Active v. Passive Management: The Perennial Question

By: Rick Weed

Managing the equity portfolio of a retirement plan, endowment,or family trust, can be a challenging task. There are many trade-offs to be made, and each trade-off must be viewed through the lens of fiduciary responsibility to the plan. The high level decisions of overall plan allocation to equity and mixture of equities in a plan will have very large variance depending on the risk position of the overall plan.

There are a few, relatively simple, guidelines for selecting between active and passive management in the major sectors of the markets. These guidelines are based on many years of historical data, and the data back up the investment intuition behind these guidelines.

US Equities – Large Capitalization (S&P 500 benchmark)

The US large capitalization universe is the most efficient equity universe in the world. There have been numerous academic studies on the efficiency of this universe, the most famous of which is "The Loser's Game" by Charles Ellis of Greenwich Associates[1]. The main point made in this study is that investing in the large cap equity market is a loser's game. There are so many talented investors in this space that the investor who makes the fewest errors will 'Win" the contest. That said, with the number of talented

1 Winning the Loser's Game: Timeless Strategies for Successful Investing, Charles Ellis, McGraw-Hill, 1998

and highly compensated investors in this space, it's nearly impossible to outperform the benchmark. This landmark study (updated in 1997) found that 75% of actively managed funds underperformed the S&P500 over the previous 30 years.

In an updated study from 2009[2], in the previous 30 years, 68% of actively managed large cap funds underperformed the SP500 by an average of 0.9% a year. However, it's even worse than it seems. In 1970 there were 358 US mutual funds, by 2009 only 117 of these funds remained. I'm going to hazard a guess that the 66% of funds that closed did NOT outperform their benchmarks.

If we use data from Yale Professor Robert Schiller that's available on-line (http://www.econ.yale.edu/~shiller/data.htm) from 1929 to present, we'll see that the annual return on the S&P500 Index is 9.83%. Let's assume this for the return on the SP500 going forward, and let's make a few more assumptions. Assume that active management underperforms passive management by 0.9%, and that the costs of a passive S&P500 strategy are 0.1% a year.

So what's the "penalty" for using active management of the S&P500 over a long time period…say 30 years?

Active management: $1 MM invested 30 years at 8.93% = $13.01 MM
Passive management: $1 MM invested 30 years at 9.73%=$16.21 MM

So using historical data and market-derived data about active vs. passive management shows us that we'd have 20% LESS money available to us at the end of a 30-year investment horizon. These are certainly compelling numbers for the argument to use passive management in the US large cap market.

US Equities – Small Capitalization (Russell 2000 Benchmark)

After reading the section above, one might also think that the US small capitalization universe may also be quite efficient. I wouldn't take that bet so quickly!! The US small cap universe is a much larger universe than the S&P500 (there are approximately 2000 issues), as well as much more dynamic. Many small companies are born each year, and many of the same cease to exist each year. Another interesting characteristic of small cap stocks is that they generally have much smaller trading volumes than large cap stocks. This is another factor that adds to the relative inefficiency of this asset class. Large Brokerage/Investment Management firms cannot dedicate the resources to evaluate this many stocks because there is simply not enough trading volume in many

2 Active Versus Passive Investment Management: Analysis Update, Arnerich, Massena and Associates, August 2010

of these stocks for a large firm to acquire a meaningful position. This just adds to the inefficiency of this asset class.

The Arnerich, Massena Study referenced above also has a small cap study. Their study shows that for the 10 years ended 3/31/2007, 65% of active small cap managers outperformed the Russell 2000 benchmark by an average of 2.8% annually net of fees.

Callan Associates also studied US active small cap managers in 2006[3].In this study, they used their proprietary small cap manager database and found that for the 20 years ended 6/30/2004, the average small cap manager outperformed the R2000 by 4.78% gross of fees. The average small cap manager usually receives about a 1% management fee, so the net of fee performance will be 3.78%

Using the S&P 600 Index of small cap stocks, we can see that from 1926 to 2010, the average US small cap stock returned 12.4%. As above, let's assume the historical small cap average going forward for 30 years. Let's also assume the average outperformance is the average of the 2 studies above, or 3.3%. Let's also assume the average management fee for a Russell 2000 passive fund is 25 bps.

Active management:

$1 MM invested 30 years at 15.45% = $79.4 MM

Passive management:

$1 MM invested 30 years at 12.15% = $31.2 MM

US Equities – Midcap (Russell Midcap Benchmark)

US mid capitalization equities are often considered the "forgotten" stocks of the US equity universe. Of the overall US universe, 70% of the capitalization is in stocks over $10 BB, 21% of the capitalization is in stocks between $10 BB and $2 BB, and 9% of the universe is in stocks less than $2 BB. If a plan is managing it's US equity with only R2000 and S&P500 benchmarked stocks, there will be some benchmark overlap with the mid cap portion of the universe, but the plan could potentially be missing up to 21% of the US equity market.

As yet more evidence that these stocks are so neglected, Standard and Poor's did not create a Mid cap benchmark until 1992. But these mid cap stocks are a mostly undiscovered jewel in the US equity universe. Using Ibbotson Associates data from 1926 to 2009, MTB Investment Advisors performed a Study in 2010 that showed that

[3] The Active Management Premium in Small Cap US Equities. Is it Real, or a Figment of Universe Construction Bias?", Gregory C. Allen, Callan Associates, Inc., 2005

the long term returns for the Midcap Universe were approximately 2% above the large cap universe[4](footnote 4). And even better, the risk (based on Standard deviation of annual returns) is on par with that of large cap stocks.

But what of active managers in this space? Since "pure" midcap investing is a relatively new capital markets phenomena (only 25 years or so), there have been relatively few studies performed. Callan Associates prepared a study in late 2009 that showed the 20 year excess performance of various active managers[5]. The median Russell Midcap manager outperformed the benchmark by 0.71% a year pre-fees. Given that active management fees are usually on the order of 0.50% to 0.75%, it seems that it's "6 of one, ½ dozen of the other". The case for either active or passive management can be made.

However, it's our opinion that mid cap stocks should definitely be included in a well-diversified plan. The returns of this asset category are better than those of large cap stocks, with approximately the same level of risk

International Equities – EAFE Benchmark

It's a given that a well-diversified plan MUST include international investments. The most popular and widely-used benchmark for international investing is the MSCI EAFE index. This index is a cap-weighted index of Europe, Asia, and the Far East countries that have developed economies. Theoretically, active management should have many opportunities to add value. Active managers can overweight and underweight several countries, hedge or un-hedged currency exposure, and have a large multiple of stocks over the US indices to select from.

Luckily for EAFE investors, academic studies show that the active management results are aligned with the theory. The previously referenced Callan study showed an median annualized excess return of 2.85% for active management over the EAFE Benchmark. LSV prepared a study for presentation at the Chicago Quantitative Alliance in 2010[6] that compared the quantitative and fundamental active managers in several equity categories using data from the eVestment Alliance. From 1995 to 2009, the median manager outperformed the EAFE index by 2.56%.

4 The Case for Mid Cap Growth Investing, MTB Advisors, 2010

[5] Historical Active Management Premiums by Asset Class and Style, Callan Associates, 2009

[6] Quantitative vs Fundamental Institutional Money Managers: An Empirical Analysis, Joseph Lashonishok and Bhaskaran Swaminathan, LSV Asset Management, September 2010.

Using the EAFE index from MSCI, we can see that from 1970 to 2010, the average US EAFE stock returned 7.27%. As above, let's assume the historical average going forward for 30 years. Let's also assume the average outperformance is the average of the 2 studies above, or 2.7% pre-fees. Let's also assume the average management fee for an EAFE Active fund is 1% and an EAFE passive fund is 30 bps.

Active management: $1 MM invested 30 years at 8.97% =$13.2 MM
Passive management: $1 MM invested 30 years at 6.97%=$ 7.5 MM

International Equities – Emerging Markets

Emerging market equities are an excellent diversifying tool for a plan. They are relatively uncorrelated with the developed markets, and they have tremendous growth potential. However, with that great growth potential comes great risk. This asset class is volatile, but potentially very rewarding.

Intuitively, it seems that emerging market investing should be a ripe area for active management. The emerging markets are rife with uncertainty, information gathering is difficult, accounting standards are still developing, and there is widespread corruption. If a manager could develop good, reliable information from these markets, active management should add tremendous value.

Sadly, the things that make emerging markets so difficult to invest in, also make for extreme difficulty in obtaining useful information, as well as systematically maintaining this information. At least that's what the academic studies show.

The previously referenced Callan Study shows the median excess return for active management is 1.80% over the previous 20 years (ending 2008). This is not very encouraging, as annual management costs in this space tend to be on the order of 1.50% to 1.75%. Parametric Portfolio Associates[7] did a study in 2009 which analyzed the performance of Active Emerging markets mutual funds for 10 years ending 12/31/2008. The results were not encouraging to Active Investing, as only 37% of fund beat the Index over a 10 year period, and the excess returns over this period were -0.11% annualized. But even more important in this study, there is a large amount of downside risk as compared to upside risk, due to the large volatility of this universe. Therefore in manager selection, there is an asymmetric risk from choosing a manager who has negative returns. Gottsesman and Morey also did an academic study in 2006 attempting to predict emerging market mutual fund performance[8] (footnote 8). Their

[7] A 10-Year Examination of Active Investments in Emerging Markets: Can active managers utilize market inefficiencies cost effectively?, Parametric Portfolio Accociates, White Paper, Winter 2009

[8] Predicting Emerging Market Mutual Fund Performance, Aron Gottsman and Matthew Morey, Pace University, April 2006.

findings were also discouraging. In the period from 1997 through 2005, 64% of funds had returns below the benchmark returns.

So what do we do about active management in this space? It seems that the returns to active management in this space are very close to zero, one study showed slightly positive, and another showed slightly negative. However, the risk associated with choosing an underperforming manager is much more than the reward for selecting an outperforming manager. Yet one more added twist is that index management in this arena is not inexpensive. The average Index/ETF provider charges a management fee of anywhere from 30 to 50 bps. However, we can be assured that an index provider will have returns that match the index and NOT have an adverse selection bias.

The final thing we need to consider is the risk of the overall asset class. Because of the great rewards associated with emerging markets, there is also great risk. Since inception in 1988, the MSCI-Emerging Markets Index has returned 11.21% annually. However it's volatility is 24.1% with drawdowns of greater than 60%. This sort of volatility, combined with the asymmetric risk of manager selection leads us to conclude that passive management is the best strategy for this category.

Putting It All Together

The chart below shows the following equity asset classes that we have considered and the choice of active vs. Passive management in each category.Preference: Active vs. Passive

Equity Class	Active Mgmt Premium	Passive Mgmt Cost	30 Year Average return	Preferred Management
US Large Cap	-0.90%	0.10%	9.83%	Passive
US Midcap	0.20% to 0.0%	0.25%	11.40%	Active
US Small Cap	3.30%	0.25%	12.40%	Active
International	1.70%	0.30%	7.27%	Active
Emerging Markets	0.10% to -0.10%	0.40%	11.21%	Passive

If we assume that we have a $100 MM portion of the Equity portion of a plan, and we assume that the plan is invested conservatively at 60% US and 40% internationally, with the following breakdowns:

- US: Large cap 70%, Mid cap 15%, Small cap 15%
- International: Developed 85%, Emerging 15%.

The chart below shows the differences in outcomes from a preferred strategy vs. a fully active or fully passive strategy.

	Full Active Management	Full Passive Management	Preferred Management
Initial Capital	$ 100 MM	$ 100 MM	$ 100 MM
Rate of Return	9.92%	9.20%	10.23%
Final Capital	$ 1.707 BB	$ 1.403 BB	$ 1.860 BB
Capital Increase	17.08 X	14.03 X	18.60 X

Conclusion:

The results brought forward in this analysis make it clear that the decision to use active or passive management in an equity allocation cannot be solely a philosophical one. The prior chart illustrates theta the preferred assets allocation is a mix between active and passive portfolios. Though many of us would like to state unequivocally that passive or active management is the way to go across the board, there are several considerations in making that decision. As a fiduciary to a retirement plan, endowment or other program it is important to keep an open mind and determine what investment decision will be best for the beneficiaries of the plan. .

About the Author:

Rick Weed's expertise includes investment process development and implementation, trading, risk management and attribution analysis. Rick brings over 15 years of investment experience. He began his investment career at State Street Global Advisors in 1993 and joined Putnam Investments in 2000. Rick created State Street Global Advisors Aggressive Equity Strategy in the late 1990's. More recently he was a Managing Director/Chief Investment Officer of the Small and Emerging Growth team at Putnam Investments. There he developed the small- and mid-cap growth quantitative models that were used to run over $30 BB of assets. He also produced comprehensive risk management tools and processes for managing the Small and Emerging Growth area. He also created Putnam's Quantitative Small Cap Growth Long-Only Strategy, as well as Putnam's SCG Long-Short and 130/30 Strategies. Additionally, Rick was a partner at Vernon Square Capital where he was responsible for portfolio management, trading and risk management.

Rick is a 1985 graduate of Worcester Polytechnic Institute with a B.S. in Chemical Engineering, a 1989 graduate of Northeastern University with a M.S. in Chemical Engineering and a 1992 graduate of Massachusetts Institute of Technology's Sloan School of Management with a S.M. in Finance, Accounting , and Operations.

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