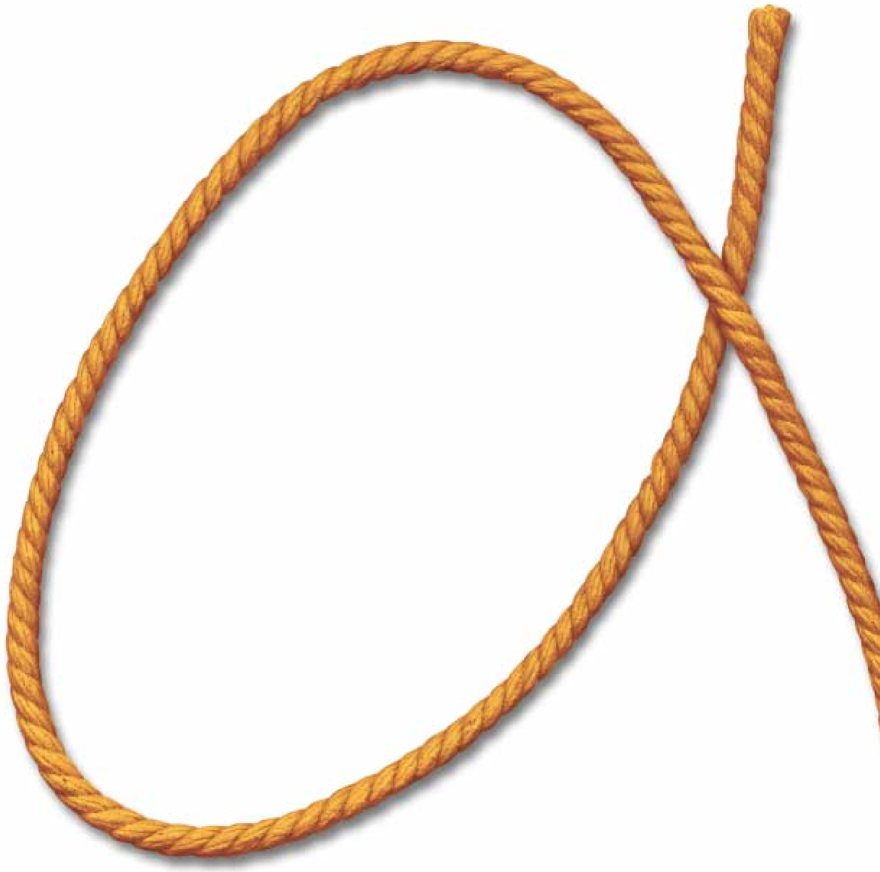
think tank



January 2009

Contents

RisCura

risk and investment consulting

Laying the indexation debate to rest.

Claire Rentzke BBusSci (Hons)
Head of Manager Research

Claire joined RisCura in 2004. She is responsible for researching and making recommendations on South African investment managers for our institutional fund clients.

The active versus passive investment management debate is an ongoing one for trustees making investment decisions for their funds. It was raised earlier in 2008 by Rob Rusconi in his paper "Whose Money is it Anyway?" where he argued strongly for a more active consideration of the long term benefits of index funds. It's also a particularly relevant debate right now, given that current market conditions have seen South African equity index funds lose their recent performance advantage.

This article explains both approaches, their pros and cons, and considers whether it's worth finally laying the "either/or" debate to rest.

A quick look

Passive funds generally track a market index while active funds invest in a balance of stocks that aim to outperform an index. Passive funds are generally cheaper than active funds as they require less hands-on management. Marketers of this approach put forward that lower costs can make a huge difference to outperformance over time. Let's discuss the issue in more depth.

Sources of return

Expected investment returns can be separated into 2 parts:

- **A function of the returns of the market (or the investment universe)**

This is usually referred to as Beta (symbolised β). The extent to which a portfolio of assets will move with the market is its beta or correlation to the market. A completely, positively correlated portfolio will have a beta of 1 and will move one for one with the market

- **An element that can be attributed to investment skill**

The portion of return that can't be explained by the return generated by the market is called Alpha (symbolised $\propto$). Alpha is an expression of the skill that an investment manager can add, as it is independent of the market.

When it comes to the management of investments, theoretically a continuum exists of sources of return that ranges from the point where returns are attributable to beta only (where alpha is zero) and the point where returns are attributable to alpha only (where beta is zero). **See diagram at the top of Pg2.*

Each approach at its extremes has advantages and disadvantages. A Fund making a decision on which approach to use (or to combine the two) in the management of their assets should be aware of both the advantages and disadvantages of each approach, and the possible implications for the Fund's investment strategy.

1. Passive management

What is passive management?

The theory that underlies passive investment management is the Efficient Market Hypothesis (EMH).

The EMH states that when markets are efficient, stock prices adjust so quickly to

THE PASSIVE/ACTIVE EXTREMES

Passive management only

Returns attributable to beta

Aim: To simply track the index that is relevant for that particular portion of the investment and so generate returns through beta. For example, in an equity fund, the asset manager will follow the SWIX or the ALSI.

Strategy: The manager invests in shares proportional to the index and achieves returns on the portfolio similar to that of the index.

Active management only

Returns attributable to alpha

Aim: To identify stocks that will perform better than the index. Returns are as a result of alpha alone.

Strategy: Managers will invest either only in those shares, or more heavily into those shares, in an attempt to achieve returns above the index.

information released to the market that no opportunities exist for investors to take advantage of information not already known. It is therefore impossible to generate alpha.

If this theory does indeed hold, then investment managers will on average not be able to outperform the market. Any manager believing in efficient markets will invest in line with the composition of the Index they are benchmarked to, and the only trading done on the portfolio will be to keep it in line with the Index.

Advantages of passive management

• Fees

The biggest advantage of passive investment management is lower fees. The investment managers are not required to make any investment decisions and don't employ a team of analysts to research stocks. The asset manager simply buys stocks in the Index proportionately to the Index composition. The portfolio is rebalanced periodically to ensure that holdings remain in line with the Index. In managing the portfolio, the passive manager must manage the costs incurred as well as the movements in the Index constituents.

• Indexed performance

A potential advantage is that performance will always be in line with Index. If the primary objective of an investment is to achieve the same return as the Index, then passive management can achieve this (although performance after fees and as a result of slippage may be slightly less than the Index return).

In a highly efficient market, such as the US and UK, indexed performance over the long term has been shown to outperform active management. In less efficient markets, and when there are peculiarities in the structure of the Index such as South Africa, long term outperformance has been more volatile.

South African equity index funds were certainly shining in the first half of this year, providing great support to their claim of long term outperformance at lower costs. This outperformance was mostly due to the high weighting of resource stocks (currently comprise 40% of the SWIX and 50% of the ALSI) in our indices.

Over the 12 month period to end June 2008, resources returned 39.91%, as opposed to the financial and industrial index return of -9.73%. In times of resource outperformance, as was the case for the 12 months to June 2008, index funds do very well.

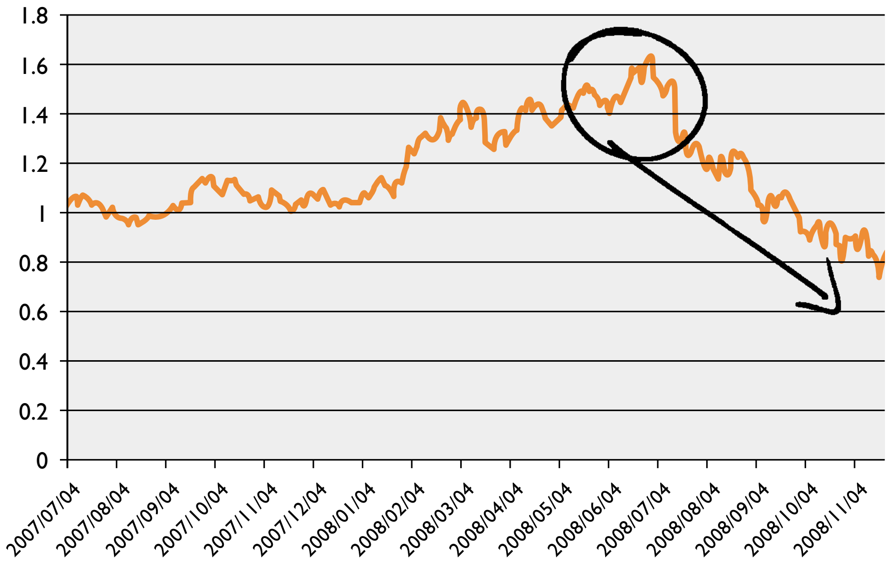
Disadvantages of passive management

• Indexed returns

One of the advantages of passive management could also be its biggest disadvantage, which is that the returns track the Index. In July 2008, the path of resource shares changed dramatically. In September 08 alone, resources declined by -21% while financials and industrials only lost 5%. For the 12-month period to end October 2008, the resource return was -37.72% compared to a -25.61% for financials and industrials.

The graph below shows the RESI relative to the FINDI and illustrates the phenomenal performance of Resource stocks over the 12-month period to July, as well as their sharp pull back from July.

JSE: RESI versus FINDI



• Slippage
Slippage is also an issue that needs to be managed with passive investing. This occurs where the Index is not completely investable. This may be as a result of small cap stocks which move in and out of the Index as their market capitalisations vary. When these shares are not liquid and can't be quickly traded, the passive portfolio may differ from the Index.

• Passive strategy
Another disadvantage is the passive nature of the strategy. When asset managers began to see particular sectors begin to decline at any point in time, there is nothing they can do to alter exposure to these shares without breaching their mandate. Managers are prohibited from taking any defensive action in the portfolio to protect earlier periods of strong performance.

This was the case in the last couple of months, when resource shares, and accordingly equity index funds, fell dramatically.

Types of passive management

Developments have been made to passive investment management to capitalise on the advantages and minimise the disadvantages. Some developments represent a move away from purely passive strategies; however not quite at the active end of the scale of strategies.

• Stratified sampling
This is a passive strategy whereby the manager replicates the characteristics of the Index rather than fully replicating the actual stocks in the Index.

Characteristics that can be replicated include style factors (allocation to growth or value), industry exposure or market cap exposures.

The choice of factors is at the discretion of the manager and historical information is used to determine the characteristics of the individual shares. Shares will be selected for the portfolio to match the Index in either one or all of the characteristics, but the portfolio will not necessarily hold all of the shares of the Index. This results in fewer shares in the portfolio and hence lower transaction costs. Performance of the portfolio may be very different to the Index.

• Optimised sampling
The factors that have historically driven the performance of the Index are distilled out through regression analysis. A portfolio of shares is selected that matches the same performance drivers as the Index. In selecting these shares, an optimisation process is run. This aims to select the best portfolio and minimise the tracking error to the benchmark, while maximising the exposure of the shares to the performance drivers of the Index.

The biggest challenge with optimised sampling is ensuring that the regression model adequately captures all the drivers of performance. Historical information is also used to determine the model and the relationships as well as how this changes over time.

• Tilting
This starts with a replication of the Index. From this point the asset manager will increase the weight of the shares that they believe may outperform the Index. In this way (if they pick the correct shares), they can add to performance and generate returns that are in excess of the Index returns. The asset manager however is not able to avoid shares that are expected to decline in value, so they are not able to act defensively and protect the portfolio on the downside.

There will be additional fees associated with enhanced indexation, as the manager will take bets on the shares that are expected to outperform, which implies some skill and research is required.

• Enhanced indexation
Enhanced indexation essentially begins at the same point as passive management, with the creation of a portfolio that mirrors the Index.

There are various methods that can be employed to get to this point and a variety of ways to add enhancements. Enhanced indexation attempts to add a portion of alpha to portfolio return while still keeping the costs of the strategy low.

• Fundamental indexation
In 2005, Rob Arnott, together with his colleagues Jason Hsu and Philip Moore from Research Affiliates, published an article on Fundamental Indexation introducing the concept to the investment world. The basis of their research was that market capitalisation weighted indices provide a poor proxy for the Capital Asset Pricing Model's (CAPM) "market portfolio" which should be mean-variance efficient (i.e. provide the highest return possible for a set level of risk).

This means that in the CAPM world, a passive investor can do no better than to hold the market portfolio, while an active investor will exploit short term inefficiencies to achieve returns in excess of the return on the market portfolio. Hence, the passive investor will hold a portfolio that is represented by a market cap weighted index such as the S&P500 internationally or the FTSE/JSE All Share Index in South Africa, while millions of active investors will benchmark their performance against the market cap indices available.

Market cap weighted indices are heavily dependent on the market price of each stock, and as a result will likely underweight those stocks currently underpriced relative to their fundamentals. This means that market cap weighted indices have historically had a performance drag, overweighting those shares that have already performed, and underweighting future performers.

The search has been on to find an Index that is not price based, and will consistently provide higher returns, with lower levels of risk. Without this consistent outperformance of a new Index, the market cap weighted Index would still form a close enough proxy that would make any new Index methodology null and void.

Arnott and Co. wanted to develop an Index that retained the benefits of a market cap weighted index for the passive investor. These included:

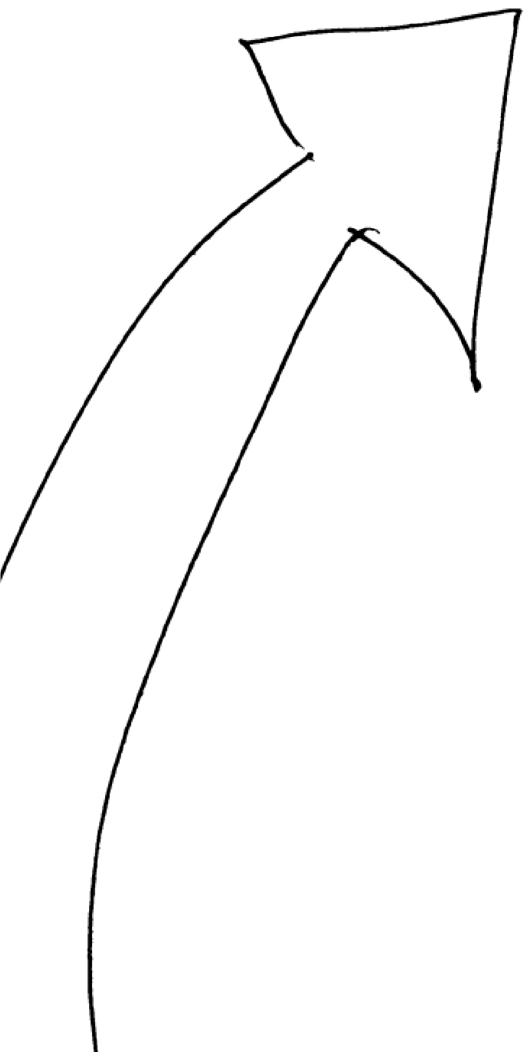
- Little trading needed;
- Access to the broad equity market including as many counters as possible;
- High liquidity and low transaction costs;
- Usefulness for large institutional funds.

To be able to weight companies by size, while avoiding an Index that was heavily concentrated in book size as well as market capitalisation, 6 fundamental factors were selected as representatives of company size. Companies were ranked by each factor with the largest 1000 in each category selected. These 6 factors are:

- Book value (book);
- Trailing 5 year average cash flow (cash flow);
- Trailing 5 year average revenue (revenue);
- Trailing 5 year average gross sales (sales);
- Trailing 5 year average gross dividends (dividends);
- Total employment (employment).

To create a composite Index, the weight of each company within the book, cash flow, sales and dividends indices was combined, in equal proportions. Where a company did not pay dividends, the weight of that company in the composite was determined across the 3 remaining indices so that its treatment was different to that of a low dividend paying company. Employment was abandoned as data is not readily available, and revenue was so highly correlated to sales that it added very little additional value to the Index.

This research by Arnott, Hsu and Moore has led many financial institutions across the world to offer products that are linked to Fundamental Indices, and attempts to identify the fundamental factors in the market in which they operate. Once the Fundamental Index is created, managers track this Index and rebalance as necessary. The fees charged for these strategies fall between those of active management and passive management.



What fundamental indexing does in essence is the redefine what constitutes the market. A passively managed portfolio will still have a beta that is almost equal to 1 but instead of the market being a market cap index (such as the ALSI), it is an Index constituted by alternative "fundamental" means.

2. Active management

What is active management?

When the EMH does not hold, it means the opportunity exists for shares to be traded at prices that do not fully represent their value. Active managers will spend time and effort attempting to identify opportunities where shares may outperform or underperform the Index. They will invest in stocks where they expect excess returns and avoid stocks they expect to decrease in price.

The large number of active asset managers out there may indicate that opportunities do exist for active managers to use their skills to generate returns above that of the Index. However, generally when the market is large and there are many participants looking to beat the Index, the market will be more efficient and the EMH is more likely to hold true.

Advantages of active management

• Active adjustment of portfolio

The main advantage of active management is the ability to adjust the portfolio to prevailing market circumstances. In the last 6 months, when resources started to fall in price, most active managers had built in some defensiveness and already reduced their exposure to these shares in an effort to protect the portfolio.

A lot of active managers may have taken this stance too early on in the year and suffered slightly as a result of missing some portion of the resources run, but they were able to make up any underperformance by avoiding the downturn.

• In-depth analysis to identify opportunities

Active managers make investment decisions based on expert analysis, judgment and experience. They are able to exploit any opportunities they have identified through their in-depth analysis. They utilise these opportunities to generate returns that are above that of the Index. The opportunity exists for significant outperformance of the Index.

Disadvantages of active management

• Potential underperformance of Index

The biggest threat a Fund can face from active management strategies is that the asset manager gets it wrong and underperforms the Index. If this happens occasionally it may not be a threat to the Fund's long term strategy. However, if the Fund is subjected to continuous underperformance, the Fund has to either terminate the appointment of one asset manager and replace them with another, or switch to a passive strategy.

The latter decision is especially relevant should all the Fund's active managers underperform the Index. Accordingly, making use of specialist skills to select managers that can consistently deliver outperformance therefore has the ability to add significant value to a Fund.

• Style limits ongoing outperformance

Another disadvantage is that active managers often pursue specific styles of management (i.e. value investing or growth investing). Although the manager will be able to beat the Index over the long term, there will be periods where the manager's specific style is not favoured by market conditions. During these periods, the active manager will underperform.

• Higher fees

The biggest disadvantage of active management is higher fees. Active managers require resources to conduct in-depth research on the market. These specialist skills attract higher fees. If active managers are consistently adding value over and above the return of the Index, these fees may be justified.

Passive or active strategy?

The debate between active or passive management has been ongoing for many years with no clear winner. Worldwide studies have been conducted to determine which approach will outperform over the long term. These studies very often revealed the time period as the determining factor. The results also change across different markets.

In South Africa, given the index structure and some market inefficiencies, it appears active managers are able to outperform the Index through time. The graphs on the right (1 and 2) illustrate the return of the average manager over both a 10 year period and the last 12 months, indicating a strong argument for active management. Graph 3 looks at the 12 months returns to June 08 in isolation. For this period, passive index strategies delivered much higher returns than active managers.

While both strategies have their advantages, the disadvantages need to be considered as well:-

- If active managers are selected, the Fund must ensure that the higher fees are offset by higher performance, to compensate for these fees over the long term;

- Alternatively, if passive strategies are chosen, the Fund cannot expect to outperform the market and after fees, performance may be slightly less than the market return.

A look at the returns

The rolling return graph on page 6 illustrates the performance of a SWIX tracker fund against the universe of active equity managers. Some interesting points to note:

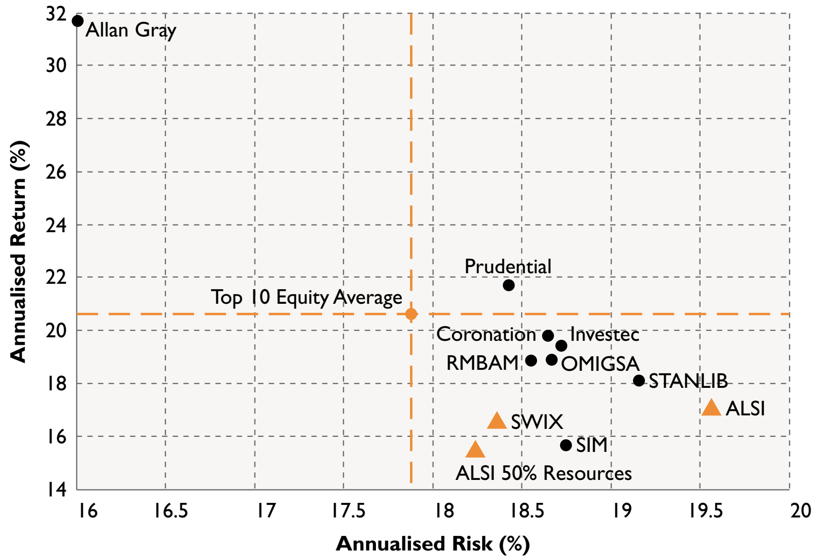
- From mid-2007, the dispersion of the returns between active managers increased notably. This is probably due to the performance extremes of resource stocks over this period and the different manager bets taken around this.

- The top quartile of active equity managers has always outperformed the Index and tracker funds, indicating that by selecting the right active managers, Funds can outperform the Index through time.

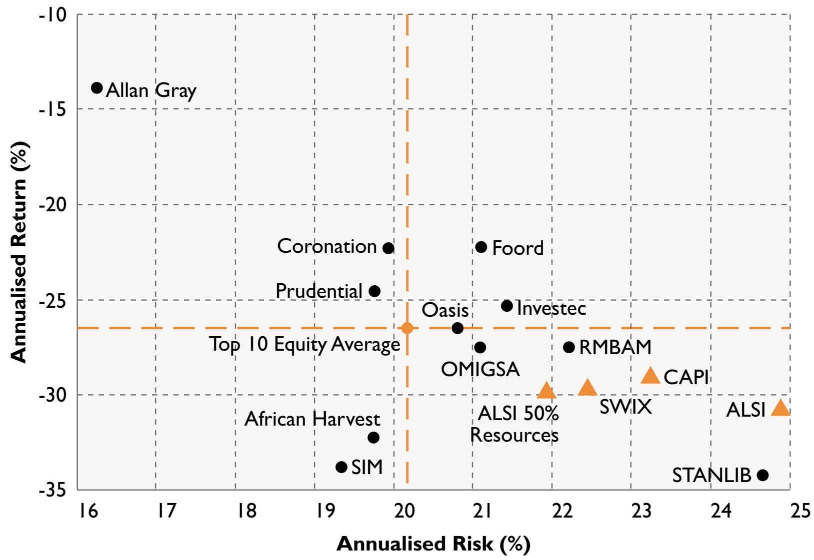
The issue of fees

One of the biggest points of contention in the decision between active and passive management is the level of fees that are

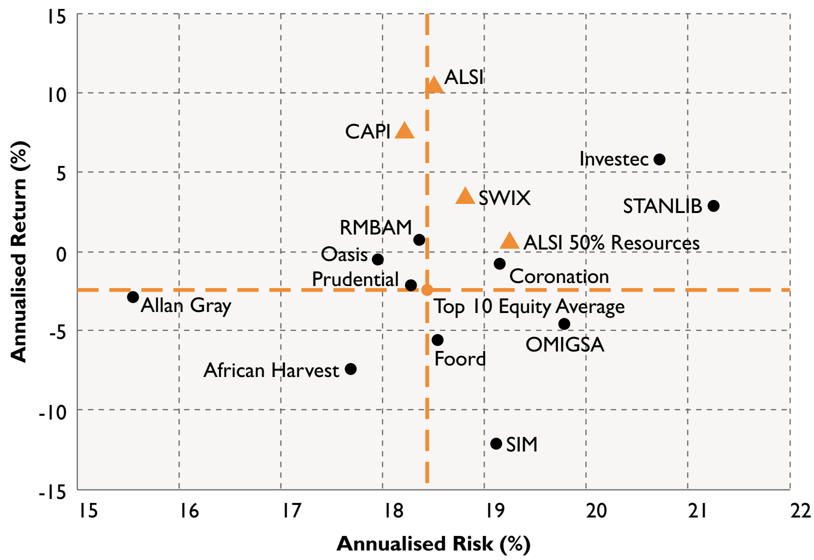
1: TOP 10 EQUITY MANAGERS: 120 Months scatter for the period ended October 2008



2: TOP 10 EQUITY MANAGERS: 12 Months scatter for the period ended October 2008



3: TOP 10 EQUITY MANAGERS: 12 Months scatter for the period ended June 2008



charged for the different strategies. Passive funds should cost less than actively managed funds.

The average fee for a passive equity portfolio will range between 20-50 basis point (bps), while active managers will charge flat fees that on average vary between 50-90 bps. On this basis, active managers seem more expensive, however most active managers can apply fees that are performance-based. In this case, the manager will charge a monthly set fee to cover their operating costs, and then over and above this charge a performance fee which only applies if they consistently outperform their benchmark. In these cases, the base fee is generally around 20-40 bps (well in line with passive managers) and if no outperformance of the Index is achieved, then no performance fees are payable.

If an investment manager does have skill and is able to consistently achieve performance in excess of the market, and this performance is still significant even after fees have been deducted, then it may be worthwhile paying fees that are higher than those charged by passive managers. If the deduction of fees completely destroys any alpha added by the manager, then a passive strategy should be contemplated.

The way in which fee agreements are structured is very important as the manager should really only be rewarded if they do add consistent alpha (and have measurable skill) and here again the expertise of a specialist investment consultant can play a role.

Making the decision

The decision to use an active or passive strategy is not always straightforward, especially during periods where markets seem to reward one strategy over the other. When evaluating the effectiveness of active management over passive management, the selection of the individual active managers should also play a part.

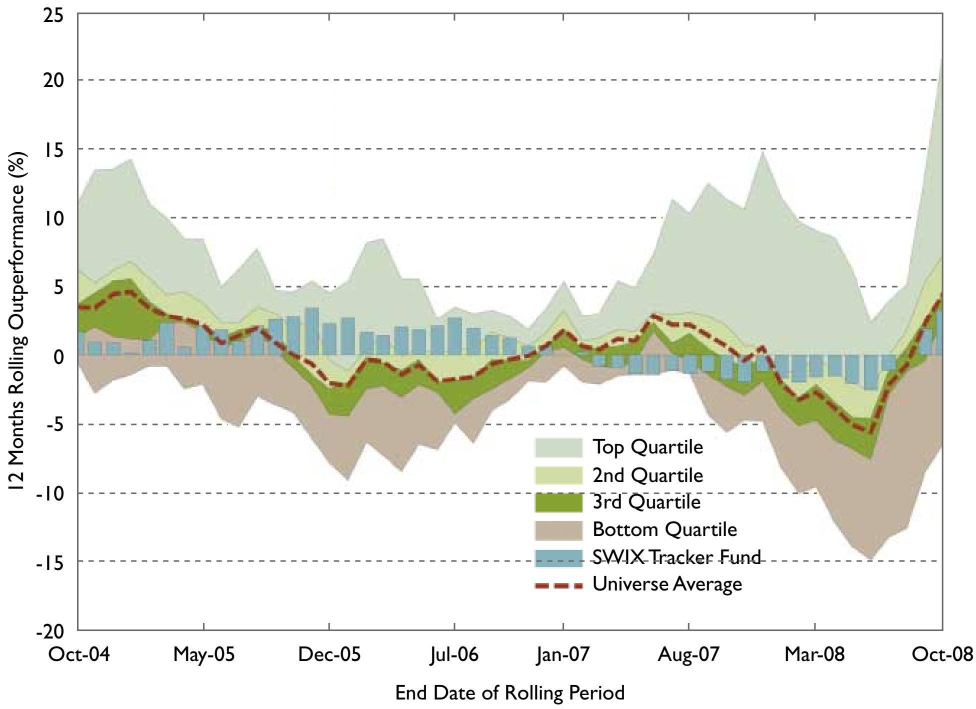
Skilful active managers do add value over time but there will be periods when markets don't favour their investment styles and passive strategies will outperform.

The benefit of active management is its ability to react to downward trends in markets and provide protection during these times. Passive management has the benefit of lower costs and returns that are always in line with the Index.

Ultimately, long-term success will come from an understanding of the Fund's overall investment strategy and risk profile. Once the strategy has been determined, the active or passive debate becomes relevant in the selection of managers to carry out this strategy for the Fund.

We believe active managers do add value in the long term and that the statistics bear this out, however, we do not discount the value that passive managers can add to the blending of investment styles.

TOP 10 EQUITY MANAGERS: 12 Months Rolling Outperformance Relative to the SWIX for the Period Ended October 2008



$R = \alpha + \beta$

1 minute with Claire Rentzke

My favourite time of day is: morning when the day is filled with promise.

2009 is the year of: the ox, so I guess great things will come from hard work.

I love to: be around my family (both two and four legged) because they remind me to be grateful for the simple things in life.

I eat: healthily.

RisCura is about: being given the opportunity to fulfill your potential.

I wish: people would be less selfish and care more for our environment and the people around them.

Profile

Santosh Ramkissoon

Research and Special Projects

MSc (Physics); currently completing MSc (Mathematics of Finance)

Santosh joined RisCura straight from the University of Cape Town and sits on our research team. Santosh loves to using cutting edge mathematical, statistical and computational techniques to solve challenging problems.

South Africa is: is rich in diversity and natural beauty.

My role at RisCura: is to use mathematics to analyse financial instruments and develop and evaluate models to assess risk.

I work at RisCura because: I enjoy the friendly, easy going atmosphere and the intellectual interaction with smart people.

I am at my best when I am: presented with challenges.

In the mornings: I drink coffee and run through my day ahead.

My family: is very dear to me. They inspire me and keep me grounded.

My greatest skill is: my ability to be dynamic and respond to change.

The best book I have ever read was: Surely You're Joking, Mr. Feynman!

I think people need to know: life is what you make of it.

I make a difference because: I am passionate about people. My job requires me to ensure that the financial interests of people, such as retirees, are taken care of.

RisCura

risk and investment consulting

Contact details

Cape Town Tel: +27 21 673 6999 Fax: +27 21 673 6998; 5th Floor, Montclare Place, cnr of Campground and Main Road, Claremont, 7735; PO Box 23983, Claremont, 7735, Cape Town, South Africa

Johannesburg Tel: +27 11 214 9800 Fax: +27 11 214 9801; Ground Floor, 23 Melrose Boulevard, Melrose Arch, 2076; Postnet Suite 116, Private Bag X1, Melrose Arch, 2076, Johannesburg

www.riscura.com