

# Fine tuning your asset allocation: 2010 Update

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*Perhaps the biggest job that any investor has is managing risk. If you take too much, you could be flirting with disaster; if you take too little, you could cheat yourself out of the returns you need to take care of yourself, your family and your heirs. In this article, updated to include results from 2009, Paul Merriman shows how to get this important equation right.*

One of the most fundamental decisions faced by every investor is how to allocate a portfolio between equity funds and bond funds. Some investors prefer a total equity portfolio for its superior long-term growth prospects. Others invest exclusively in fixed-income instruments, preferring to completely avoid the risks of the stock market. But most people in my experience are more comfortable somewhere in between those two extremes.

Yet the question remains: Just how far should you go in one direction or the other? That's what this article is all about.

At the heart of this presentation is a big table of numbers that shows year-by-year hypothetical returns for 11 combinations of investment assets from 1970 through 2009. The most useful part of the table is at the bottom, where we present the worst-case periods an investor would have experienced in each of those combinations or portfolios.

These unpleasant numbers are useful because they show the bad times that you must be prepared for – and through which you must persevere – if you hope to reap long-term returns like those shown in the table.

## The effect of 2008

I'll walk you through the table, which can be found on page 7 of this article, and show you how to use it. But first I want to say a few things about 2008 and early 2009.

Until 2008, the worst-case scenarios shown in this table came from the bear markets of 1973-74 and 2000-2002. Now, most of the worst periods involve 2008 and early 2009. The U.S. stock market, measured by the Standard & Poor's 500 Index, suffered a decline of 37 percent in 2008, the worst calendar year since 1931 (when it lost 43.3 percent).

In fact, the long-term return of every portfolio in the table with more than 20 percent equity was reduced by the losses of 2008 and early 2009. I think the table is now a more realistic guide to what investors may reasonably expect.

Arguably, the most important job for any investor is to control the risk of his or her portfolio. And

You must be prepared and persevere if you hope to reap long-term returns.

the single most effective way to do that is by allocating the right percentage of assets to equities (stocks) and the right percentage to fixed-income investments (bonds). The table in this article is the best tool I know of for doing that.

Whether you have your portfolio entirely invested in equity funds or only 10 percent in equity funds, we recommend that the equity part of your portfolio be well diversified to include U.S. and international stocks, large-cap stocks and small-cap stocks, value stocks and growth stocks. You'll find our recommendations and the reasons for them in an article called "[The ultimate buy-and-hold strategy](#)."

That wide diversification gives investors excellent representation in all the major markets. It's also very easy to understand. No matter what major asset class is performing the best at any given time, such a portfolio will own it.

Now let's focus on the critical question this article addresses.

### How much in equities?

One very simple approach is to split all investments equally between stocks and bonds in what we call a 50/50 portfolio, which historically has an excellent record of producing a decent return with much less risk than the Standard & Poor's 500 Index.

Of course not everybody wants to split things 50/50, and there is a wide range of other possibilities. You will see some examples in the large table of performance figures. The table shows the results of 40 years of buy-and-hold investments allocated between stocks and bonds in 10 percent increments, from 100 percent bonds (on the left) to 100 percent stocks (on the right). In the final

column, you'll see the annual performance of the S&P 500 Index, a standard equity benchmark that's widely used to evaluate performance.

At first glance, this table may look daunting, but it's not so bad. The annual performance figures are for readers who like lots of data to back up the conclusions they are being asked to accept. Each of those numbers represents a return that investors got, or would have gotten, in a particular year using a specific allocation strategy (after deducting an assumed annual investment advisory fee of 1 percent in all cases except the S&P 500 Index).

For purposes of this discussion, I'll focus on the figures at the bottom of each column that summarize the 40-year results of each strategy. For details on the asset classes and the research behind how we put them together, see "[The ultimate buy-and-hold strategy](#)."

In that article, we focus on a portfolio with 60 percent of assets in equities and the other 40 percent in fixed-income. You'll see the results of this allocation in the column in the large table here that's marked "60% Equity."

If you trace the numbers in that column down from the top, you'll see the year-by-year performance of the 60/40 strategy from 1970 (a gain of 2.9 percent) through 2009 (a gain of 22.6 percent). Continuing downward, you'll see that this strategy produced a compound rate of return of 10.5 percent; its standard deviation, a measure of volatility, was 9.5 percent. (The key thing about this statistic is that lower numbers mean lower volatility.)

To put that 9.5 percent figure in context, scan over to the far right-hand column and you'll see that

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the S&P 500 Index had a standard deviation of 15.6 percent. This means that the 60/40 split of stocks and bonds carried approximately 61 percent of the volatility of the U.S. stock market as measured by the index.

While you're at it, put one finger on the "Annual Return" line (this is a compound rate of return) of the 60/40 column and another finger on the same line of the Standard & Poor's 500 Index column. You'll see that the Ultimate Buy-and-Hold Strategy 60/40 combo had better long-term performance than that index while keeping 40 percent of the portfolio in fixed-income securities that were not exposed to the risk of the stock market.

### The best of times, the worst of times

If you're with me so far, you know how to read this table, and you've probably scanned a few of the other columns as well. But before we go on, look at the bottom of each column where you can see, in percentage terms, the biggest losses you would have sustained for each allocation. These are the worst month plus the worst one-year and five-year periods. Note that these are not calendar

You must be able to tolerate losses in order to stick with your strategy.

years. For these lines in this table, any "worst" period could start at the beginning of any month. These figures are useful because they show the losses you must be able to tolerate in order to stick with your strategy. This is a lesson many investors learned the hard way in 2008 because they had invested too aggressively, then bailed out.

Risk and losses are not pleasant topics. But you will be far better off if you spend some time with

them instead of concentrating on the fabulous returns you hope to achieve. In real life, you'll never get those returns if you don't stick with the program you select. And you won't stick with the program if you bail out when normal market fluctuations push you out of your comfort zone and prompt you to sell your holdings when you have sustained significant losses and things look bleak.

Think about how much you are really willing to lose.

The reason we pay so much attention to measuring and managing risks is that this is exactly where so many investors get tripped up. Spend some time thinking about how much of your portfolio you are really willing to lose in a month or a year. Run your fingers back and forth on those bottom lines and search for a combination of losses you think you could tolerate.

In fact, that's what this article, including the table, is all about: helping you find the column, and hence the asset allocation, that's right for you. It's trickier than you might think, because it requires a difficult balance between risk and return.

### What this table tells me

Whenever I study an updated version of this table, I am very interested in the difference between the 100 percent equity portfolio and the Standard & Poor's 500 Index. If you're looking for high long-term returns from equities, you can see that the diversified all-equity portfolio was clearly superior to the S&P 500, with a 25 percent improvement in compound rate of return (12.4 percent vs. 9.9 percent).

That difference is much greater than it might seem, because we are talking about a long period

of years. Over 30 years, an investment of \$1,000 would grow to \$32,342 at the 12.4 return, vs. only \$16,980 at 9.9 percent.

I think those two columns provide dramatic evidence of the value in diversifying with non-correlated asset classes. The all-equity diversified portfolio combines multiple asset classes, every one of which by itself had a higher standard deviation than the S&P 500. Yet when you combine them, in many periods their returns offset each other to produce a lower composite standard deviation.

If you are looking only for the highest performance on this table, you've found it in the all-equity diversified portfolio. But the risks of that strategy are very substantial. They include a worst-calendar-year loss of 41.6 percent in 2008 and a worst-12-months loss of 51.1 percent (March 2008 through February 2009). There was also a one-month loss of 23.4 percent! Not many investors can be sure they'll keep their cool in the face of losses like that.

A long-term compound return of 11.8 percent may be more than you need to meet your goals. Based on many years of talking to clients and polling people who attend workshops, I have concluded that most retired people can meet their needs with a long-term return of 8 to 10 percent, compounded annually.

### Several good options

The good news is that our table includes several combinations with returns in that range and relatively low risks. I think the 30 percent to 50 percent equity portfolios are worth considering for conservative investors.

Now here's something interesting: Note that the 40 percent equity portfolio had a compound annual return of 9.4 percent along with a maximum calendar-year loss of 14.8 percent. This portfolio's

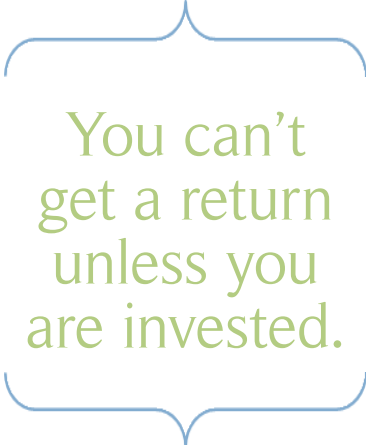
second-worst calendar year was a loss of 7.1 percent in 1974, which came on the heels of a 5.9 percent loss in 1973. That two-year cumulative loss (1973 and 1974) was 12.6 percent, in the same ballpark as the one-year loss of 2008.

This table is more than an academic look at market history. You can make it a useful tool for you individually. Here's how: Start by writing down two numbers: the target long-term return that you need and the largest 12-month loss you are willing to tolerate. Then start with one of those figures and scan the table to find an allocation that gives you the combination you need. It's highly unlikely that a single column will be immediately obvious as the right one. And that of course is the problem.

### The return you want vs. the return you need

Investors often tell me they want the highest possible returns. But when I suggest that they put all their money in pork belly futures contracts or

bet their life savings on Google stock, they quickly change their tunes. Still, if you are like most people you want as much as you can get. The critical point here is that you can't get a return unless you are invested



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in the portfolio that produces it. If you are scared off the playing field and onto the sidelines because of inappropriately high risks, you won't be in the game, so to speak.

My advice is to start with the all-equity column and work your way to the left until you find a column where you can tolerate every risk item, including the worst one-month, 12-month and 60-month periods. When you find that column, you have an idea what percentage of equity allocation could be right for you.

Some risk-averse investors won't want to tolerate the bad times associated with the allocation that will give them the returns they need. If you really need at least an 11 percent return, for example, you may still find the risks of the 70 percent equity portfolio too high.

What should you do if you need the returns from a column that has too much risk? Your first impulse might be to go for the high return and ignore your discomfort in regard to the risk. But I think that could be a big mistake. If your needs

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straddle two columns, choose the one that has the right level of comfort and risk for you.

There are two main reasons for this. First, remember that the figures in the table are not predic-

tions of the future, only hypothetical results from the past. And the past is a more reliable indicator of risk than it is of returns. For any given combination of assets, the pattern of volatility is likely to be more predictable than the pattern of return.

I believe the long-term returns from 1970 through 2009 are reasonable to expect in the future. Here's one example: In the 44 years from 1926 through 1969, the S&P 500 Index had a compound rate of return of 9.8 percent. From 1970 through 2009, the compound return of the index was 9.9 percent, almost identical to its 1926-1969 "normal" performance.

Second, it is never acceptable or advisable to manage a portfolio in violation of your risk tolerance. Year after year, decade after decade, we see people who learn that lesson the hard way, making it an extremely expensive lesson. They are typically

the ones who bail out of their investments near the bottom of a market cycle. They become bitter and cynical about investing. Worse, they often stay out of the markets for many years, sometimes even permanently, for fear of being burned again.

### Putting this all together

If there is only one lesson you take from this article, I hope it is this: Never ignore your emotions or your "better judgment" in order to chase higher returns. It's just not worth it. When we talk to clients who need or want higher returns than their emotions are likely to tolerate, we spell out a few options, which of course they already know about.

We often recommend that investors settle for lower returns in order to reduce their risks. If you do that while you're still working, you might have to work longer or save more each year before you retire. But that is much better than retiring with too little money. If you are already retired, accepting lower returns might mean you will have less money to spend. But that is far better than suffering losses that put you in danger of running out of money.

You may be able to increase your tolerance for risk with education. But for most of us, risk tolerance or risk aversion

is part of who we are and not subject to much change. So unless you are certain that you are comfortable with higher risk, don't chase high returns at the expense of being able to sleep well.

For most people, finding the proper balance between risk and return can be quite challenging. Most investors need the help of a professional ad-

Don't chase high returns at the expense of being able to sleep well.

visor to navigate these waters, and in fact this is one of the best reasons I can think of to have an advisor.

Your advisor should be giving you guidance on finding the proper amount of risk in your portfolio. If you're not getting that guidance, you should ask for it. If you're not satisfied with the answers you get, we can help. Want a second opinion? We'll provide it. Looking for an advisor who's committed to working with you on this issue? We have them.

Finding the right ratio of risks and rewards is one of the most important things an investor can do – perhaps more important than anything else. I hope you will take that step. For a free consultation with one of our advisors, [click here](#).

## Disclosure

This document contains hypothetical results. Although we have done our best to present this information fairly, hypothetical performance is still potentially misleading. Hypothetical data does not represent actual performance and should not be interpreted as an indication of actual performance. This data is based on transactions that were not made. Instead, the trades were simulated, based on knowledge that was available only after the fact and thus with the benefit of hindsight. Results do not include the impact of taxes, if any. Past returns are not indicative of future results.

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**Fine tuning your asset allocation: hypothetical returns of balanced asset class portfolios (1970-2009)**

Equity portion is 50% US/50% International. One percent management fee included.

	Fixed Income	10% Equity	20% Equity	30% Equity	40% Equity	50% Equity	60% Equity	70% Equity	80% Equity	90% Equity	100% Equity	S&P 500 Index W/Divs
1970	13.6	11.8	10.0	8.2	6.4	4.7	2.9	1.1	(0.6)	(2.4)	(4.1)	4.0
1971	6.6	8.8	11.0	13.2	15.4	17.7	20.0	22.3	24.6	27.0	29.3	14.3
1972	3.7	5.9	8.1	10.4	12.8	15.1	17.5	20.0	22.4	25.0	27.5	19.0
1973	3.0	0.8	(1.5)	(3.7)	(5.9)	(8.1)	(10.3)	(12.4)	(14.5)	(16.6)	(18.7)	(14.7)
1974	6.0	2.6	(0.7)	(4.0)	(7.1)	(10.2)	(13.2)	(16.1)	(19.0)	(21.8)	(24.5)	(26.5)
1975	6.9	10.5	14.2	18.0	21.8	25.7	29.6	33.6	37.7	41.8	45.9	37.2
1976	9.2	10.7	12.1	13.5	14.9	16.3	17.6	19.0	20.3	21.6	22.9	23.8
1977	2.0	4.2	6.6	8.9	11.3	13.8	16.3	18.8	21.4	24.1	26.7	(7.2)
1978	1.1	3.8	6.6	9.4	12.3	15.3	18.3	21.4	24.5	27.7	31.0	6.6
1979	4.9	5.9	6.8	7.7	8.7	9.6	10.5	11.4	12.3	13.2	14.1	18.4
1980	5.0	7.2	9.4	11.6	13.8	16.0	18.2	20.4	22.6	24.8	27.0	32.4
1981	8.5	7.9	7.3	6.7	6.1	5.4	4.7	4.1	3.4	2.7	2.0	(4.9)
1982	24.3	23.1	21.9	20.7	19.5	18.3	17.1	15.8	14.6	13.4	12.1	21.4
1983	6.6	8.8	11.1	13.4	15.8	18.2	20.6	23.1	25.6	28.2	30.8	22.5
1984	13.0	12.4	11.8	11.2	10.5	9.9	9.2	8.6	7.9	7.2	6.5	6.3
1985	17.1	19.3	21.5	23.7	26.0	28.3	30.6	33.0	35.4	37.9	40.3	32.2
1986	12.5	14.6	16.8	18.9	21.1	23.3	25.6	27.9	30.2	32.5	34.8	18.5
1987	2.0	3.8	5.5	7.2	8.8	10.4	11.9	13.4	14.8	16.1	17.3	5.2
1988	5.5	7.4	9.3	11.3	13.3	15.3	17.3	19.4	21.5	23.6	25.7	16.8
1989	12.1	13.2	14.3	15.3	16.4	17.4	18.5	19.5	20.5	21.6	22.6	31.5
1990	8.3	5.9	3.5	1.2	(1.1)	(3.4)	(5.7)	(7.9)	(10.1)	(12.3)	(14.4)	(3.1)
1991	14.2	15.6	17.0	18.4	19.7	21.1	22.5	23.9	25.2	26.6	27.9	30.5
1992	6.3	6.0	5.8	5.5	5.3	5.0	4.7	4.4	4.1	3.8	3.5	7.6
1993	8.9	10.8	12.6	14.5	16.4	18.4	20.3	22.3	24.3	26.3	28.3	10.1
1994	(4.4)	(3.8)	(3.1)	(2.4)	(1.8)	(1.1)	(0.4)	0.2	0.9	1.5	2.2	1.3
1995	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.7	15.7	15.7	15.6	37.6
1996	2.0	3.1	4.2	5.3	6.4	7.5	8.6	9.7	10.8	11.9	13.0	23.0
1997	6.2	6.1	6.1	6.0	5.9	5.7	5.6	5.5	5.3	5.2	5.0	33.4
1998	7.1	7.0	6.8	6.6	6.4	6.0	5.6	5.2	4.7	4.2	3.6	28.6
1999	(1.8)	0.3	2.5	4.7	7.0	9.2	11.5	13.9	16.2	18.6	21.1	21.0
2000	10.9	9.5	8.1	6.7	5.3	3.9	2.6	1.2	(0.1)	(1.5)	(2.8)	(9.1)
2001	6.9	6.2	5.4	4.6	3.7	2.9	1.9	1.0	0.0	(1.0)	(2.0)	(11.9)
2002	12.1	10.1	8.0	5.9	3.9	1.8	(0.3)	(2.3)	(4.4)	(6.5)	(8.5)	(22.1)
2003	2.5	6.5	10.6	14.8	19.2	23.6	28.2	33.0	37.8	42.8	48.0	28.7
2004	3.1	5.0	7.0	9.1	11.1	13.2	15.3	17.4	19.5	21.7	23.9	10.9
2005	0.9	2.1	3.3	4.5	5.8	7.0	8.3	9.5	10.7	12.0	13.2	4.9
2006	2.0	4.1	6.2	8.3	10.5	12.7	14.9	17.1	19.4	21.7	24.0	15.8
2007	8.4	7.9	7.3	6.7	6.1	5.4	4.8	4.1	3.4	2.7	2.0	5.5
2008	7.1	1.3	(4.3)	(9.7)	(14.8)	(19.8)	(24.5)	(29.1)	(33.4)	(37.6)	(41.6)	(37.0)
2009	1.2	4.7	8.3	11.8	15.4	19.0	22.6	26.1	29.7	33.3	36.9	26.5
<b>Annualized Return</b>	6.9	7.5	8.2	8.8	9.4	9.9	10.5	11.0	11.5	11.9	12.4	9.9
<b>Standard Deviation</b>	4.6	4.6	5.1	5.9	6.9	8.2	9.5	10.8	12.2	13.7	15.1	15.6
<b>Worst Month</b>	(4.8)	(4.5)	(6.5)	(8.6)	(10.7)	(12.8)	(14.9)	(17.1)	(19.2)	(21.3)	(23.4)	(21.5)
<b>Worst 12 Months</b>	(4.8)	(5.3)	(11.6)	(17.5)	(23.1)	(28.5)	(33.5)	(38.3)	(42.8)	(47.1)	(51.1)	(43.3)
<b>Worst 60 Months</b>	14.1	14.3	10.1	5.9	1.6	(2.7)	(7.0)	(11.3)	(15.5)	(19.7)	(23.9)	(29.1)
<b>Recovery Time from Worst Drawdown* (Years)</b>	0.8	1.3	1.6	1.6	Not Yet	Not Yet	Not Yet	Not Yet	Not Yet	Not Yet	Not Yet	Not Yet
<b>Appreciation needed to reach October '07 peak</b>	-	-	-	-	3.6%	8.0%	12.8%	18.1%	23.9%	30.3%	37.3%	31.9%

\* October 2007 was the peak for portfolios not yet recovered

## Data sources:

The following data sources were used to develop the tables and figures in this workshop. Note that many of our return series rely on academic simulations gathered and developed by Dimensional Fund Advisors (DFA). All performance data are total returns including interest and dividends. Simulated data subtracts the current expense ratio for the comparable fund, except for the S&P 500 Index.

## Equities:

Emerging Markets	DFEMX to May 1994, DFA simulation back to Jan 1987.
Emerging Market Core	DFCEX from May 2005.
Emerging Market Small Cap	DEMSX back to 1999, DFA simulation back to Jan. 1987.
Emerging Market Value	DFEVX back to 1999, DFA simulation back to Jan. 1987.
International Large Cap	DFALX back to 1992, MSCI EAFE back to 1970.
International Large Cap Value	DFIVX back to Mar 1994, DFA simulation back to 1975.
International Small Cap	DFISX back to Oct. 1996, DFA simulation back to 1970.
International Small Value	DISVX back to 1995.
Large Cap	DFLCX back to 1991, S&P 500 back to 1970.
Large Value	DFLVX back to 1994, DFA simulation back to 1970.
Micro Cap (or Small Cap)	DFSCX back to 1983, Dimensional US Micro Cap Index to 1970.
Real Estate Investment Trusts	DFREX back to Jan. 1993, Don Keim REIT Index 1975-1992, NAREIT 1972-1974.
S&P 500	S&P 500 Index, provided by Standard & Poor's Index Services Group, through DFA.
Small Value	DFSVX back to 1994, DFA simulation back to 1970.

## Bonds:

Barclays U.S. TIPs	Back to March 1997 to June 2000, Morningstar.
DFA TIPs	DIPSX starting January 2007.
DFA Intermediate Government Bonds	DFIGX, Morningstar.
Vanguard Short-Term Treasuries	VFISX, Morningstar.
Vanguard Intermediate-Term Treasuries	VFITX, Morningstar.
Vanguard Inflation Protected Securities	VIPSX, Morningstar from July 2000 to December 2006.

## Details:

- Monthly rebalancing
- 1% management fee included
- Fixed Income Allocation: 50% in Intermediate-Term Government, 30% in Short-Term Treasuries and 20% in TIPs
- U.S. Equity Allocation: 20% each in LC, LCV, SC, SCV, and REITs
- International Equity Allocation is:
  - 1970-1974: 50% Int. LC, 50% Int. SC
  - 1975-1986: 25% Int. LC, 25% Int. LCV, 50% Int. SC
  - 1987-1994: 20% Int. LC, 20% Int. LCV, 10% EM, 5% EMS, 5% EMV, 40% Int. SC
  - 1995-2005: 20% Int. LC, 20% Int. LCV, 10% EM, 5% EMS, 5% EMV, 20% Int. SC, 20% Int. SCV
  - 2006 - 2009: 20% each in Int. LC, Int. LCV, Int. SC, Int. SCV, and EM Core
- Bond Allocation is:
  - 1970 - February 1997: 30% Short-Term Treasury, 70% Intermediate-Term Government
  - March 1997 – 2009: 30% Short-Term Treasury, 50% Intermediate-Term Government, 20% TIPs.