PZENA INVESTMENT MANAGEMENT

Smart Investing: There Is Nothing Passive About It

JULY 2015

Introduction

Passive investing strategies have become all the rage. Since 2000, Index strategies, together with their close cousins, Exchange Traded Funds, have gone from a little more than a tenth of U.S. Equity Mutual Funds assets under management (AUM) to just under one-third at the end of 2014 (Figure 1). The numbers are even more dramatic for Global/International funds, with passive strategies going from under 3% in 2000 to 27% at the end of last year. Over that time span, passively managed AUM has grown at 15.3% per annum, more than triple the rate of actively managed AUM, with no sign of slowdown in recent years. This market share shift has been cause for a lot of soulsearching within the ranks of active equity managers and a lot of speculation within the ranks of industry analysts. Do these data suggest a secular trend or a gigantic cycle? What is the end-state for passive share?

This paper asks the following question: Is the rise of passive investing inevitable because it offers a superior value proposition? In simple terms, is passive investing the "right" strategy for equity investors to follow? We examine the arguments most commonly cited in favor of passive strategies and look at the assumptions that underlie them. We conclude that passive investing is far from the panacea that many proponents claim it to be. Passive investing offers two good things – low fees and tax efficiency – and gross performance consistently close to a market index. A moment's thought shows then



Figure 1: Active vs. Passive Share of U.S. Equity Fund AUM

Source: ICI, Sanford C. Bernstein & Co.

that, on a net basis, passive strategies allow investors to systematically and consistently underperform the market throughout an investment cycle, the underperformance being precisely those fees and taxes. In contrast, active management strategies adhering to a consistent style in a disciplined fashion across the cycle offer investors a way to outperform an index over the totality of a cycle, despite higher fees and despite almost assuredly underperforming during meaningful portions of that cycle. At the root of the argument for passive investing is an assumption that investors have short time horizons and prefer consistent and predictable underperformance to lumpy and unpredictable outperformance. We question this assumption. Patient investors with long time horizons should seek to exploit the excess returns offered via disciplined active management, rather than the consistent below-market returns offered via passive strategies.

What is active versus passive investing?

Before delving into the active-passive debate, we need to define some terms. Somewhat surprisingly, there is no single agreed-upon definition of passive investing in the market today. Among the terms tossed around in a discussion of passive investing are simplicity, low turnover, absence of judgement ("rules-based" investing), and others. However, the general consensus among professional investors - which we adopt here - uses the term passive to mean an investing strategy seeking to mimic the returns of a given market index or benchmark. In practice, such strategies are enacted through portfolios holding all stocks in the index in proportion to their equity market capitalizations.¹ Using the above definition, we can then define active strategies to be those that seek to depart from a given index with the purposes of achieving some positive investment return over and above that of the index, commonly referred to as "alpha."

¹ There are variations to strict market cap weights, the most common being an adjustment for relative liquidity via free-float market caps. Such a construction is said to be "macro-consistent" in that it is theoretically possible for all investors to hold a portfolio constructed this way, with no shares left over. Said another way, such a portfolio truly "is" the market.

Recently, so-called "Smart Beta" investment strategies, occupying a middle ground between active and passive strategies, have been growing in popularity. Arising from academic work dating back more than twenty years, these strategies construct portfolios to mimic alternative indices based on "factors" associated with outperformance ("factor premium") over time. Such factors cannot be observed directly but instead are proxied by observable statistical measures. Six widely cited fundamental factors - shown in Figure 2 - are Value, Small Size (small cap), Momentum, Low Volatility, Dividend Yield, and Quality. Said another way, Smart Beta strategies seek to mimic an index using weights related to fundamental factors rather than floatadjusted market cap. As discussed below, rigorously executed Smart Beta strategies, like rigorous stylebased active management, offer the promise of market outperformance over the cycle.

Arguments for Passive Investing

We believe the following list captures most of the arguments advanced in favor of passive strategies:

- 1. Passive strategies are transparent. Investors know what they are getting: a market return for a low fee.
- Passive strategies enable investors to customize exposures to a given set of asset classes or sectors at low cost.
- 3. Passive strategies are much more tax-efficient than active strategies.
- Passive strategies present no performance disadvantage in comparison with active strategies. Few active managers out-perform the index in any given year, and those who do out-perform rarely show persistence in ensuing years.

Let's consider each of these in turn.

<u>Argument #1</u> seems to place a high premium on the value of transparency – passive investors will reliably get "the market" less fees and taxes. This is quite true – in fact, those low fees and taxes constitute *precisely* the consistent underperformance that passive strategies deliver. The question is whether such transparency is

Systematic Factors	What it is	Commonly Captured by
Value	Captures excess returns to stocks that have low prices relative to their fundamental value	Book to price, earnings to price, book value, sales, earnings, cash earnings, net profit, dividends, cash flow
Low Size (Small Cap)	Captures excess returns of smaller firms (by market capitalization) relative to their larger counterparts	Market capitalization (full or free float)
Momentum	Reflects excess returns to stocks with stronger past performance	Relative returns (3-mth, 6-mth, 12-mth, sometimes with last 1 mth excluded), historical alpha
Low Volatility	Captures excess returns to stocks with lower than average volatility, beta, and/or idiosyncratic risk	Standard deviation (1-yr, 2-yrs, 3-yrs), Downside standard deviation, standard deviation of idiosyncratic returns, Beta
Dividend Yield	Captures excess returns to stocks that have higher- than-average dividend yields	Dividend yield
Quality	Captures excess returns to stocks that are characterized by low debt, stable earnings growth, and other "quality" metrics	ROE, earnings stability, dividend growth stability, strength of balance sheet, financial leverage, accounting policies, strength of management, accruals, cash flows

Figure 2: Well-Known Systematic Factors from Academic Research

Source: MSCI, Inc. Please see related disclosure on page 7.

valuable enough to justify the underperformance. Highly stylized active management or rules-based Smart Beta strategies can also make claims about high transparency.

Argument #2 is widely suggested but wholly inconsistent with the idea of passive management. Over the past decade, the explosive growth in the passive funds world has led to an ever-greater proliferation of specialized indices. Nowadays, one can get sector indices, country indices, style indices, and a range of others. Armed with these, an investor can buy, say, a basket of country or regional indices and choose the allocation among them, electing to go "long China" or "long energy." Of course, in so doing, the investor is playing the role of the active manager, most likely an active manager adhering neither to a particular style nor to a disciplined process. This kind of active management - termed tactical asset allocation, which is really a special case of market timing - is virtually destined to underperform² and is clearly at odds with the concept at the heart of adopting passive in the first place.

<u>Argument #3</u> – the tax efficiency of passive over active strategies – is generally true. But the question is, how large is the difference? The magnitude of the tax advantage will largely depend upon the difference in portfolio turnover rates between a passive and an active strategy. Such turnover rates vary widely across different passive funds, depending upon the type of rebalancing strategies employed. Variation is even wider across actively managed funds, with rapid-trading strategies typically embodying far higher turnover rates than those with longer time horizons.

To examine the tax argument further we have compared a simple large cap index fund vs. an active value strategy similar to our own large cap value portfolio (Appendix 1). For simplicity, we have assumed identical dividend yields of 2% and annual price appreciation (net of fees) of 6%, so that both strategies have identical pretax return profiles. The main difference between them is the turnover rate: 3% for the index fund, 45% for the active value strategy (both fairly typical). Using a tax rate of 20% on dividends and 23% for capital gains, we computed the compound after-tax returns for the two portfolios over a period of 20 years, assuming full redemption after year 20. Under these assumptions, the index fund's annual after-tax return was 6.78% versus 6.53% for the active value strategy, a difference of 25 basis points. Our conclusion is that the tax advantage is real but small – much smaller than most investors making this argument probably realize.

<u>Argument #4</u> lies at the heart of the active-passive debate. Since the active manager operates with ingoing disadvantages in terms of tax (small, as noted) and fees, the whole case for active relies on the ability of an active manager to deliver enough alpha to counteract those two items. In making the anti-active case, passive proponents cite statistics showing that active strategies exhibit very low "batting averages" – that is, the fraction of actively managed funds beating benchmark in a given year is low, and out-performance tends to be non-persistent. Figure 3 – adapted from S&P's SPIVA U.S. Scorecard, makes this clear, illustrating active management's low batting average across different market cap ranges and time periods.

Figure 3: Percent of U.S. Mutual Funds Beating Benchmark

		Periods Ending Dec. 31, 2014				
Fund Type	Benchmark	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	
Large Cap Funds	S&P 500	13.6	23.8	11.4	17.9	
Mid Cap Funds	S&P MidCap 400	33.8	29.5	14.6	10.3	
Small Cap Funds	S&P SmallCap 600	27.1	19.6	13.5	12.3	

Source: S&P 500 SPIVA US Scorecard; Pzena Analysis

Yet there are several fundamental problems with the argument. First, "batting average" is a rather incomplete measure of success. An active manager can produce more down (i.e., below-benchmark) years than up years, but if the wins are large and the losses small, there is still outperformance over time. In other words, annualized return is a superior metric to batting average. Second, the argument rests on mutual fund data rather than institutional net returns data, thus

² There is much academic and other literature on the dubious wisdom of market-timing strategies. Estrada (2008) demonstrated that because extreme moves have outsize impacts on returns, market timing strategies face long odds. Clare et. al. (2015) show that only a small fraction of professional money managers succeed in timing asset class allocation changes. Ptak (2010) analyzed the returns of 163 tactical asset allocation funds and found these generally underperformed static funds blending the underlying asset classes.

adding a layer of fees within "active management" more representative of retail selling costs than manager fees. Third, the definition of active management in Figure 3 is very broad and in particular includes many funds with very low active share,³ funds that might be welldescribed as "closet indexers." Since such funds are akin to passive strategies with higher fees, they tend to exhibit performance similar to passive strategies, i.e., *highly consistent under-performance and thus very low batting average*.

Figure 4: Institutional Net Returns vs Retail Returns and Index U.S. Large Cap Equities: Annualized Net Returns in %

	Periods Ending March 31				
	Most recent 5 yrs	Prior 15 yrs	Total period		
S&P 500	14.47	7.75	9.39		
Morningstar Large Cap Blend - Median	13.23	7.55	8.94		
eVestment US Large Cap Equity - Median	13.82	8.62	9.99		
Memo:					
Institutional vs. Index	(0.65)	0.87	0.60		
Institutional vs. Retail	0.59	1.07	1.05		

Source: Morningstar, eVestment, Pzena Analysis

Examining other data on active management presents a more optimistic picture than Figure 3. Drawn from Morningstar data on large-cap actively managed mutual funds and eVestment data on largecap institutional active managers, Figure 4 shows that the median annualized institutional net return over the past twenty years has exceeded the S&P 500 by 60 basis points, and the median mutual fund return by 105 basis points. Investor behavior, however, appears to be heavily influenced by the most recent five year period in which median returns for active managers lagged the benchmark, overshadowing the strong evidence for outperformance of active managers over the prior 15 years. Although it is not possible to predict future performance, we believe the data support the case that there are institutional active managers with a demonstrated ability to harvest excess return over the long-term.

Now, Figure 4 has one primary flaw: both the retail and institutional data are subject to survivorship bias. Specifically, the returns comprising the sample set exclude non-surviving funds and managers - and these almost surely are below-average. Morningstar has estimated the magnitude of survivor bias to be 80 basis points; we are not aware of comparable estimates for institutional data, but intuitively we would expect the figure to be lower, probably significantly so. Adjusted for this bias, then, it is probably then correct to say that the median institutional net return approximates the benchmark. But a little thought suggests that there is still scope for outperformance, given that many managers do much better than median. Alpha is seemingly available for those willing and able to conduct the necessary due diligence.

In addition, it is critically important to note that both the Morningstar and eVestment data measure a sample of active managers and funds that encompass the full range of active share. In particular, the data include many active managers with low active share. This type of active management - "closet indexing" achieves investment outcomes akin to high-fee passive strategies. When such funds/managers are excluded from the sample, results change dramatically. A recent paper authored by Invesco suggests that if active management is defined to be only those funds having active share above 60, then 61% of active managers have delivered out-performance over a period spanning five market cycles (Wendler and Peckham, 2015). This study is also subject to survivorship bias issues. However, academic work from Yale (Cremers and Petajisto, 2009) based on datasets correcting for survivorship bias suggests a similar conclusion. In the latter paper, the authors show that funds exhibiting both high active share and high tracking error achieve (net) positive alpha.

Such a conclusion should not be surprising. There is a large body of academic research that demonstrates the existence and persistence of factor premiums, i.e., of excess returns associated with certain factors, including some of those in Figure 2. Skilled active managers seek

³ Active share is a statistic measuring how much a given portfolio departs from a given benchmark. See Appendix 2 for a more complete description.

to exploit these factors. In contrast, passive investing - by definition - employs ALL factors, whether those factors earn a positive premium over cycles (e.g., value or momentum factors) or a negative premium (e.g., expensively valued stocks with negative momentum). It is therefore forseeable that through the patient application of disciplined active investing exploiting those factors - or, indeed, the patient deployment of Smart Beta investing - that one will outperform an index constructed to have no tilt at all toward factors with positive premium. This is much more than a theoretical argument. In a paper published in the Journal of Portfolio Management, Arnott et. al. (2013) show that a wide variety of portfolios constructed in a disciplined fashion - even where that discipline is simply a random selection of initially selected stocks - outperforms a cap-weighted benchmark. The reason for this is that most such portfolios exhibit a bias to two factors - value and small market cap - relative to the index, and such factors have been shown to exhibit positive return premiums over time.

Discipline: The Real Issue

To summarize the preceding section: proponents for passive investing argue that accepting a consistently below-market return (i.e., a consistently <u>negative</u> alpha) is a superior value proposition versus attempting to find active managers to deliver positive alpha, and thereby running the risk – buttressed by the batting average argument – of instead getting larger market underperformance in many periods. The numbers of Figure 3 remind us that the investing world is full of unsuccessful actively managed funds.

How do we make sense of all this? The key is to recognize the role of <u>discipline</u> in the investment process and to acknowledge that outperformance and consistency are two investing concepts that do not generally go together. Consider the schematic shown in Figure 5, which divides the universe of strategies along two dimensions – alpha and volatility of alpha (i.e., the predictability of <u>relative</u> performance). It thus divides into four quadrants described as follows:

<u>Quadrant I ("Madoff Land")</u>: positive alpha with high alpha consistency. This is investing nirvana, whimsically

termed "Madoff Land" in the figure to emphasize the point of its unattainability. Few, if any, (honest) strategies inhabit this quadrant.

<u>Quadrant II ("Alpha Generators"</u>): positive alpha with low or modestly low alpha consistency. This quadrant includes active management winners employing a disciplined style aimed at exploiting factor premiums. Also in this quadrant are "patient" Smart Beta strategies, i.e., factor-based index strategies that keep relatively constant factor weights over time and thus avoid the risks of dynamic weights and "style drift."

<u>Quadrant III ("Value Destroyers")</u>: negative alpha with low alpha consistency. This quadrant is every investor's worst nightmare – cumulatively poor performance with highly idiosyncratic variation. Here reside "unskilled" (really better described as "undisciplined") active strategies, including the prominent specific case of market timing strategies described in the previous section.

<u>Quadrant IV ("Indexers"</u>): negative alpha with high consistency. This quadrant is the land of consistent underperformance, the province of passive investing as well as their more expensive (and worse) brethren, the closet indexers.

We believe Figure 5 is the way to reconcile the pessimistic numbers presented in Figure 3 with the extensive body of literature that asserts the existence of positive-premium investing factors like Value.

Figure 5: The Investment Management Landscape



Passive investing (just below the horizontal line in the chart) produces a simple result: performance that consistently and predictably trails the market index by the sum of fees and taxes. Further below the horizontal line live a host of active strategies that are demonstrably inferior to passive investing – closet indexers in Quadrant IV, and active managers employing no disciplined framework (including market timers) in Quadrant III. Above the horizontal line in Quadrant II lives a smaller group of active managers offering positive alpha over the cycle accompanied by the virtual <u>certainty</u> of extensive periods of underperformance.

One such group of managers inhabits the Value Investing universe. Elsewhere in our work on cycles, we have documented this phenomenon of periods of both outperformance and underperformance for this style.

Figure 6: Value Outperformance Over The Cycles Performance of Deep Value* vs. S&P 500**

	Deep Value	S&P 500	Relative Performance	# Months
Feb '69 - Jun '73	-8.3%	19.3%	-27.6%	53
July '73 - July '79	206.9%	30.4%	176.4%	73
Full Cycle (Annualized)	10.4%	4.3%	6.1%	126
Aug '79 - Nov '80	17.4%	45.6%	-28.3%	16
Dec '80 - Aug '88	414.7%	160.7%	254.1%	93
Full Cycle (Annualized)	21.9%	15.8%	6.1%	109
Sep '88 - Oct '90	-16.2%	25.1%	-41.3%	26
Nov '90 - Aug '95	247.9%	113.2%	134.6%	58
Full Cycle (Annualized)	16.5%	15.1%	1.5%	84
Sep '95 - Feb '00	71.8%	163.0%	-91.2%	54
Mar '00 - Feb '07	187.5%	15.5%	171.9%	84
Full Cycle (Annualized)	14.9%	10.1%	4.8%	138
Feb '69 - Feb '07 (Annualized)	15.5%	10.7%	4.8%	457

Current Cycle		
Mar '07 - Nov '08	-56.3% -33.4%	-22.8%
Dec '08 - Mar '15	242.8% 165.9%	76.9%
Cycle to Date (Annualized)	5.1% 7.3%	-2.2%

21 75 96

*Cheapest quintile price-to-book of the 1,000 largest U.S. stocks. Does not represent specific performance of any Pzena service. **Cap-weighted data.

Source: Sanford C. Bernstein, Pzena Analysis

Results from that work are reproduced here as Figure 6, showing historical cycles of relative performance for a low price-to-book strategy in U.S. equities. As may be seen, periods of underperformance have occurred frequently and have sometimes been of considerable duration. Notwithstanding those facts, patient investors following such a strategy through a full cycle have been rewarded with above-market returns. Arguably, those premium returns would not exist were it not for the fact that they are earned neither consistently nor smoothly. There is no free lunch.

Conclusion

The current trend away from active management towards indexing is undeniable, but is far from inevitable. While a number of forces are at work, the rationale at the heart of passive management is an investor preference for a consistent and predictable level of underperformance relative to a cap-weighted index that approximates "the market." A growing number of investors appear to prefer such a path to the more variable but ultimately more rewarding one offered by disciplined active strategies. And the recent poor relative performance of the latter group has no doubt reinforced this investor preference.

As we have seen, the concept of alpha (i.e., factor premium) exists. Over the long run, we believe the rewards accruing to the consistent application of disciplined active frameworks will endure and are well worth seeking out. In the end, such is the opportunity for the patient long-term investor.

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Appendix 1: Tax Advantage of Passive vs. Active Portfolio

	Large Cap Index Fund	Value
Turnover	3%	45%
Price Performance	6%	6%
Dividend Yield	2%	2%
Dividend tax rate	20%	20%
Capital Gains tax rate	23%	23%

	Portfolio \	/alue	Pretax price perfo	rmance	Dividen	ds	Capital g	ains	Taxes	5	Tax bas	sis
End of Year	Large Cap Index Fund	Value	Large Cap Index Fund	Value	Large Cap Index Fund	Value	Large Cap Index Fund	Value	Large Cap Index Fund	Value	Large Cap Index Fund	Value
0	1,000	1,000									1,000	1,000
1	1,076	1,070	60	60	20	20	1.80	27.00	4.41	10.21	1,017	1,037
2	1,157	1,144	65	64	22	21	1.94	28.88	4.75	10.92	1,036	1,076
3	1,244	1,224	69	69	23	23	2.08	30.90	5.11	11.68	1,056	1,118
4	1,338	1,310	75	73	25	24	2.24	33.06	5.49	12.50	1,078	1,163
5	1,440	1,401	80	79	27	26	2.41	35.36	5.91	13.37	1,101	1,211
6	1,548	1,499	86	84	29	28	2.59	37.83	6.35	14.31	1,126	1,263
7	1,665	1,604	93	90	31	30	2.79	40.47	6.83	15.30	1,153	1,318
8	1,791	1,715	100	96	33	32	3.00	43.30	7.35	16.37	1,182	1,377
9	1,927	1,835	107	103	36	34	3.22	46.32	7.91	17.52	1,213	1,440
10	2,072	1,963	116	110	39	37	3.47	49.55	8.50	18.74	1,247	1,508
11	2,229	2,100	124	118	41	39	3.73	53.01	9.15	20.05	1,283	1,580
12	2,397	2,247	134	126	45	42	4.01	56.71	9.84	21.44	1,321	1,657
13	2,579	2,404	144	135	48	45	4.32	60.67	10.58	22.94	1,363	1,740
14	2,774	2,571	155	144	52	48	4.64	64.90	11.38	24.54	1,408	1,828
15	2,983	2,751	166	154	55	51	4.99	69.43	12.24	26.25	1,456	1,923
16	3,209	2,943	179	165	60	55	5.37	74.27	13.17	28.09	1,508	2,024
17	3,451	3,148	193	177	64	59	5.78	79.46	14.16	30.05	1,564	2,132
18	3,712	3,368	207	189	69	63	6.21	85.00	15.23	32.14	1,624	2,248
19	3,993	3,603	223	202	74	67	6.68	90.94	16.38	34.39	1,688	2,372
20	4,294	3,855	240	216	80	72	7.19	97.28	17.62	36.79	1,758	2,505

With redemption:							
	Large Cap Index Fund	Value					
End Value	3,711	3,544					
CAGR	6.78%	6.53%					

2,537 1,350 583.43 310.44 <Taxes at Redemption>

The performance of simulated portfolios referenced herein is presented for illustrative purposes only and is not indicative of the past or future performance of any of our current or future investment strategies.

Appendix 2: The Concept of Active Share

To get around some of the confusion surrounding definitions of "active" and "passive," one can think instead in terms of degrees. In so doing, one useful metric is that of "active share," which measures the extent to which a portfolio departs from the market index. Mathematically, active share is defined for an index consisting of *N* securities by summing the absolute difference in weights in the portfolio versus the index via the formula

$$AS = \frac{1}{2} \sum_{k=1}^{N} |W(k, P) - W(k, I)| \qquad (1)$$

where W(k,P) denotes the weight of security k in the portfolio and W(k,I) denotes its weight in the index. The resulting expression of active share will vary between 0 (the portfolio is identical to the index) and 1 (maximum departure from index). A pure passive strategy will have active share quite close to zero, clearly; active strategies will vary, with some active managers ("index huggers") having low active share and others (e.g., strong style-bias managers) having active shares well above 80%.

PZENA INVESTMENT MANAGEMENT 320 PARK AVENUE, 8TH FLOOR | NEW YORK, NY 10022 | TEL: (212) 355-1600 | FAX: (212) 308-0010 | WWW.PZENA.COM © Pzena Investment Management, 2015. All rights reserved.