

# Gage Wealth Management Group

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## **A Comparison of Active and Passive Investment Strategies**

This article was originally written in 1995. Various research up through 2011 has been included in numerous updates. The story remains the same. A huge, well-replicated and expanding volume of studies have clearly proven the advantage of passive over active investment management.

### **WHAT IS ACTIVE MANAGEMENT?**

Active management might best be described as an attempt to apply human intelligence to find "good deals" in the financial markets. Active management is the predominant model for investment strategy today. Active managers try to pick attractive stocks, bonds, mutual funds, time when to move into or out of markets or market sectors, and place leveraged bets on the future direction of securities and markets with options, futures, and other derivatives. Their objective is to make a profit, and, often without intention, to do better than they would have done if they simply accepted average market returns. In pursuing their objectives, active managers search out information they believe to be valuable, and often develop complex or proprietary selection and trading systems. Active management encompasses hundreds of methods, and includes fundamental analysis, technical analysis, and macroeconomic analysis, all having in common an attempt to determine profitable future investment trends.

### **WHAT IS PASSIVE MANAGEMENT?**

Passive investment management makes no attempt to distinguish attractive from unattractive securities, or forecast securities prices, or time markets and market sectors. Passive managers invest in broad sectors of the market, called asset classes or indexes, and, like active investors, want to make a profit, but accept the average returns various asset classes produce. Passive investors make little or no use of the information active investors seek out. Instead, they allocate assets based upon long-term historical data delineating probable asset class risks and returns, diversify widely within and across asset classes, and maintain allocations long-term through periodic rebalancing of asset classes.

## WHAT IS INDEX INVESTING?

Index investing is a form of passive investing in which portfolios are based upon securities indexes which sample various market sectors and are constructed by committee. They are often called benchmarks though indexes are reconstituted on a regular basis, typically every six months, with poor performers deleted and good performers added. They are, thus, not constant benchmarks but variables somewhat influenced by price momentum. Best known of all indexes is the Dow Jones Industrial index, a basket of thirty very large U.S. companies but only one of the companies in the index in 1929 is still in the index today. Indexes are available for domestic and international equities and fixed income, industry sectors, commodities and gold, and virtually all asset classes and sub-asset classes.

## WHICH WORKS BEST?

Research supporting passive management comes from the nation's universities and privately funded research centers, not from Wall Street firms, powerful banks, insurance companies, active managers, and other groups with a vested interest in the huge profits available from active management. Results from this research are clear and indisputable: Active investment management is an appealing mirage which substantially boosts costs and decreases returns compared to properly designed passive portfolios. Active management does not do better in bear markets or allow investors to avoid losses.

## MARKETS AND ECONOMIES ARE UNPREDICTABLE.

Given that there are thousands of stock market experts, mutual fund managers, private money managers, and advisors, some will make spectacular calls and accurate predictions. And, when they do, this small group usually attributes it to their skill, not luck. Yet, extensive research has shown that, as a group, the performance of experts is what would be expected from chance guessing, there is no way of knowing in advance who will make the right call, and past predictive success is unrelated to future predictive success. The problem is that investment returns are the result of numerous unpredictable factors themselves, political, social, technological, emotional and other factors effect market prices and cannot be foreseen in advance. In addition, those who attempt to predict the future often use flawed models which make sense but only apply part of the time. For example, studies have found that past earnings growth for companies is only weakly correlated with future earnings growth or stock prices. Never-the-less, active managers and investors excitedly watch earnings reports for clues to the future price of a stock and buy stocks based on earnings predictions. Numerous studies of brokerage firm analyst predictions clearly show a wildly optimistic bias.

Economists in both the public and private sector provide a continuous series of data and forecasts in an attempt to predict future economic and investment trends. Yet, numerous studies have found that economists cannot predict major turning points in the economy, forecasting skill is, on average, about as good as chance guessing, and economic data is of poor quality and subject to frequent major revisions. For example, one study found that Federal Reserve economists did significantly worse than chance in predicting economic growth and turning points in inflation from 1980 through 1995. As of 2011, Fed Chairman Ben Bernanke's record in predicting economic trends has been almost 100% incorrect, an inverse predictor of future economic developments. The future is unpredictable despite the excellent livings many make in doing so. An article on "Economists and Economics" is found elsewhere on this site.

#### FUTURE SECURITIES PRICES ARE UNPREDICTABLE.

Several statistical studies have found that the price behavior of securities, such as stocks, bonds and commodities, is indistinguishable from that of random numbers over intermediate and shorter time frames. Patterns in numbers occur, technicians attribute great significance to them, but they have no demonstrated persistence or predictive power. We examine weaknesses in mean-variance models commonly used in securities analysis elsewhere on the site in "Risk and Return". Over many decades, the prices of equities, real estate, and gold trend upward due to inflation and economic growth. Otherwise, future securities prices are unpredictable. However, selling predictions is a big and profitable business (See "The Fortune Sellers" by Sherden, referenced below).

#### RISK AND RETURN ARE ABSOLUTELY CORRELATED.

High potential returns always involve higher potential risks. There are no low-risk/high-return investments. Investment risk comes in many forms but, to most investors, risk means the potential for losing investment capital and the duration or permanency of that loss. Through analyzing the best available long-term data, academic researchers have provided estimates of risk, defined as volatility, and mean returns. These findings provide our best approximation of future risk and return for any given asset class or mix of asset classes, and clearly show that there are no high return, low risk asset classes. Never-the-less, Wall Street continually introduces and promotes new and appealing alternatives supposedly immune to this solidly proven principle. An article on the site, "Risk and Return" examines risk and return in detail.

#### ACTIVE MANAGEMENT IS MORE EXPENSIVE THAN PASSIVE MANAGEMENT.

Active investors must overcome many costs to match the returns of the average passively managed portfolio. These include trading costs, much higher management fees, market impact costs as active managers affect the prices they pay, dilution from maintaining higher cash positions than passive managers, taxes in taxable accounts due to high turnover rates, and, commissions, if an investment "product", like a mutual fund, is purchased through a broker or financial salesperson. These costs create a handicap for the active investor of about 2% to 10% per year, depending upon asset class mix, and whether a salesperson is involved. The least expensive forms of active management, no-load mutual funds and "wrap fee" accounts, typically consume 1.3%-2.5% per year of an investor's returns, while the average passive or index portfolio runs under 0.4% per year.

#### ACTIVE MANAGEMENT IS MORE RISKY THAN PASSIVE MANAGEMENT.

Active managers attempt to choose securities which will outperform the market and, therefore, concentrate their "bets" across relatively few securities. If an active manager bets wrong, they may very significantly underperform market averages. Passively constructed portfolios, however, are highly diversified and contain thousands of securities allocated amongst various investment categories which have been identified by research and have predictable and quantifiable risks and returns. They never produce exceptional returns but also never produce exceptional losses compared to their respective asset class(s). For example, from 1991 Bill Miller's Legg Mason Value Trust outperformed the broad market every year through 2005, a winning streak no other fund manager has come close to matching. Then, in 2008, the fund dramatically underperformed the S&P 500, wiping out nearly 20 years of market-beating performance. As of December 2008, the fund was one of the worst-performing in its asset class for the prior one, three, five, and 10-year periods. Mr. Miller told the WSJ, "he failed to consider that the (financial crisis) would be so severe, and the fundamental problems so deep, that a whole group of once-stalwart companies would collapse."

Further, research has shown that asset class diversification with passive and index funds produces higher returns with lower volatility than simply investing in one or two asset classes, typical of most active management strategies. This is covered elsewhere on the site under an article on "Portfolio Design".

#### ACTIVE MANAGERS UNDERPERFORM PASSIVE MANAGERS.

Because of increased costs and risks, about 65% of active managers, as a group, underperform passive portfolios during any given year and, over time, this percentage increases until only a few outperform market averages. DFA examined the percentage of active equity funds which failed to beat their respective indexes from July 2004 through June 2009. It ranged from 63% for US large cap growth to 90% for emerging markets. For the same period, between 93% and

100% of actively managed fixed income funds failed to beat the market. Worse still, survivorship bias increases the apparent returns of active managers. On average 5.7% of the actively managed equity fund universe disappeared each year and by the fifth year, 28.5% of the fund universe had disappeared. Only about 33.2% of actively managed funds outperformed their index benchmarks in 2004 and five years later, only 1.4% of the surviving funds had outperformed their benchmark every year. The Financial Times (2-6-12) reported a study done by Merrill Lynch. Only one in five managers of US stocks managed to outperform the US stock market in 2011, almost an exact repeat of 2010. Active fund managers with a focus on growth stocks fared particularly poorly, with just 11% beating their benchmark and an average underperformance of 4.5%. An S&P Dow Jones study reported on marketwatch.com (10-10-12) found that in the five years through June 2012 fewer than a third of active equity managers and only 3% of active long-term bond portfolios beat their respective benchmarks.

Past active manager outperformance doesn't predict future outperformance. Of the 452 domestic equity funds in the Morningstar database that existed for 20 years, 1990-2009, only 3% outperformed their respective indexes and that doesn't take into account survivorship bias mentioned in the last paragraph. Several studies have shown that Morningstar "star" ratings have no predictive value. For example, of the 248 stock funds with Morningstar's (highest) five star rating in January 2000, only four, or 1.6% kept that rank after ten years (12-31-09). The odds of picking which active manager will outperform their respective index for longer time frames are about 1-1.5 out of 100. A Dow-Jones team looked at 2,682 mutual funds that had been operating for at least 12 months through March 2010. Just two funds landed in the top quartile for five consecutive years through June 2014. There was little evidence of consistent and persistent performance. Another Morningstar study examined five broad equity and fixed fund categories over multiple periods beginning in 2005 and running through March 2010. They found that, "In every single time period and data point tested, low-cost funds beat high-cost funds." Expense ratios matter significantly in predicting future fund returns.

Passive and index funds and ETF's are inherently very low cost. S&P did an analysis of persistence, "The S&P Persistence Scorecard" and summarized, " Very few funds have managed to consistently repeat top-half or top-quartile performance. Over the five years ending September 2010, only 4.1% of large-cap funds, 3.8% of mid-cap funds, 4.60% of small-cap funds maintained a top-half ranking over five consecutive 12-month periods. Expectations of a random outcome would suggest a rate of 6.25% so funds, in the aggregate, showed no evidence that past performance persisted. The study was repeated for the five years ending March 2011 with the same conclusions.

In "The Drunkard's Walk", physicist Leonard Mlodinow examines randomness and the statistical basis of Bill Miller's extraordinary winning streak. He references a Credit Suisse-First Boston newsletter published a few years before the winning streak ended which calculated that the odds of a manager outperforming the market on chance alone for 12 straight years to be one in 2.2 billion. Surely, chance could account for a few good years but not such an extraordinary and sustained performance. Mlodinow notes, however, that the CSFB statisticians were considering the odds that a specific fund manager chosen at a specific point in time, a priori, would outperform for the next 12 years straight. Mlodinow poses a question, "if thousands of people are tossing coins once a year and have been doing so for decades, what are the chances that one of them, for some period 15 years or longer, will toss all heads?" He calculates the probability that some fund manager in the last four decades would beat the market each year for some period of 15 years or longer. That probability is almost 3 out of 4. Bill Miller's winning streak didn't differ from what we would expect from chance samplings of a posteriori mutual fund manager performance.

Active managers do not do better in bear markets, a frequent claim. In 2008, a difficult year, Morningstar data found that stock-index funds lost 39.1% compared to 40.5% in actively managed funds. Standard and Poor's states, "One of the most enduring investment myths is the belief that active management has a distinct advantage in bear markets due to the ability to shift rapidly into cash or defensive securities. We dispelled this myth in 2003 using the case study of the 2000-2002 bear market. The downturn of 2008 provided another case study. The results are similar, with under performance across all nine style boxes." DFA examined the percentage of active equity funds which failed to beat their respective indexes from July 2004 through June 2009. That period includes a very strong bull market and the second largest equity market decline in the last 100 years. DFA found that active managers underperformed their respective asset classes from between 63% for US large cap growth stocks to 90% for emerging market stocks.

When matched for asset type and portfolio mix, passive managers outperform active managers by about 2% per year, on average after all costs. DFA has calculated that it would take an outperformance of about 5% annually for 64 years to prove that an active manager has outperformed a comparable passive portfolio.

**INVESTORS EMPLOYING ACTIVE MANAGEMENT DO FAR WORSE THAN THE ADVERTISED NUMBERS AND WOULD PROBABLY DO BETTER BUYING T-BILLS OR C.D.'S AT A BANK.**

Studies of real returns achieved by real investors in real brokerage accounts are rare. Two studies covering ten to fifteen year time frames have found that broker advised investors, and investors self-managing their accounts, captured only one-quarter or less of the total returns produced by indexes and less than half the return reported by managers and mutual funds. This is due to the tendency of brokers and investors to move around too rapidly, enter or leave asset classes at the wrong time, chase hot stocks and funds and managers, and run up management costs. A study conducted by the New York Times pitted five prominent advisors specializing in mutual fund selection (including the owner of Morningstar) against the S & P 500, a widely used market and index benchmark. The best advisor lagged the S & P by about 40% for the six years from 1993 through 1997.

Dalbar, an investment research firm, has performed studies of stock and bond investor returns versus the S&P 500 return and Barclay's US aggregate bond index for many years. Their 2012 update covered January 1992 through December 2011. They found that the average retail equity fund investor received 3.49% annually versus 7.81% for the S&P 500, trailing it by 4.32% annually. Coincidentally, 4.32% is about the size of the equity premium over T-bills. Investors would have done as well buying T-bills or CD's. The average bond fund investor received 0.94% versus 6.50% for the Barclay's Aggregate US bond index, trailing it by 5.56%. Inflation averaged 2.56% so the average stock investor only beat inflation by 0.93% and the average bond investor lost 1.62% annually after inflation.

It's important to note, as a few critics of the Dalbar study have, that Dalbar's data is based on the average dollar invested in mutual funds, not the actual performance of real investment accounts. Critics have proposed alternative methodologies to those used by Dalbar but there's no way to prove or disprove which methodology is more accurate since data on the performance of real assets in real investment accounts is sorely lacking. What little we have suggests that real investors in real brokerage accounts and mutual funds do poorly. On 10-3-12 the Wall Street Journal published data from a Morningstar study indicating that active investors manage to dramatically mistime buying and selling decisions. In the 10 years through August 2012, Dodge and Cox's \$37 billion DODFX, their international stock fund, gave an annualized return of 9.61% while annualized investor returns were -1.17% (Data from Morningstar). Research on traded retail accounts by Barber, Odean, and others confirms the Dalbar and Morningstar studies and further shows that the majority of traders lose money and high trader portfolio turnover reduces returns the most.

"EXCEPTIONAL" ACTIVE MANAGERS CANNOT BE IDENTIFIED IN ADVANCE.

A tiny handful of superstar money managers with outstanding past performance are featured in financial media as evidence for the benefits of active management. Yet, no one knew in advance who would outperform, the odds of selecting one in advance are very low, and the

results they achieved in the past may be due to luck. Hundreds of carefully done studies have found that past performance of money managers, mutual fund managers, investment analysts, and others is unrelated to their future performance. Track records mean nothing. The two greatest superstar active managers of our time, Warren Buffet and Peter Lynch, both recommend index investing.

Morningstar reports that three Oxford researchers have released a study of pension fund consultants who are paid to select active US fund managers. They concluded: "We find that consultants recommendations on funds...have a very significant effect on fund flows (money going into or out of the fund), but we find no evidence that these recommendations add value to plan sponsors."

#### ASSET CLASS MIX EXPLAINS OVER 90% OF PORTFOLIO RETURNS.

An asset class is a group of securities which have similar risk and return characteristics. One year Treasury bonds, or commercial real estate, or small company U.S. growth stocks, or emerging market stocks, are examples of asset classes. Research has clearly established that portfolio performance differences between different professional money managers are due predominantly to the asset class(es) they choose. Markets, not managers, produce returns.

#### THE "SMART" MONEY USES PASSIVE INVESTMENT STRATEGIES.

An estimated 40% to 50% of all institutional monies are in index or passive portfolios while only 10-12% of retail investors make use of passive strategies, though the latter number has roughly doubled in the last decade. Passive strategies are employed by AT&T, CALPERS, IBM, Intel, K-Mart, PacTel, Pepsi, and Stanford University, among many others.

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