

WHAT SHOULD MY OVERALL PORTFOLIO ASSET MIX BE?

I only manage portfolios of alternative ETFs. I don't manage "core" stock and bond portfolios. There are several reasons for this:

- There are many thousands of firms that manage stock and bond portfolios and the world doesn't need one more.
- There is a large and growing contingent of investors that favor stock and bond index funds for their core exposures. I think the case for indexing core exposures is compelling.
- I believe what investors need is an investment option that will diversify their stock and bond risks.
- I can best add value for investors by specializing in managing portfolios of alternative ETFs to fulfill this need.

Core stock and bond allocations are invested in index funds, typically based upon capitalization-weighted benchmark indexes, such as the S&P 500. The primary advantage is the low cost of such funds. Many institutional investors use a **core-satellite** approach to managing their overall portfolio, indexing the large core stock and bond exposures while allowing for actively-managed satellite investments in those asset classes that are deemed less efficient.

When friends and family ask me for investment advice, after reminding them that free advice is worth what you pay for it, I tell them that they should **concentrate on three things**:

1. **Asset allocation**
2. **Expenses**
3. **Taxes**

Note that historical investment performance is not on the list. It is amazing to me how investment professionals put "past performance is not an indicator of future results" (or some such) in their legal disclaimers *and then behave as if the exact opposite was true*. But the overwhelming evidence suggests that it is quite true. There is just no evidence that past performance is helpful in predicting future performance, apart from the impact of expenses (high cost funds tend to be consistently dragged down by high expense ratios and transaction costs) and a modest trend-following effect that is rather short-lived.¹ Most of the members of the investment industry ignore this inconvenient fact because they need to justify their fees.

Asset allocation is the subject of the rest of this article, so let me dispense with expenses and taxes quickly. **The easy way to minimize both expenses and taxes is to invest in index funds.**

Index funds have low expenses and low turnover, which translates into lower realized gains and a lower tax bill. If you invest in actively-managed funds, which tend to have a much higher turnover, it is probably best to do it inside of a tax-deferred vehicle, such as an IRA or 401-k.² Studies have shown that the vast majority (90% or more) of the long-term return of any overall portfolio is determined by its asset mix.³ **Asset mix decisions are the most important investment decisions you will make.**

Most of us are saving and investing for retirement (including me). Although risk tolerance levels differ widely among individuals, the mutual fund industry has tried to simplify the asset mix decision with **target date funds**. These funds assume a typical level of risk tolerance and focus on a person's time horizon until retirement. (Because your retirement assets must last for all of your life, they also must make some simplifying assumptions about life expectancy.)

The table below shows the summary-level asset mixes among the target date funds of three of the largest mutual fund companies—Vanguard, Fidelity, and Schwab:

Target Date Fund Comparisons													
Most Recent Available Data													
Category	Fund Ticker	Fund Name	U.S. Stocks	International Stocks	Total Stocks	U.S. Bonds	International Bonds	Total Bonds	Commodities	Short-term funds	Other	Total	Expense Ratio
Income													
	VTINX	Vanguard Target Retirement Income Fund	20.9	9.0	29.9	39.3	14.0	53.3		16.8		100.0	0.16
	FFFAX	Fidelity Freedom® Income Fund	17.0	7.0	24.0	46.0		46.0		30.0		100.0	0.51
	SWKRX	Schwab Monthly Incm Fnd Enhncd Payout	22.1	10.5	32.6	49.6	10.7	60.3		6.8	0.4	100.0	0.57
		Average	20.0	8.8	28.8	45.0	8.2	53.2	0.0	17.9	0.1	100.0	
Target 2010													
	VTENX	Vanguard Target Retirement 2010 Fund	27.8	12.0	39.8	35.8	12.0	47.8		12.4		100.0	0.16
	FFFCX	Fidelity Freedom® 2010 Fund	28.6	14.0	42.6	37.0	1.0	38.0	4.4	15.0		100.0	0.62
	SWBRX	Schwab Target 2010 Fund	28.4	10.6	38.9	43.1	11.4	54.5		6.0	0.6	100.0	0.55
		Average	28.3	12.2	40.4	38.6	8.1	46.8	1.5	11.1	0.2	100.0	
Target 2020													
	VTWNX	Vanguard Target Retirement 2020 Fund	43.4	18.7	62.1	30.4	7.5	37.9				100.0	0.16
	FFFDX	Fidelity Freedom® 2020 Fund	38.9	18.0	56.9	30.5	1.0	31.5	4.6	7.0		100.0	0.69
	SWCRX	Schwab Target 2020 Fund	42.3	16.3	58.6	27.8	10.5	38.3		2.4	0.7	100.0	0.67
		Average	41.5	17.7	59.2	29.6	6.3	35.9	1.5	3.1	0.2	100.0	
Target 2030													
	VTHRX	Vanguard Target Retirement 2030 Fund	54.0	23.2	77.2	18.3	4.5	22.8				100.0	0.17
	FFFEX	Fidelity Freedom® 2030 Fund	54.8	25.0	79.8	13.0	1.0	14.0	6.2			100.0	0.79
	SWDRX	Schwab Target 2030 Fund	54.2	21.0	75.1	15.3	7.4	22.8		1.4	0.7	100.0	0.75
		Average	54.3	23.1	77.4	15.5	4.3	19.9	2.1	0.5	0.2	100.0	
Target 2040													
	VFORX	Vanguard Target Retirement 2040 Fund	62.9	27.0	89.9	8.1	2.0	10.1				100.0	0.18
	FFFFX	Fidelity Freedom® 2040 Fund	55.8	26.0	81.8	10.0	1.0	11.0	7.2			100.0	0.81
	SWERX	Schwab Target 2040 Fund	62.5	24.3	86.8	6.5	4.1	10.7		1.9	0.6	100.0	0.81
		Average	60.4	25.8	86.2	8.2	2.4	10.6	2.4	0.6	0.2	100.0	
Target 2050													
	VFIFX	Vanguard Target Retirement 2050 Fund	63.0	27.0	90.0	8.0	2.0	10.0				100.0	0.18
	FFFHX	Fidelity Freedom® 2050 Fund	55.5	26.0	81.5	10.0	1.0	11.0	7.5			100.0	0.82
	SWERX	Schwab Target 2040 Fund	66.2	25.8	92.0	2.6	2.2	4.8		2.7	0.5	100.0	0.83
		Average	61.6	26.3	87.8	6.9	1.7	8.6	2.5	0.9	0.2	100.0	

There is a strong consensus among the three providers concerning the appropriate asset mix for target date funds. This may be more of a reflection of what most people are willing to buy than any sophisticated analysis. These are not necessarily the best possible asset mixes for all investors, or even for typical investors. (More on this below.)

I think that the allocations for investors near to and in retirement illustrate a couple of important points. First, note that even the funds for those well into retirement (the investors in the “Income” funds listed first above) have roughly a 30% allocation to stocks. The stock portion may help provide some growth as well as some inflation protection, though neither is certain. Also, a modest allocation to stocks may diversify bond market risk. For these reasons, **even for those in retirement, much less than 25% in stocks is too risky, not too conservative.**

Second, some people mistakenly believe that they should dramatically change their investment portfolio the moment that they retire. Note that even the target 2010 funds designed for those already nearly four years into retirement still have an average allocation to stocks of over 40%. The constant gradual shifting of assets from stocks to bonds continues smoothly through the retirement event in the target date funds. The asset mix for most target date funds doesn’t fully converge to the income funds’ asset mix until about 15-20 years *after* retirement. **Your asset mix should not change much, if at all, at the moment you retire.**

Although I believe that the more conservative target date funds (for those closest to retirement) illustrate these two valid principles, I would still recommend some pretty drastic changes to their recommended asset mixes. For one thing, note how the amount invested in stocks starts at a very high level for young investors (who would use the target date funds with later dates) and declines dramatically over time. It is not at all clear to me that the stock allocation should start so high and decline so much. In fact, **the main reason that lowering your stock allocation over time makes any economic sense at all is that your ability to make up for investment losses by working more declines over your lifetime.** Without that adjustment, your optimal asset mix would be *constant* throughout your life, affected only by the level of your accumulated wealth (more wealth enables you to take more investment risk—a factor which would normally cause your stock allocation to *increase* as you age) and your personal risk tolerance.

The rationale that the target date fund sponsors generally provide for their very high allocation to stocks for those with a long investment time horizon is an entirely different one, however. They assert that the longer you hold stocks the more the good years have chance to offset the bad years, suggesting that returns will converge on the average return over the long-term. The problem is that we don’t know what the future average return will be! The long-term past is a very poor predictor of the long-term future. **The idea that you can count on earning the historical long-term average rate of return in the stock market if you hold on long enough is a widely-held but completely discredited fallacy.**^{4,5}

Target date funds with target dates more than 25 years into the future really load up on stock market risk. For these funds, the average asset mix is more than 60% in U.S. stocks and 25% in

foreign stocks, or **85% overall in stocks. I believe that much stock market risk would be foolhardy for nearly any investor.** The first principle of asset allocation is to diversify. 85% in one asset class is not diversification; it is faith-based investing. Today's investors mistakenly believe that the long-term (post-1926) and intermediate-term (post-1981) average returns of the U.S. stock market provide a sound basis for long-term expectations going forward. They do not. As I have written in another article ([Forecasting Long-Term Returns for U.S. Stocks and Bonds](#)), "a series of unique events affected the realized returns of U.S. securities since 1926, which may not be repeated in the future." Rational expectations for U.S. stock market long-term returns are much lower today than they were in either 1926 or 1981.

Even in portfolios with much lower allocations to stocks, stock market risk looms large because stocks are so much more volatile than bonds. For example, in a 60/40 stock/bond portfolio, over 90% of the portfolio's volatility is explained by sensitivity to the stock market.⁶ **The overwhelming risk for nearly all target date funds, and indeed for most overall portfolios of all kinds, is stock market risk.** Most investors should seek to diversify the stock market risk in their portfolios, but the options for accomplishing this are limited and hard to find, and most overall portfolios are poorly diversified. (For a more complete discussion of this topic, see the article [Why Do I Need Alternative Investments?](#))

Allocations to bonds and cash help to reduce stock market risk within an overall portfolio. Cash merely dilutes this risk, but during periods when bonds have had a negative [correlation](#) to stocks (as they have in recent years, particularly U.S. Treasury bonds), bonds provide a more powerful risk-reducing effect. Cash generally provides little if any return over inflation, but bonds returns may be more attractive. On the other hand, bonds can also lose value, especially during a rising interest rate environment, which may be upon us soon.

What is an investor to do? Among the three target date fund providers, Fidelity distinguishes itself in its rather hefty allocation to commodities. I believe that this is the right general idea (seeking better diversification) implemented in the wrong way. Commodities sound like a logical diversifying investment, and most investors understand what commodities are, which helps to sell funds, but not all commodities are good investments all of the time. Commodities had performed well until a few years ago, when a flood of investor capital upset the normal dynamics of the commodities markets and made commodity futures a very poor investment.⁷

Rather than tinker a bit around the edges, as Fidelity has done, I believe that **investors should take more decisive measures to add more diversification to their overall portfolios.** The target date funds are a good start for the "core" allocations. (I generally recommend the Vanguard funds because of their use of low-cost index fund components.) However, I would lean towards the more conservative target date funds, even for those with a long time until retirement. I would also do something to fill the major holes in the asset mix of the target date funds.

Why do I think that there are “holes in the asset mix” of these funds? Because **they do not have enough real estate and other alternative asset class exposure when compared to the overall market portfolio.**

The market portfolio includes all investable capital assets worldwide. The three largest segments are stocks, bonds, and real estate, but smaller asset classes may also be included, such as commodities, hedge funds, and private equity.

Modern portfolio theory urges investors to look to “the market portfolio” as the starting point for their asset allocation. The idea is based on the assumption that the market portfolio is the most attractive return/risk portfolio available, and all investors should hold some combination of the market portfolio and cash, depending upon their risk tolerance.

Ascertaining what the market portfolio contains is harder than you might think, particularly for non-traded assets like commercial real estate. Data from many different sources must be gathered, corroborated, and organized to avoid both double-counting and missing components. The best recent work in this area can be found in a paper by Doeswijkstra, Lam, and Swinkels entitled [Strategic Asset Allocation: The Global Multi-Asset Market Portfolio 1959-2011](#) (November 2012). The table below maps their categories to the categories previously used in the table above comparing the target date funds:

Global Market Portfolio Asset Mix											
Comparisons with Target Date Fund Averages											
Source	U.S. Stocks	International Stocks	Total Stocks	U.S. Bonds	International Bonds	Total Bonds	Real Estate	Hedge Fnds & Pvt Eqty	Short-term funds	Other	Total
Doeswijkstra, Lam, and Swinkels (2012) - \$Tril.	14.5	14.5		27.5	16.2		3.7	5.3	1.8		83.5
Doeswijkstra, Lam, and Swinkels (2012) - %	17.4%	17.4%	34.7%	32.9%	19.4%	52.3%	4.4%	6.3%	2.2%		100.0%
DLS (2012) with Pru value for real estate - \$Tril.	14.5	14.5		27.5	16.2		26.6	5.3	1.8		106.4
DLS (2012) with Pru value for real estate - %	13.6%	13.6%	27.3%	25.8%	15.3%	41.1%	25.0%	5.0%	1.7%		100.0%
DLS (2012) with Pru RE and zero gov't bonds - \$Tril.	14.5	14.5		11.2	7.5		26.6	5.3	1.8		81.4
DLS (2012) with Pru RE and zero gov't bonds - %	17.8%	17.8%	35.6%	13.8%	9.2%	23.0%	32.7%	6.5%	2.2%		100.0%
Income Fund Average	20.0%	8.8%	28.8%	45.0%	8.2%	53.2%		0.0%	17.9%	0.1%	100.0%
Target 2010 Fund Average	28.3%	12.2%	40.4%	38.6%	8.1%	46.8%		1.5%	11.1%	0.2%	100.0%
Target 2020 Fund Average	41.5%	17.7%	59.2%	29.6%	6.3%	35.9%		1.5%	3.1%	0.2%	100.0%
Target 2030 Fund Average	54.3%	23.1%	77.4%	15.5%	4.3%	19.9%		2.1%	0.5%	0.2%	100.0%
Target 2040 Fund Average	60.4%	25.8%	86.2%	8.2%	2.4%	10.6%		2.4%	0.6%	0.2%	100.0%
Target 2050 Fund Average	61.6%	26.3%	87.8%	6.9%	1.7%	8.6%		2.5%	0.9%	0.2%	100.0%

Doeswijkstra, Lam and Swinkels (DLS) data does not break out U.S. stocks and bonds separately from international (non-U.S.) stocks and bonds, so I had to estimate the breakout based upon recent data, which indicates that U.S. stocks are about 50% and U.S. bonds about 65% of the global totals. (I put the DLS allocation to inflation-linked bonds under short-term funds since that is where the target date funds put them.) **When compared to the averages for the target date funds, the global market portfolio is much less U.S.-centric.** However, since most of us will need to spend dollars during retirement, that may be a good reason for U.S. investors to

maintain a “[home market bias](#).” The global market portfolio is merely one benchmark for comparison, not a panacea.

In the table above I make **two adjustments** to the DLS global market portfolio. The first has to do with their estimate of the value of **global real estate**. Their figure of \$3.7 trillion is untenably low compared to the figures provided by multiple other sources. Recent citations for the value of global commercial real estate (which excludes owner-occupied residential real estate) range from \$26.6 trillion ([Prudential Real Estate, 2012](#)) to \$31.2 trillion ([Bank for International Settlements, 2011](#)). I use the lower end of the range, which increases the estimated value of global real estate from 4.4% of the global market portfolio to 25.0%.

The second adjustment I make is to zero out the value of all **government bonds**. Admittedly this is a debatable move. My rationale is that government bonds are not capital assets, but rather, are largely a transfer of wealth from future generations to the present generation to fund current consumption. Also, the size of the government bond market is artificially inflated by the fact that both issuers (governments) and some buyers (central banks) are motivated more by politics than by economics. Particularly in the U.S., the massive growth in government deficits has been aided by central bankers willing to buy government debt at very low interest rates, removing the cost of debt service as an (admittedly weak at best) impediment to politicians’ natural spendthrift ways. Perhaps going to zero is an over-correction, but certainly some major adjustment is warranted. Note that this adjustment has nothing to do with the fact that interest rates are at or near historic lows and are likely to increase at some point, which will result in negative returns for bonds. Removing government bonds reduces the total bond allocation from 41.1% of the global market portfolio (with the higher real estate component) to 23.0%.

In financial economics, a **capital asset** is a productive asset used to generate future earnings, as opposed to assets that are used for personal enjoyment or current consumption. Classic examples of capital assets are business plant, property and equipment, but business working capital—money needed to finance material and labor—would also be included.

With these two adjustments, the total stock allocation becomes 35.6% of the global market portfolio, which is low compared to most of the target date funds. **Real estate becomes 32.7% of the portfolio**, which may seem high to most people because the investment industry is always focused on stocks and bonds.

Of course, the vast majority of the \$26.6 trillion invested in global commercial real estate is not publicly traded, and is therefore impossible to access for most investors. However, equity real estate securities, especially equity real estate investment trusts (REITs), provide a liquid and easily traded means of obtaining exposure to commercial real estate. Fortunately, funds of this sort abound, including a number of index funds and ETFs. For my clients, I use **Vanguard REIT ETF (VNQ)** for U.S. real estate and **SPDR Dow Jones Int’l Real Estate ETF (RWX)** for international real estate.

Even hedge fund and private equity exposures can be obtained through funds. For listed private equity my preferred ETF is **PowerShares Global Listed Private Equity ETF (PSP)**, although I also include ETRACS Wells Fargo BDCI ETN (BDCS) and Market Vectors BDC Income ETF (BIZD) in my universe of alternative ETFs. These funds invest primarily in business development companies. Business development companies are akin to private equity firms in that they make loans to small/startup companies at high interest rates, so the yield on these investments is high, though so too is the credit risk. The expense ratios for these ETFs are dramatically overstated because of poorly-conceived SEC requirements, so don't let that scare you off. (See [this article](#) for an excellent analysis by Morningstar.)

A number of mutual funds and ETFs provide various kinds of hedge fund exposure. I use the **IQ Hedge Multi-Strategy Tracker ETF (QAI)** for my clients. It is a "hedge fund index replication fund," which means that it uses statistics to select various assets (mostly other ETFs) that will closely mimic the risks and returns of a broad index of hedge funds. In addition to being one of the roughly 130 alternative ETFs in my universe, I also use this fund as a benchmark against which to compare the performance of my alternative ETF portfolios.

If allocating 32.7% to real estate alone seems a bit extreme, another approach would be to sum the three DLS alternative-type asset class allocations and spread them among a wide variety of alternative investments:

32.7%	Real estate
6.5%	Private equity and hedge funds
<u>2.2%</u>	<u>Inflation-linked bonds</u>
41.4%	Alternatives

A 41.4% allocation to alternative assets may sound high to you. Even using the much lower original DLS estimate of global real estate value (\$3.7 trillion) results in a global market portfolio allocation to alternatives of 17%. In an article entitled [How Much Should I Allocate to Alternatives?](#), I suggested using 17% as the low end of an alternatives allocation range of up to 60% (the best return/risk allocation since 1999). How much you allocate mostly depends upon your risk tolerance and your outlook for the risks and returns of the core stock and bond asset classes. (By the way, alternatives *sound* risky to some people, but they generally have a risk level somewhere between stocks and bonds, and may *lower* the risk of a portfolio if they have a low [correlation](#) to stocks and bonds.)

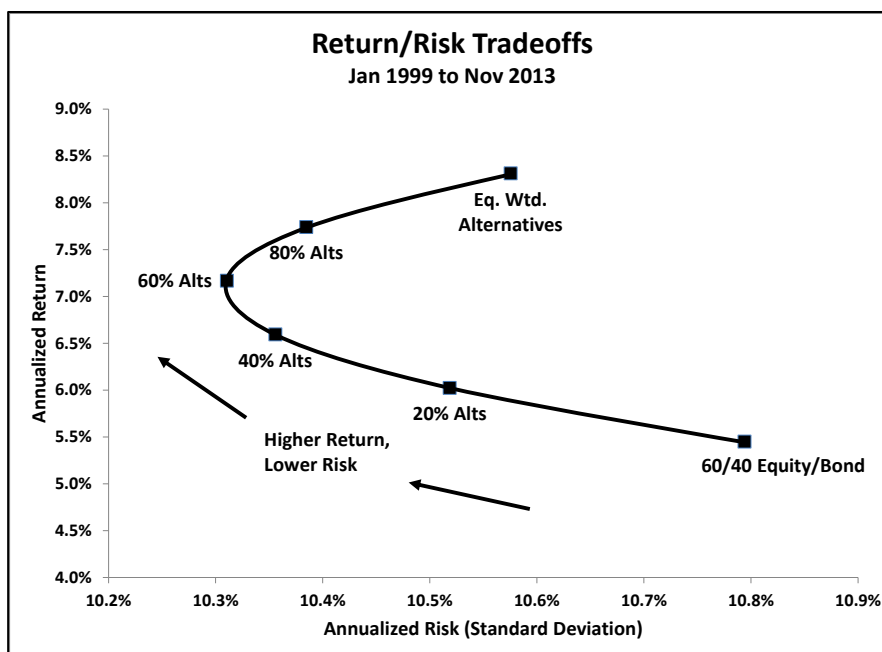
The objectives for your allocation to alternatives should be 1) to achieve an attractive return and 2) to diversify the stock and bond risk of your "core" allocations. That is no small feat. **Many alternative strategies are now available in various mutual funds and ETFs, and if carefully selected at the right time and in the right amounts, these strategies may have an ability to fulfill these objectives.** Such strategies include commodities, currencies, long/short equities, merger arbitrage equities, bank loan bonds, convertible bonds, high yield bonds, TIPS bonds, frontier market equities, VIX-linked notes, and market neutral equities, to name but a few.

Above I mentioned that an allocation of 60% to alternatives was the best return/risk allocation since 1999. I'd like to explain that and illustrate what a "core-satellite" approach to managing your overall portfolio might look like. In the table below, I start with a "core" of 60% global equities and 40% global bonds. The "satellite" portfolio is an equal-weighted composition of seven alternative asset classes that are nearly or completely missing from most "core" capitalization-weighted stock and bond indexes. These also happen to be the seven alternative asset classes that Doeswijk, Lam, and Swinkels (DLS) included in their study:

I selected indexes that I thought best represented the asset classes, requiring that each index be publicly traded and priced daily. Next, I calculated the returns and risks of various portfolios over the period 12/31/1998 to 11/30/2013, holding constant the 60/40 "core" portfolio as well as the equally-weighted alternative "satellite" portfolio.⁸

Core-Satellite Portfolio			
Weight	Asset Class	Asset Class	Index Name
Core			
60.0%	Global Equities	Global Equities	MSCI AC World Daily TR Net USD
40.0%	Global Bonds	Global Bonds	Barclays GlobalAgg Total Retur
100.0%			
Satellite			
14.3%	Global Real Estate	Global Real Estate	EPRA/NAREIT Dev TR USD
14.3%	Listed Private Equity	Listed Private Equity	S&P Listed Private Equity Inde
14.3%	Emerging Market Debt	Emerging Market Debt	S&P/Citigroup International Tr
14.3%	Hedge Funds	Hedge Funds	HFRX Global Hedge Fund Index
14.3%	Inflation-Linked Bonds	Inflation-Linked Bonds	Barclays Global Inflation-Link
14.3%	High-Yield Bonds	High-Yield Bonds	Barclays Global High Yield Tot
14.3%	Commodities	Commodities	DJUBS Commodity TR
100.0%			

The graph at right illustrates the results. An allocation of 60% to the satellite alternatives portfolio both increased the return and decreased the risk (standard deviation) of the overall portfolio relative to the basic 60/40 stock/bond portfolio.



These results are for one particular time period, and specific events within this time period may not be repeated. Stocks suffered two terrible downturns, first the internet/telecom bubble, and then the real estate debacle/great recession. This was an

unusually good period for bonds, particularly government bonds. **Historical data can be instructive, but should never be taken as determinative.**

Let me close by recapping my primary recommendations:

1. **Use index funds for your core stock and bond allocations**
2. **Own your least tax-efficient investments in your IRA or 401-k**
3. **Your stock allocation should always be at least 25%, even in retirement**
4. **Beware of becoming mesmerized by historical stock market average returns**
5. **Long-horizon target date fund stock allocations of 85% are too high**
6. **Your stock allocation should decline over your lifetime**
7. **Allocate at least 25% to alternatives, including real estate securities**

Of course, if all of this seems a bit overwhelming, you could just give me a call...

Kevin Means, CFA
Principal
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December 3, 2013

Endnotes

¹ Mark M. Carhart, "[On Persistence in Mutual Fund Performance](#)", *Journal of Finance*, Volume 52, Issue 1 (Mar., 1997), 57-82.

² http://www.bogleheads.org/wiki/Principles_of_tax-efficient_fund_placement

³ <https://personal.vanguard.com/pdf/s324.pdf>

⁴ Paul A. Samuelson, "[The judgment of economic science on rational portfolio management: Indexing, timing, and long-horizon effects](#)", *The Journal of Portfolio Management*, Fall 1989, Vol. 16, No. 1: pp. 4-12.

⁵ Zvi Bodie, "[On the Risk of Stocks in the Long Run](#)", *Financial Analysts Journal*, May-June 1995, pages 18-22.

⁶ http://en.wikipedia.org/wiki/Risk_parity

⁷ Jensen and Mercer, "[Commodities as an Investment](#)", *The Research Foundation of CFA Institute Literature Review*, September 2011, Vol. 6, No. 2.

⁸ For the satellite portfolio, two of the component indexes were not available back to December 31, 1998. The S&P/Citigroup Emerging Market Bond Index began in May 2001, and the S&P Listed Private Equity Index began in December 2003. For months with missing component returns, the satellite portfolio return was the equal-weighted return of the components with data.

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