the other simulated portfolios. While our observations are similar, we do not think we can draw conclusions respecting investment hierarchy up to that extent. We would certainly agree with their conclusion in an absolute return context, but we think this context does not hold for the vast majority of managers. Rather, the usual method for measuring the value of active managers' performance is to compare their returns with that of a comparable passive alternative, while making an active risk adjustment on his value added figure (information ratio). That being said, there's no doubt in our mind that absolute risk is of a major concern, but we believe that it is more related to the strategic asset allocation decision, i.e. the 60-30-10 benchmark. Strategic asset allocation isn't the issue behind KP's paper, it is all about active management and active risk must be accounted for.

We therefore believe that KP missed the appropriate risk measure by calculating the absolute risk. In fact, Exhibit 3 confirms our hypothesis that randomly picking 100 stock returns out of a universe of many stocks generates a much higher active risk than randomly picking 100 sector returns out of 24 possibilities, and even more than when picking 100 asset class returns out of 3 possibilities.

To ensure that investment choices are evaluated within an active management framework, we thus relied on the information ratio (IR = ER/AR) of each sample portfolio. The dispersion of the information ratio for a given investment activity and country as shown in Exhibit 4 gives us a better perspective of the investment choice hierarchy with respect to active risk. In this context, it is much more difficult to conclude that security selection is more important than asset allocation as an investment choice. We could rather conclude that a security selection decision does not have the greatest potential to generate dispersion in information ratio. The three main specific choices prove rather to be equally important in term of quality of performance (information ratio) as opposed to quantity (excess return only).

EXHIBIT 3
Dispersion of Average Active Risk

5^{th}, 25^{th}, 75^{th} and 95^{th} percentile active risk associated with asset allocation (AA), sector allocation (SA) and security selection (SS) decisions over the 1998-2002 period in Australia (AU), Germany (GER), Japan (JP), the United Kingdom (UK), and the United States (US).

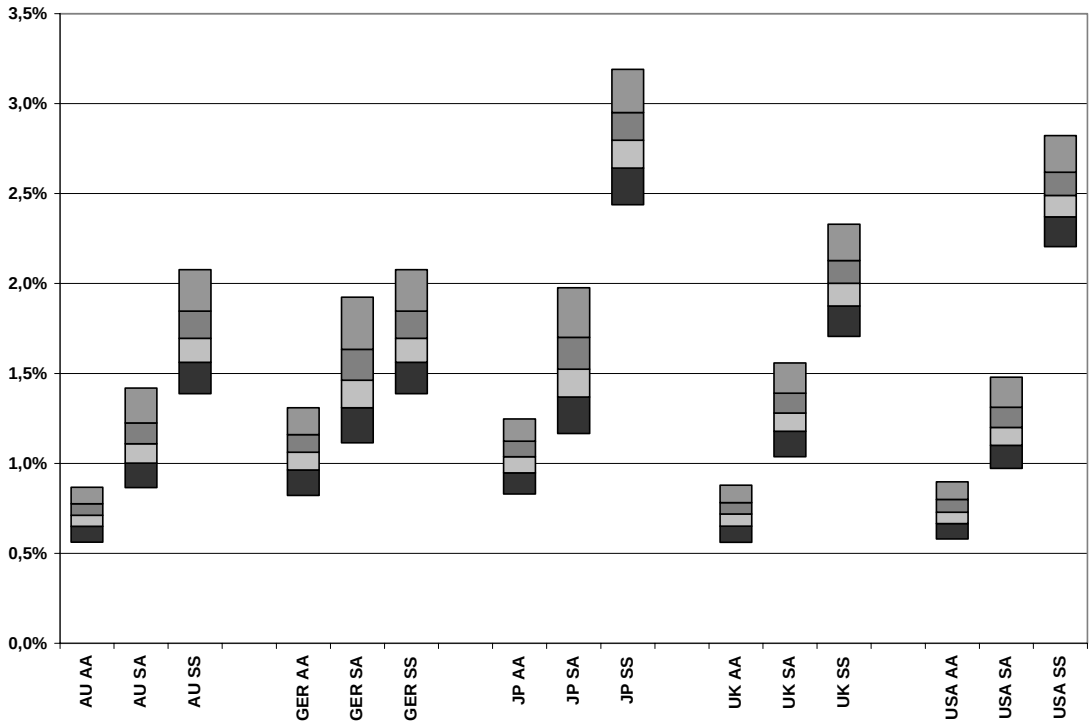
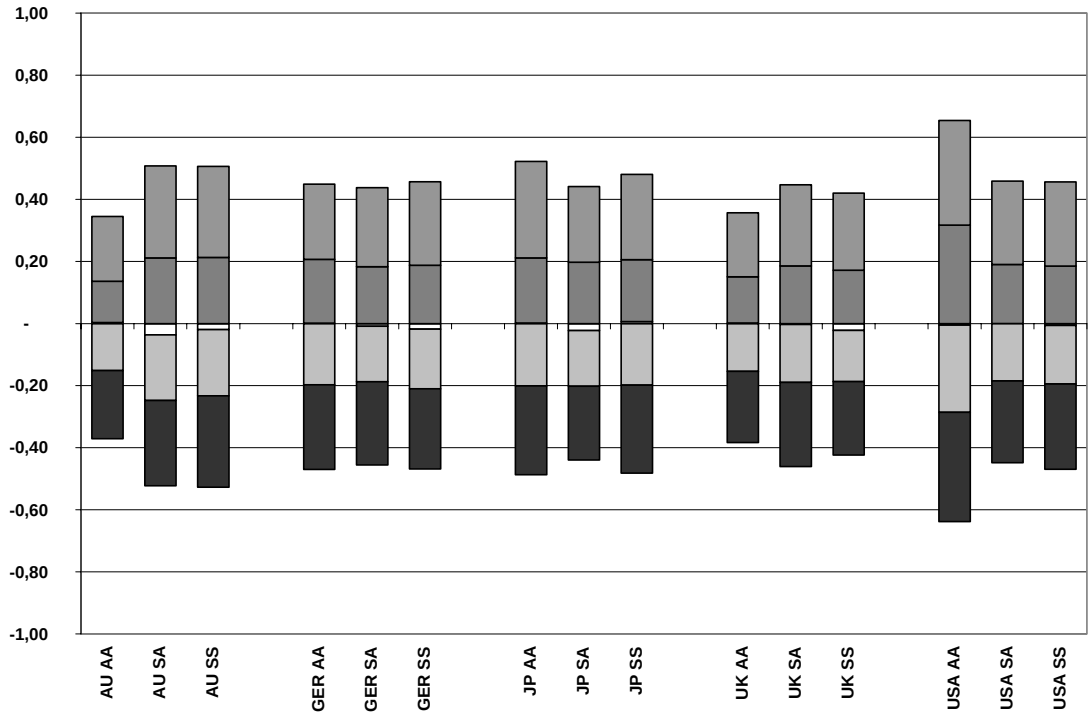


EXHIBIT 4
Dispersion of Average Information Ratio

5^{th}, 25^{th}, 75^{th} and 95^{th} percentile average information ratio associated with asset allocation (AA), sector allocation (SA) and security selection (SS) decisions over the 1998-2002 period in Australia (AU), Germany (GER), Japan (JP), the United Kingdom (UK), and the United States (US).



Conclusion

We use the same methodology design as Kritzman and Page [2003], except that we measure active risk in order to determine the relative importance of investment choices in term of information ratio rather than excess return only. We focus on the asset allocation, sector allocation and security selection decisions within the same five countries retained by Kritzman and Page [2003]: Australia, Germany, Japan, the United Kingdom and the United States.

Provided no assumptions respecting transaction costs and talent are made, the following main conclusion may be drawn from our analysis: asset allocation, sector allocation and

security selection are equally important investment activities for they have an equal potential to generate cross-sectional dispersion of information ratio among sample portfolios. While we do not examine the country allocation decision in a global context – as did KP – we expect our conclusions to be similar. The bottom line is that a talented manager will add as much value for a given level of active risk irrespective of whether he is involved in a stock selection, a sector allocation or an asset allocation activity.

However, as underlined by Darnell [2003], the conclusion would be probably slightly different if transaction costs were to be considered. The implementation costs of the different investment activities are clearly not the same, and transaction costs can shrink the excess returns considerably. Asset allocation is feasible at almost no cost, and would probably be the investment activity least affected by implementation costs. Certain difficulties could hamper the profitability of sector allocation outside the U.S. since no future contracts exist on sector indices, except in the U.S. Even if these instruments were available, there would be no guarantee of a sufficient trading volume for institutional investors to trade without significantly undermining their potential performance net of transaction costs.[5] Security selection would thus certainly be the most expensive activity to undertake. While transaction costs should not really play an important role in the dispersion of the information ratio, they would certainly lower their general level, making this expensive activity much less attractive a priori.

Finally, our methodology design does not consider any assumptions respecting talent. The hundred-dollar question is whether or not stock pickers tend to exhibit more skills than "sector allocators" or "asset allocators." If and only if this question can be answered in the affirmative should risk managers consider adhering to the hierarchy of investment choice proposed by Kritzman and Page [2003]. In this context, it would only be because security selection is considered easier to realize or would generally be better realizable by the entire industry than other activities, but frankly, we are not too sure about that. On this subject, we would rather agree with Darnell and Ferguson [2000] who underscore that an investment activity with a large breadth (many small decisions, as is the case with stock selection) could translate into more 'noise' associated to each decision, and

consequently, to a lower expected information coefficient (skill).[6] As a final point, when accounting for active risk, this study does not allow us to establish a hierarchy in investment choice. Transaction costs and talent considerations could probably alter this conclusion and induce a hierarchy, but not necessarily the one put forward by Kritzman and Page [2003].

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ENDNOTES

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[1] Throughout the paper, the term *active risk* refers to the square root of the non-central second moment of the deviations of a portfolio return relative to its benchmark return:

$$\text{Active Risk}_{\text{Portfolio}} = \sqrt{\frac{1}{(N_{\text{periods}} - 1)} \sum_{n=1}^{N_{\text{periods}}} (R_{\text{Portfolio, n}} - R_{\text{Benchmark, n}})^2}$$

This measure can be interpreted as standard deviation, but since it is a non-central measure, not only random positive and negative deviations affect it, but also a possible constant over- or underperformance relative to the benchmark. Alternative measures are available: we could have measured active risk on a prospective basis, that is, at the beginning of each period, as the standard deviation of the difference between the portfolio and the benchmark return series over a certain period before, while using the weights at the beginning of the period. Here, we present ex post active risk results. Results do not differ significantly, and they are available upon request.

[2] The term *excess return* is in reference to the difference between a portfolio's return and its benchmark return. This is slightly different from KP's since they measure the excess return against the average of the sample portfolios, while we measure it against the benchmark. Note that since the sample portfolios are randomly generated, the average of the sample portfolios tends to correspond to the benchmark. The difference is thus negligible.

[3] The term *sector* is used throughout the paper to refer to MSCI industries of which there were 24 at the end of 2002.

[4] We ensure that the weighted sum of the returns of the constituents of any component (sector index, country index) equals the return of the component.

[5] Nonetheless, a portfolio manager may use swaps in which sector indices are reconstituted. These vehicles expose the manager to non-negligible transaction costs (estimated at between 1% and 2% per year), along with potential costs related to liquidity problems. Managers must find a compromise between costs related to the undesired market impact on the price of the stocks that have the lowest weight in the index and the costs of imperfect replication of the index.

[6] Darnell and Ferguson [2000] referred to Grinold and Kahn's "Fundamental Law of active management" which suggests that the manager's prospective information ratio (PIR) is a function of his skill (information coefficient, IC) and the extent to which the skill is applied (Breadth): $\text{PIR} = \text{IC} * \sqrt{\text{Breadth}}$.