



Understanding Asset-Class Investing

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ASSET CLASS INVESTING

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DISCLAIMER & SOURCES

The purpose of this paper is to explain the investment methodology called Asset Class Investing, which was developed by numerous academics and investment managers over the last several decades, and which is employed by Abacus Financial Planning & Asset Management. This paper will demonstrate how at any given level of risk, there is an Asset Class Portfolio that delivers higher returns than most investors have historically earned.

If you are short on time, you can read only the words italicized in blue, look at the graphs and tables, and you will absorb most of the content of this paper.

A BRIEF HISTORY OF INVESTMENT ADVICE

There are many types of investment advisors: mutual funds, the internet, bank trust departments, stockbrokers, magazines, Registered Investment Advisors, and perhaps even your Uncle Joe. As different as all investment advisors may seem, the types of advice they give can basically be broken down into one of these three categories:

1) ASSET ALLOCATION

Deciding which CLASSES OF INVESTMENTS (large stocks, small stocks, bonds, or cash) your money should be invested in.

2) STOCK SELECTION

Predicting which INDIVIDUAL STOCKS OR BONDS within each asset class are going to perform better than others based on research, company visits, recent performance, or a hunch.

3) MARKET TIMING

Predicting WHEN to get in or out of the market based on sophisticated, computer-generated technical indicators, how Alan Greenspan slept last night, or astrological forecasts (I'm not joking).

One of the most important decisions every investor must make, either intentionally or by default, is which combination of asset allocation, stock selection and market timing they will allow to effect their portfolio management decisions. The following grid shows where most investors fall:

	Active Management Adds Value	Passive Management is Better
Market Timing is Possible	Most retail investors. Financial press. Academia & institutions wouldn't be caught dead here. A very lonely place.	
Market Timing is a Joke	Most mutual funds. Reputable stockbrokers. Most money managers. Almost no retail. Home-sweet-home for academia. Institutions about 35% here.	

In 1991, three academics set out to study which of these three types of advice contributed the most to the actual returns earned. They chose to study the largest 91 pension plans in the U.S. over a 10 year period. With portfolio sizes reaching to \$3 billion, these are investors who could afford the best business school graduates, economists, and Ph.D.'s to conduct analysis, the most expensive computer systems, and the most cutting-edge company research. If there was ever a group that could extract and profit from inefficiencies in the investment markets, it was these financial superpowers. Their results are summarized below:

Determinants of Portfolio Return Asset Allocation 94% Source: Brinson, Hood, Beebower (1991)

The pie chart above is a little bit misleading. It appears to say that if a pension plan employed all three of these techniques, it would get "the whole pie" of investment returns. In actuality, the pie chart is only illustrating the explanatory power of each technique, not whether it adds to, or subtracts from, investment returns.

The study went on to find that the contributions made by market timing and stock

selection were negative, when adjusted for risk. In aggregate, the pension plans would have done better to just allocate their investments to certain asset classes and not try to pick individual stocks or time their investments at all, because those two activities subtracted from risk-adjusted returns rather than added to them. These results have been confirmed by many other academic studies of mutual funds', stockbrokers', and individual investors' performance, some of which this paper will summarize.

The study does not mean to say that stock selection and market timing can never add to performance. Indeed, some of the 91 pension plans studied did have higher returns than they would have had by just allocating to asset classes. In aggregate, however, these activities hurt more than they helped, even when engaged in by very skilled investors.

MUTUAL FUND PERFORMANCE

So if some investment managers can use stock selection and market timing to beat a passive allocation strategy, intuition says we should be able to identify them ahead of time. In today's market, mutual funds are the most accessible arena in which we might find these stars. Let's look at past performance to see what correlation it has with future performance.

If we buy the best category of mutual funds over the last five years, how do they do in the subsequent five year period?

Category 1989 5-Year 1994 5-Year
Results Results

1. International Stock 20.60% 9.37%
2. Equity Income 14.31% 11.21%
3. Growth & Income 14.20% 11.90%
4. Growth 13.30% 13.90%
5. Small Company 10.26% 15.87%
6. Aggressive Growth 8.91% 16.31%

During this study, there was an inverse relationship between the two periods. The best category became the worst and vice-versa. This means that if your strategy had been to buy the best performing category of '84-'89, and hold it from '89-'94, you ended up owning the worst performing category. While each period is unique, most studies confirm that short-term performance history is not predictive of short-term future performance results.

Of the 14,304 mutual funds currently trading in the U.S., 13,796 of them are actively-managed. This means that they employ stock selection and market timing in an attempt to "beat the market". These mutual funds hire the best and brightest of the nation's business school graduates, spend enormously on sophisticated computer systems, and employ just about every technique imaginable to add to their returns. How have they done at achieving their goal of better-than-the-market performance?

Percent of U.S. Large Stock Funds that Underperformed the S&P 500 Index

Sources: Ibbotson Associates and Morningstar, Inc.

The data above is a clear indication that active management doesn't work in aggregate. There is never a year in which a majority of funds beat the S&P. So just how much worse do these funds perform? One of the most useful studies to answer this question was done by Mark Carhart at the University of Chicago. Professor Carhart studied all of the mutual funds that existed anytime between 1961 and 1993, and found that on average, actively-managed funds under-performed their index by 1.80% per year. Similar findings are outlined in the ground-breaking paper entitled Returns from Investing in Equity Mutual Funds 1971 to 1991 by Burton Malkiel, the Princeton professor who authored A Random Walk Down Wall Street.

GIVEN THAT THERE ARE "WINNERS" EACH YEAR, SURELY WE CAN PICK THEM!

A few years ago, a study was conducted by Vanguard Funds to see if great past performance was predictive of great, or even above-average future performance. The next page shows that even if one's strategy was to buy the top 20 equity funds from the prior year, there is almost no chance they will be in the top 20 again, and about a 40% chance that they'll be worse than the average fund in the subsequent year.

What if one bought the top 20 funds for the ten years just ended? Surely if a stock-picking, market-timing manager has been able to be in the top 20 funds for a full 10 years, he or she will be well above average in the subsequent 10 year period. Not so, according to the data. Again, a full 45% of the previously "top" funds do worse than the average fund, and as a group, their aggregate performance was worse than if one had simply bought every single mutual fund available.

One Year Rank Order of Top 20 Equity Funds* 1980 - 1989

Rank in First Subsequent

Average Annual Return: Top 20 Funds 19.0% All Funds 10.4% Number of funds 177

HUMAN EMOTIONS AND INVESTING

One of the biggest causes of this under-performance is emotional decision making. Active management allows a manager's emotions to enter the decision-making process, while an index does not. All human beings tend to make decisions based on recent emotional experience. If an action has just caused suffering, that action is less likely to be repeated. If an action has just caused happiness or pleasure, it is more likely to be repeated.

What this phenomenon means to active managers of investment portfolios, is that they will invest in what just earned a profit, and they will sell what just caused a loss. This amounts to buying high (what just earned a profit) and selling low (what just caused a loss). Buying high and selling low is the exact opposite of what creates a successful investor. Sir John Templeton sums it up as only an Englishman can, when he says, "To buy when others are despondently selling and to sell when others are avidly buying requires the greatest fortitude and pays the greatest reward."

Individual investors in mutual funds are subject to emotions just like the managers of those mutual funds. So what about the actual investors in mutual funds ?

Another study, done by the research firm DALBAR, Inc., sought to compare actual returns earned by individual investors with the market indexes. Notice that this is a different study than those cited above concerning mutual fund performance. It measures what investors like you and I actually put in our pockets as opposed to what percentage returns the mutual funds published. The table below summarizes their findings.

INVESTMENT ANNUALIZED RETURN

S & P 500 Index 15.45%
U.S. Small Stock Index 11.22%
U.S. Treasury Bills 6.09%
Average Equity Mutual Fund Investor 5.85%
Average Money Market Fund Investor 4.69%
Inflation 3.52%

1/1 /84-1 2/31/95, Dalbar, Inc.

This is the only study we know of that scientifically measured a large sample of retail investors. Investors can switch in and out of “hot” funds with a call to an (800) number, can respond to news articles about great managers, and can otherwise implement investment plans very quickly and efficiently. Yet the average investor in stock mutual funds under-performed T-B ills funds (while being exposed to all the inherent risks of owning 100% stocks in their portfolio). What did this under-performance mean to the average investor’s \$10,000 portfolio over those twelve years?

Comparison of Average Mutual Fund Investor’s Returns to Indices:

Source: Dalbar, Inc. study, 1/1/84-1 2/31/95

The average mutual fund investor studied by Dalbar, Inc. between 1985 and 1994 ended up with \$19,783, about a third of the \$56,070 they should have earned for the level of risk they took.

A NEW DEFINITION OF INDEXING

Because of the popularity of indexing in the press, and journalistic tendencies towards over-simplification, most of the investing public has come to define indexing as synonymous with “buy the S&P 500 and forget about it.” As we’ve seen, this strategy would cause you to beat an average of 85% of the mutual funds in America year in and year out, because it removes the emotion and “intuition” that cause so many mutual fund managers and individual investors to under-perform. But it is possible to do even better than the simple indexing discussed in the popular press.

The S&P 500 is an index of the largest 500 companies in the U.S., also known as U.S. Large Stock Asset Class. Most mutual funds invest primarily in U.S. Large Stock, whether they are called Growth, Value, Income, or Balanced. By buying U.S. Large Stock instead of bank CD’s or T-Bills, you are assuming Equity Risk, or the risk of owning stocks. What exactly is this risk and what do you get for assuming it? The risk is that the S&P 500 can and does go down up to 40% during major bear markets. The

1990-92 10.34 12.11 14.64 13.18 16.13 12.79 15.34 9.11 11.79 10.74
 1993-95 15.07 14.20 14.95 15.37 15.35 15.77 15.75 13.73 15.46 16.94

(The unfortunate part is that we can't predict which end they'll be in next year.)
 However, knowing that they congregate at the extremes gives us an advantage: by owning both the largest and smallest companies, we will most often own the part of the market experiencing the highest returns. But, you say, we will also most often own the part experiencing the worst returns. That is true. However, on average, there are more good returns than bad, and overall, the positive returns are greater than the negative ones (in absolute terms). That means that if you owned the best and worst each year, the best would help you more than the worst would hurt you.

The third and final risk-factor is Distress Risk. This is the risk of owning companies that the market perceives as being in some form of financial trouble. While none of us would choose to invest in a single company on the financial rocks, indexes of "value" stocks have historically offered very high returns precisely because most investors steer clear of the dogs while rushing to own the stars. In other words, the prices of the stars get bid up, while those of the dogs get bid down, creating value for investors willing to own them.

Many academic studies, especially those of Dr. Kenneth French (Yale) and Dr. Eugene Fama (University of Chicago) have confirmed this value effect in both domestic and international markets.

In research released by Dr. French in February of 1997, the following average annual returns for the entire universe of U.S. Stocks were reported for the period from 1964-1996:

SMALL STOCKS LARGE STOCKS

Value Index (dogs): 20.88% 15.85%
 Growth Index (stars): 13.89% 11.72%

This one simple table summarizes both the size effect and the value effect for the U.S. stock market. As you can see, value earns about 4-7% more per year in returns than growth.

What does this extra return do for a value portfolio? Let's say that value only adds 3% per year of return. Let's say the entire U.S. market earned 8%, then the Value Index would earn 11%. Here's what happens to the same \$10,000 over twenty years:

\$180,000	\$160,000	\$140,000	\$120,000	\$100,000	\$80,000	\$60,000	\$40,000	\$20,000	\$0
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

The previous several paragraphs have gone into some detail about the three risk factors that the investment market rewards; Equity Risk, Size Risk, and Distress Risk. There are many other types of risk that one can take when investing, such as the risk that a

particular company or industry can run into financial trouble. However, on average, the markets don't reward investors for taking company risk or industry risk. This is very confusing when one hears about Microsoft stock skyrocketing or Warren Buffet making billions by owning only eight companies. Surely one can't say that limiting one's investments to a small handful of companies goes un-rewarded. What you don't read about in the press, is that for every Warren Buffet there are ten thousand investors who put too many eggs in one basket, and drastically under-performed the market indexes. In fact, according to statistics, there are fewer Warren Bufets in the world than there should be by pure chance (i.e. 25 million monkeys throwing darts should produce about 125,000 exceptional performers).

Everything you need to know about stock investing is contained in this formula: $E(R_i) - R_f = b_i [E(R_M) - R_f] + S_i E(SMB) + h_i E(HML)$ English Translation: 1. You are paid more as an owner of companies than as a lender to companies. 2. You are paid even more as an owner of SMALL companies. 3. If the companies you own are perceived by other investors to be in DISTRESS, you are paid substantially more for owning them.

DISSIMILAR PRICE MOVEMENTS

There's another advantage to indexing into these many asset classes; they tend to have dissimilar price movements. The mathematical expression of the effect that one investment's return has on another is called the "correlation coefficient." The asset classes described above have correlation coefficients as low as -12.9%. This would mean that on average, if one asset class went down 20% in a year, the other asset class would actually go up by 2.6% in that year. While low or negative correlations don't guarantee that a portfolio won't lose money, they do smooth out its volatility.

A SMOOTHER RIDE EQUALS HIGHER RETURNS

So what does a smoother ride mean in terms of dollar growth in an investment portfolio. To use a simple example, let's say that you have two portfolios invested for three years.

Here are the returns:

PORTFOLIO: A B

Year 1: 40% 10%

Year 2: -20% 10%

Year 3: 10% 10%

Average: 10% 10%

If you begin Year 1 with \$100,000 invested in each Portfolio, which one do you think has the most dollars at the end of Year 3?

The answer may surprise you. Porfolio A ends up with \$123,200, but Portfolio B has \$133,100, \$9,900 more after just 3 years. In terms of earned dollars in the account at the end of each year, here is how they stack up:

Over longer periods of time, the benefits of lower volatility become even more pronounced.

ASSET CLASSES

While it is nearly impossible to create a portfolio that will earn exactly the same returns year after year, we can drastically reduce portfolio volatility by combining asset classes that do different things at different times (are less highly correlated). The process of buying a collection of passively-managed index funds that capture the appropriate amount of Equity Risk, Size Risk, and Distress Risk is called Asset Class Investing.

Here is a listing of the asset classes that Abacus uses to reduce portfolio volatility and capture the equity, size, and value risk premiums.

U.S. large stocks

U.S. large value stocks

U.S. small stocks

U.S. small value stocks

U.S. real estate stocks

Direct ownership of real estate

Indexed commodities pool

Int'l. large stocks

Int'l. small stocks

Int'l. small value stocks

Emerging markets stocks

Short-term, high-grade corporate bonds U.S. Treasury bonds

Municipal bonds

TAX EFFICIENCY

Most of the invested wealth in America is held by an owner subject to income tax, whether it be a trust, an individual, or a corporation. Isn't it surprising, then, how little attention is paid to AFTER-TAX RETURNS. Let's pretend we have two possible investments that earn 10% per year. Investment #1 is subject to tax on 100% of its return, while Investment #2 is only subject to tax on 25% of its return. By having to pay, let's say 30% tax on your returns, Investment #1 really only returns 7% after-tax, while Investment #2 returns 9.25%. $9.25 - 7.00 = 2.25\%$, which is a huge difference on an annual basis.

The biggest factor in raising the taxable portion of an investment's return is portfolio turnover. Portfolio turnover is how much of a portfolio is sold and bought in a given year. For example, a portfolio with 100% turnover holds on to none of its assets from one year to the next. If it held Microsoft and Wal-Mart in 1996, by 1997 it had sold them and instead bought Intel and Sears. If you owned this portfolio, and Microsoft and Wal-Mart experienced 30% appreciation in 1996, you would have been taxed on all of that return, because the fund manager sold 100% of his holdings and realized all capital gains.

A portfolio with 10% turnover holds on to 90% of its assets from one year to the next. Therefore, if its assets experience a 30% appreciation, it only realizes a small portion of the capital gains it has earned. Therefore, investors in that fund pay much lower taxes, even though they have earned just as much return as the fund with 100% turnover.

In their efforts to outperform the market, actively-managed mutual funds tend to have

much higher portfolio turnover than the market indexes. In contrast, Asset Class Investing uses index funds that have very low turnover relative to other mutual funds:

ANNUALPORTFOLIOTURNOVER

Average Large Growth Mutual Fund: 103%

Average Asset Class Index Mutual Fund: 13%

After-tax difference of \$10,000 invested in 100% turnover portfolio vs. 13% turnover portfolio, 10% rate of return in both portfolios, 20 years:

Remember in the above graph, that the only difference between the two portfolios is how much turnover there is from year to year. The rates of return are identical. The tax rates are identical. But if you owned the average Large Growth mutual fund with 103% turnover, your experience replicated the red line. If you owned the average Asset Class Index Fund with 13% turnover, your experience replicated the green line.

AND FINALLY, EXPENSES

At a recent Morningstar Conference in Chicago, John Bogle, the CEO of Vanguard Funds, unveiled a study which illustrated the power of expenses in predicting how well a fund will subsequently perform. His study began by categorizing the mutual funds in Morningstar's database according to their investment styles. He showed the audience a breakdown of 211 large-cap blend funds ranked in four groups according to expense ratios. Those funds with the lowest expense ratios happened to have the highest returns, while the second lowest, on average, outperformed the third group, and so forth. Gross returns and measures of risk were virtually identical for each quartile. The only real difference among the four groups was the net return that each gave investors. The hard-to-escape conclusion: Every dollar, on average, that investors refuse to pay to the fund companies is, roughly, a dollar that they are consequently able to put back into their own pockets. So how do index fund expenses compare to the average mutual fund.

EXPENSES

Average Large Stock Mutual Fund: 1.89%

Sample Large Stock Index Fund: 0.15%

If the Vanguard study is accurate, the Asset Class Investor is keeping 1.74% in his pocket rather than paying it to mutual fund managers. Separate account managers are not much better, once their fees, transaction costs, and taxes are factored in.

HISTORICAL PERFORMANCE OF ASSET CLASS INVESTING

Up to this point, I've summarized much of the research that is the basis for Asset Class Investing. But how have Asset Class portfolios performed in real life? Over the next several pages, we will look at three of the six Asset Class portfolios, what they're made up of, and how they performed.

Most mutual funds, investors, and stock-brokerage accounts in the U.S. consist of 100% stocks. Therefore, let's look first at the Asset Class Portfolio that consists of 100% stocks, the Equity Asset Class Portfolio:

For our more conservative clients, we incorporate bonds to reduce the portfolio's volatility and chance of significant loss. However, the relative allocation to these stock asset classes remains the same.

In the table below, the Equity Asset Class Portfolio (100% stocks), as well as a 60% stock, 40% bond portfolio are compared to the S & P 500 index:

Annual percentage returns, 1/1/1973 – 12/31/2001:

100% STOCK 60% STOCK S&P 500
ASSET CLASS ASSET CLASS INDEX

PORTFOLIO PORTFOLIO

1973	-17.4%	-8.2%	-14.7%
1974	-24.2%	-11.7%	-26.5%
1975	48.7%	31.5%	37.2%
1976	30.7%	22.5%	23.9%
1977	18.8%	12.6%	-7.2%
1978	24.3%	16.9%	6.6%
1979	20.3%	16.7%	18.4%
1980	28.7%	22.0%	32.4%
1981	3.8%	10.4%	-4.9%
1982	18.9%	20.5%	21.4%
1983	31.8%	22.1%	22.5%
1984	8.4%	9.7%	6.3%
1985	38.1%	28.8%	32.2%
1986	29.6%	22.8%	18.5%
1987	13.7%	11.5%	5.2%
1988	25.8%	18.1%	16.8%
1989	31.4%	22.0%	31.5%
1990	-13.8%	-5.3%	-3.2%
1991	33.8%	24.8%	30.6%
1992	12.4%	10.0%	7.7%
1993	28.3%	19.6%	10.0%
1994	1.4%	0.5%	1.3%
1995	23.3%	18.1%	37.4%
1996	18.5%	14.1%	23.1%
1997	14.2%	11.3%	33.4%
1998	6.1%	6.9%	28.6%
1999	19.7%	13.4%	21.0%
2000	0.1%	2.8%	-9.1%
2001	1.4%	3.8%	-11.88%

\$ grows to: \$58.84 \$33.27 \$26.83
Returns: 15.09% 12.85% 12.01%
All returns are before any fees or taxes.

There are Asset Class Portfolios which offer exceptional rates of return for every level of risk. Rather than take you through an analysis of performance for each of these portfolios independently, let's look next at a graph that shows the growth of \$100,000 for each of three all-mutual fund Asset Class Portfolios, compared to the S & P 500, from 1973 to 1997. Note that many mutual funds don't show data back to 1973 because either their strategy is not consistent enough to backtest, or they don't want the 1973-74 crash to reduce their advertised returns.

Value of \$100,000 invested on January 1st, 1973:

TOOLS OF THE TRADE

Traditionally, Asset Class Investing was performed only by the largest institutional investors. Investment advisory firms created Asset Class mutual funds and individual stock strategies to serve these clients. There are many household names among these firms, such as Bear Stearns, J.P. Morgan, Shearson Lehman, and U.S. Trust. On the retail side, Vanguard Funds has one of the better selections of indexed mutual funds available to the small investor. At Abacus, we construct portfolios using whichever index strategy exists with the highest expected rate of return (after-tax) and after costs, for each individual asset class. Most often, these are institutional index funds available only to clients of advisory firms and very wealthy investors (i.e. pension plans with \$100 million and up).

Hallmarks of a good fund or separate account strategy for an Asset Class portfolio include:

- Low expenses (0.15% - 0.60%)
- Disciplined tracking of a passive index or strategy
- Low turnover (tax-efficient)

SUMMATION

This paper has covered many topics. As you're evaluating mutual funds, money managers, or other investment alternatives, ask for their track records, and compare them to benchmark indexes. If they out-perform, make sure that your time period of measurement is long enough to be statistically significant. Then ask yourself whether that out-performance (in the past) will beget out-performance (in the future). If they under-performed, ask what their expense ratios are, see how much turnover there was in the portfolio, and calculate how much that under-performance would cost you if it continued for 10 or 20 years.

Asset Class Investing is not a new concept. It has been debated at the highest echelons of finance for decades. Its advantages are so conclusive that today, \$1 TRILLION of institutional money is passively invested in asset classes. Only 20 years ago, that number was about \$50 million. But most individual investors don't know about Asset Class Investing, because the financial press and brokerage houses don't sell magazines or earn commissions by showing you its benefits.

If the concepts presented in this paper are of interest to you, or if you would like to see more detail in any area, please contact Brent Kessel, CFP, or Jeffrey Harwood, CFP, CFA at Abacus Wealth Management, Inc., (310) 899-1080.

