How Active are Active Managers?

This paper seeks to provide a balanced perspective on the role that benchmarks play in the setting of investment policy, the degree to which asset managers deviate from these benchmarks in pursuit of adding value and the degree to which value is added.

The findings of this occasional paper are also helpful in understanding the role that a quantitative manager fulfils and the degree to which quantitative and active judgemental asset managers should be viewed as having complimentary skills in the establishment of optimal fund structures and prudent investment policy

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February 2002

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The pension fund industry has, for many years focused on selecting asset managers on the basis of the manager(s) that have outperformed over periods ranging from one to three years. In doing so, sight has been lost of the value added through this selection process.

In order for the industry to be able to move forward, particularly in light of the proposed changes to Regulation 28 of the Pension Funds Act, a framework of understanding is required. This paper takes the first step in that direction.

The Debate

Do active managers add any value and if so why should anyone consider using a passive approach in considering how best to manage a pension fund?

The answer depends to an extent on who has asked the question and what is to be gained from the answer. Many participants in the retirement fund industry have set about trying to prove that an active approach is better than a more passive approach and vice versa. The view is often expressed, for example, that over 90% of any pension fund's return is based on the asset allocation decision. The logical, yet erroneous conclusion drawn, is that active managers are not able to add any meaningful return through stock selection and, as such, a substantial portion of all the time and energy spent in managing a fund should be focussed on the asset allocation decision. The argument is further advanced by suggesting that a significant portion of any portfolio should be passively managed against a benchmark that focuses primarily on ensuring the correct allocation to each asset class. These are clearly arguments developed to promote a specific asset management style.

The Role of Trustees

The primary role that any trustee has to fulfil is that of ensuring that the funds entrusted to them are managed in accordance with the investment objectives and risk constraints of the members. In addressing this issue a range of alternatives have been offered by the asset management industry that, in general, seek to guide trustees in the appropriate choice of strategic policy. Funds are typically categorised as low, medium or high risk with underlying benchmarks for each risk category. Asset managers are mandated to manage the assets of the fund against the stated benchmark and are required to add incremental levels of return. A low risk fund would have a much lower tolerance of negative returns relative to the benchmark portfolio than would a high risk fund. Looked at from a different perspective, one would generally expect the return profile for a low risk fund to be less volatile than a typical pension fund or high risk fund over time.

In order to gain some insight into how pension funds are managed in relation to their respective mandates, and the degree to which active returns are generated, three key questions need to be raised, namely:

1. *How much of the variability of returns across time is explained by policy? In other words, how much of the ups and downs of a typical pension fund's total return (TR_i) is explained by the benchmark return (BR_i)?*
2. *When trustees establish a policy or benchmark for their fund, how similar is this policy to those set by other trustees?*
3. *In assigning a mandate to an asset manager, how are asset managers positioning the actual fund relative to the benchmark and how much value is being added by the asset manager?*

Much of the controversy relating to the issue of how much value asset managers add to any given benchmark is as a direct result of confusion between questions 1 and 3.

Framework

The data used in the study consisted of the monthly returns for each of the country's top 10 pension fund managers as reported in the Alexander Forbes Survey of Large Managers (Global Balanced Mandates) dating back to October 1995. Although no data is supplied in the surveys as to the number of funds represented, it is acknowledged that all unrestricted balanced mandates are entered by each asset manager as part of their survey submission. Dispersion of returns around the mean are reported which enabled us to consider whether this dispersion was material in terms of differences in underlying mandate. This was not the case and therefore the basis of the study incorporates all pension funds managed by the top 10 managers in conformity with a balanced mandate— i.e. a typical pension fund.

The first step in analysing the data was to decompose the total return, TR, of each managers return into two components, policy return and active return, as follows:

$$TR_{i,t} = (1 + BR_{i,t})(1 + AR_{it}) - 1$$

Where

$TR_{i,t}$ = total return of fund i for period t
$BR_{i,t}$ = benchmark return of fund i for period t
$AR_{i,t}$ = active return of fund i for period t

Benchmark return is that part of the total return that results from the asset allocation policy set by the trustees. In simple terms, this is the benchmark set by the trustees, and where no benchmark is set, the implied benchmark is that of an industry median return.

Active returns constitute the difference between what the fund has actually achieved and the benchmark return. These returns depend on the decisions taken by the asset manager in terms of actively over or under-weighting various asset classes / sectors, stock selection decision and the magnitude and timing of those decisions.

In our time series analysis (questions 1 & 3) we used period-by-period returns. In the cross-sectional analysis, we used the compound annual rates of return over the period. In all instances we used the benchmark returns as supplied by the asset managers on the understanding that these benchmark returns reflected the aggregate returns of the benchmarks against which funds were being managed.

Questions and Answers

Question 1 was the subject of a comprehensive study by Gary Brinson et al., in 1986 with a follow up in 1991. Brinson studied quarterly returns for 91 large US Pension Funds from 1974-83 and in the second study from 1978—87 for 82 funds. The primary focus of both studies was to determine how much of the variability of each pension fund's actual return was explained by that fund's policy or benchmark return. Both studies did this by regressing each funds total return ($TR_{i,t}$) against its policy return ($BR_{i,t}$). Brinson then examined the average, median and distribution of these results. In the first study Brinson et al. concluded that the average R^2 was 93.6% and in the second study 91.5%. Based on these results the authors concluded that more than 90% *of the variability* of the average pension fund's return over a period of time is explained by the benchmark or policy set for that fund. This measure is distinctly different from the question as to how much return is derived from the asset allocation decision. Unfortunately this point is not well understood by the market as one often hears the quote "over 90% of a funds return is determined by the asset allocation decision", which is clearly incorrect.

In reviewing the analysis of the domestic pension fund industry we concluded that the R^2 for the average domestic pension fund that forms part of the sample set is 97.4% (figure 1). A comparison between this analysis and the international perspective is set out in table 1.

These results confirm, in aggregate, the findings of previous studies that approximately 90% plus of the variability of a funds return across time is explained by the variability of the benchmark or policy return. Yet this conclusion is only partially useful since it does not show the range of outcomes of the study. These are reflected in table 2.

As can be seen from table 2, those managers in the top 5th percentile only had 65% of their variability of returns explained by the variability of the benchmark whereas funds in the 25th to 95th percentile were in a much tighter range.

The analysis, therefore, suggests that there are selected managers that deviate quite substantially from both fund benchmarks and industry norms in pursuit of generating active returns. The greater part of the industry, however, does not. In fact the study would indicate that the domestic pension fund industry clusters extremely closely, resulting in a very high proportion of the variability of actual returns being attributable to benchmark returns. Part of the explanation for the very high R^2's is also partly due to the fact that all pension funds are broadly invested in the same markets within a very narrow range of exposures. Underlying movements in the equity, bond, and international markets therefore have a material impact on all market participants.

Question 2 looks to establish how much the variation in returns among funds is explained by differences in policy. By way of example, if all funds in the industry followed that same investment policy and each fund was managed exactly in accordance with that benchmark portfolio then all funds would be exactly the same. The R- squared would accordingly be 1.

Table 1: Comparison of Time-Series Regression studies

Study	R Squared
Brinson 1986	93.6%
Brinson 1991	91.5%
Ibbotson et al. 2000	90.7%
SA Pension Funds*	97.4%

* Global Balanced

Table 2: Range of Time-Series Regression values

Percentile	Ibbotson et al.	SA Pension Funds
5	66.2%	65.3%
25	94.1%	96.2%
50	90.7%	97.4%
75	94.7%	98.5%
95	97.2%	98.9%

Our analysis took the form of a cross-sectional regression of compound 5-year returns between each fund's total return, TR_i, and the corresponding 5-year compound return for each fund's benchmark return, BR_i. The R^2 of this regression showed that 43.8% (figure 2) of the return differences was explained by the policy decision. The Ibbotson study in the US generated an R^2 of 35%. In our study we noted that the cross-sectional R^2 depended on both the difference in investment policy and the degree to which funds engaged in active management strategies.

To establish the degree to which active management strategies affected the cross-sectional R^2 we computed the impact of different levels of active management on the R^2. The results of this study are reflected in figure 3 which shows the R^2 that results from regressing the modified compound annual returns on compound annual policy returns for various levels of active management

Figure 1: Time-Series regression of monthly Fund Returns vs Benchmark Returns: Domestic Pension Fund Average 1995 to 2001

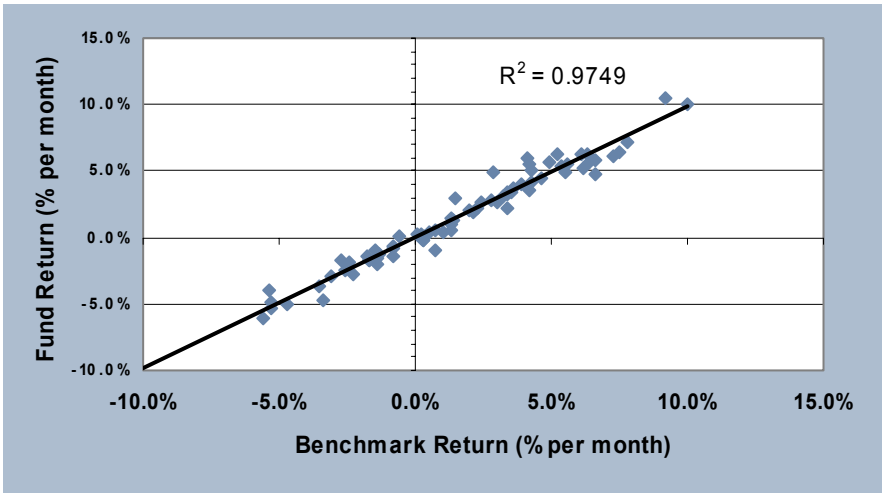
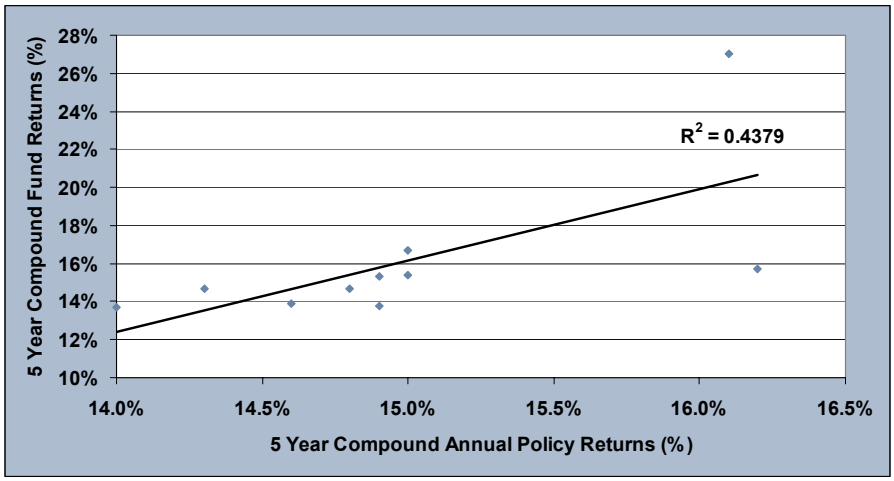


Figure 2: Fund vs Policy (Benchmark) Returns: 5 Year Annual Compound Returns to Dec 2001



Assuming that each fund manager were to conform to the benchmark portfolio, the R^2 would be 1. In other words, whilst the benchmarks would differ there would be no difference in the implementation of each benchmark portfolio. As active managers position the portfolio's away from the benchmark, the cross sectional R^2 decreases to the average of 0.43. At this point only 43% of the actual returns achieved are explained by similarities in investment policy or benchmark returns.

Question 3 looks to assess the proportion of each fund's total return that is explained by that fund's benchmark return. The calculation is simply the ratio of BR_i / TR_i. This ratio amounts to a measure of the degree to which value is added where $TR_i > BR_i$ and conversely where value is destroyed through $BR_i > TR_i$. Looked at from a different perspective, any fund that performs exactly in line with its benchmark return would have a ratio of 1. Any fund that generates returns in excess of the benchmark would have a ratio of < 1. This difference is the result of a combination of the asset allocation decision, the sector and stock selection decision and market timing. The only way to break down the source of each *alpha* component would be to perform an attribution analysis, which data is unavailable.

The data in table 3 sets out the results of our analysis and compares this with the previous international studies mentioned. As can be seen from both the Brinson & Ibbotson studies, the benchmark portfolio comprised a significant proportion of overall fund return. For the domestic pension fund industry the benchmark portfolio explained 94% of total fund returns which translates into an average level of active return in excess of the benchmark of 2% over the 3 year period. The median level of active return was 0.7% per annum before the deduction of asset management fees. Taking fees into account the level of median return in excess of benchmark would approach 0.

Figure 3: Degree of Active Management vs Cross Sectional R^2: 5 Year Annual Compound Returns to Dec 2001

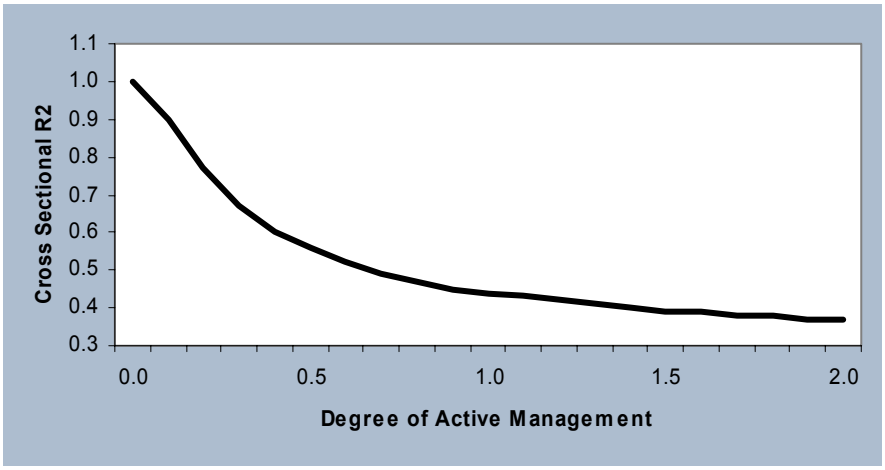


Table 3: Average Percentage of Total Return explained by Benchmark Return

	Average
Brinson 1986	112%
Brinson 1991	101%
Ibbotson et al. 2000	99%
Domestic Pension Funds 2001	94%

Clearly, as with the answer to question 1, all funds are not managed equally and not all managers are equal. Table 4 clearly sets out the difference between those funds that follow an active stance and those that tilt around a benchmark. In general just under half of the funds within the domestic pension fund industry are managed so closely to their respective benchmarks that they are indistinguishable from the benchmark. Net of costs these funds and the fund managers who manage them tend to produce a level of investment return that is less than the benchmark return. Funds, under this scenario, would be better off by simply investing in the benchmark.

Table 4: Average Range of Total Return explained by Benchmark Return

Percentile	Ibbotson et al.	Domestic industry
5	86%	69%
25	96%	86%
50	99%	97%
75	102%	105%
95	113%	114%

Assuming then that selected asset managers are able to add active returns, the final question that needed to be answered is that of quantifying the level of active returns and the consistency with which they are generated.

In order to address this we looked at the position of each manager over each of the 6 calendar years since 1996 and compared this to each managers degree of active management. The results were consistent with the analysis to date and are presented in table 5.

Table 5: Active Management vs Consistency of Active Returns

	% of TR explained by fund policy	Average Position in Survey
Manager A	0.60	2.5
Manager B	0.97	3.2
Manager C	0.90	5.0
Manager D	1.08	5.2
Manager E	1.03	5.7
Manager F	1.01	6.2
Manager G	0.97	6.5
Manager H	0.97	6.7
Manager I	1.05	6.7
Manager J	1.02	7.5

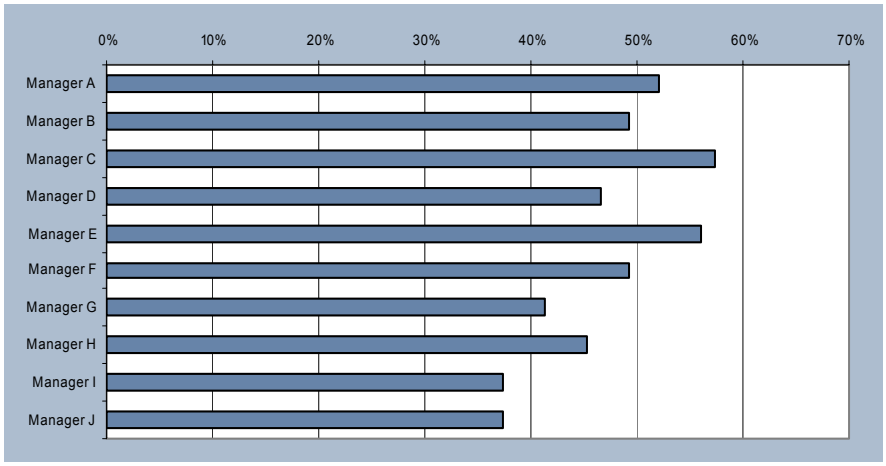
Manager A is very active with only 60% of the total returns generated (TR_i) attributable to benchmark returns (BR_i) . The interesting point in this regard is that manager A has also achieved a very high level of consistency in survey positioning. Manager B, whilst not nearly as active has succeeded in achieving a consistent ranking relative to other managers in the sample group. Manager C has been more active than B but has not achieved results consistently as evidence from the average ranking of each of the 5 yearly periods of 5.2

Most other managers have either performed in line with what the benchmarks would have generated or have returned less value to their clients than the benchmark fund would have with a significant bias towards periods of poor relative performance.

The results obtained by Ibbotson et al. and as pointed out in that particular study are consistent with the observation made by Sharpe (1991). Sharpe observed that because the aggregation of all investors is the market, the average performance before costs of all investors must equal the market.

This observation does not for a moment suggest that active management can not add value. What is does suggest, and very strongly so, is that active returns through stock selection are much more difficult to achieve than is generally accepted. In dimentionalising this aspect of active returns we lastly looked at the likelihood of fund managers being able to outperform the median return. The results are presented figure 4.

Figure 4: Probability of Fund Manager's A—J Outperforming the Industry Median Fund



Out of the 10 managers surveyed only 3 demonstrated the ability to outperform the median return on a consistent monthly basis.

What should the industry focus on going forward?

It is our view that in order for a pension fund to address the proposed changes to Reg 28 as well as serve the interests of members some changes need to be considered in light of the way pension funds are currently managed. These changes would seek to combine the disciplines of quantitative and active management in order to create a defined and disciplined framework within which consultants and trustees can make an informed choice.

The proposed framework is as follows:

- establish an appropriate fund structure focussing on both risk and return parameters within the framework of each clients specific needs (i.e the policy or benchmark portfolio)
- dependent on the type of benchmark portfolio formulated define the most appropriate combination of fund management styles.
- Use active managers to add value in terms of their stated areas of expertise and allow them to take more defined bets within agreed tracking error limits.
- Use quantitative asset managers to develop both the strategic and tactical asset allocation framework for each fund focussing on the appropriate benchmark components. Consider using quantitative managers to manage enhanced core funds at a significantly lower cost to the fund.

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