

## Fine tuning your asset allocation: 2012 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 2011, 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 stock and bond funds. Some investors prefer a total stock portfolio for its superior long-term growth prospects. Others invest exclusively in bond instruments, preferring to completely avoid the risks of the stock market. But most people seem to be 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 table that shows year-by-year hypothetical returns for 11 combinations of investment assets from 1970 through 2011. 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% in 2008, the worst calendar year since 1931 (when it lost 43.3%).

In fact, the long-term return of every portfolio in the table with more than 20% stock 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 the

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single most effective way to do that is by allocating the right percentage of assets to stocks and the right percentage to bonds. The table in this article is an excellent tool for doing that.

Whether you have your portfolio entirely invested in stocks or only 10% in stocks, we recommend that the stock 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 stocks?

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 table of performance figures. The table shows the results of 42 years of buy-and-hold investments allocated between stocks and bonds in 10% increments, from 100% bonds (on the left) to 100% stocks (on the right). In the final column, you'll see the annual performance of the S&P 500 Index, a

standard stock 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% 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 42-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% of assets in stocks and the other 40% in bonds. You'll see the results of this allocation in the column in the large table here that's marked "60% Stock."

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%) through 2011 (a loss of 2.8%). Continuing downward, you'll see that this strategy produced a compound rate of return of 10.2%; its standard deviation, a measure of volatility, was 9.6%. (The key thing about this statistic is that lower numbers mean lower volatility.)

To put that 9.6% figure in context, scan over to the far right-hand column and you'll see that the S&P 500 Index had a standard deviation of 15.7%. This means that the 60/40 split of stocks and bonds carried approximately 61% of the volatility of the U.S.

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stock market as measured by the index.

While you're at it, put one finger on the "Annualized 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% of the portfolio in bond 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 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.

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

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.

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.

Think about how much you are really willing to lose.

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% stock portfolio and the Standard & Poor's 500 Index. If you're looking for high long-term returns from stocks, you can see that the diversified all-stock portfolio was clearly superior to the S&P 500, with a 22% improvement in compound rate of return (12% vs. 9.8%).

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 \$29,960 at the 12% return, vs. only \$16,522 at 9.8%.

I think those two columns provide dramatic



evidence of the value in diversifying with lesser-correlated asset classes. The all-stock 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-stock diversified portfolio. But the risks of that strategy are very substantial. They include a worst-calendar-year loss of 41.6% in 2008 and a worst-12-months loss of 51.1% (March 2008 through February 2009). There was also a one-month loss of 23.4%! Not many investors can be sure they'll keep their cool in the face of losses like that.

A long-term compound return of 12.0% may be more than you need to meet your goals. Based on many years of working with clients, we have concluded that most retired people can meet their needs with a long-term return of 8 to 10%, 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% to 60% stock portfolios are worth considering for conservative investors.

Now here's something interesting: Note that the 40% stock portfolio had a compound annual return of 9.2% along with a maximum calendar-year loss of 14.8%. This portfolio's second-worst calendar year was a loss of 7.1% in 1974, which came on the heels of a 5.9% loss in 1973. That two-year cumulative loss (1973 and 1974) was 12.6%, in the same ballpark as the one-year loss of 2008.

This table is more than an academic look at mar-

ket 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 think they want the highest possible returns. But the portfolio with the highest potential return could have an unacceptably high level of risk. 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 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.

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My advice is to start with the all-stock 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 stock 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% return, for example, you may still find the risks of the 80% stock 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 that could be a big mistake. If your needs 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 predictions 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 combina-

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tion 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 2011 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%. From 1970 through 2011, the compound return of the index was 9.8%, 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 emo-

tions 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 advisor 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

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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 (1970-2011)

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

	100% Bonds	10% Stocks	20% Stocks	30% Stocks	40% Stocks	50% Stocks	60% Stocks	70% Stocks	80% Stocks	90% Stocks	100% Stocks	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
2010	4.6	6.3	8.0	9.6	11.3	12.8	14.4	15.9	17.3	18.8	20.1	15.1
2011	7.2	5.6	3.9	2.3	0.6	(1.1)	(2.8)	(4.5)	(6.2)	(7.9)	(9.7)	2.1
Annualized Return	6.8	7.5	8.1	8.6	9.2	9.7	10.2	10.7	11.2	11.6	12.0	9.8
Standard Deviation	4.6	4.5	5.0	5.9	7.0	8.3	9.6	11.0	12.5	14.0	15.5	15.7
Worst Month	(4.8)	(4.5)	(6.5)	(8.6)	(10.7)	(12.8)	(14.9)	(17.1)	(19.2)	(21.3)	(23.4)	(21.5)
Worst 12 Months	(4.8)	(5.3)	(11.6)	(17.5)	(23.1)	(28.5)	(33.5)	(38.3)	(42.8)	(47.1)	(51.1)	(43.3)
Worst 60 Months	14.1	14.3	10.1	5.9	1.6	(2.7)	(7.0)	(11.3)	(15.5)	(19.7)	(23.9)	(29.1)



## 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.

## Stocks:

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	DFUSX starting 5/2010, DFLCX from 1/1991 - 4/2010, S&P 500 from 1970 - 1990.
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:

TIPs	DIPSX starting January 2007, VIPSX from July 2000 to December 2006, Barclays U.S. TIPs from March 1997 to June 2000.
Intermediate Government Bonds	DFIGX back to November 1990, Lehman Government Bond Index from January 1973 to October 1990, 5-year Treasury notes from January 1970 to December 1972.
Short-Term Treasuries	VFISX starting November 1991, Vanguard Short-Term Federal VSGBX from January 1988 to October 1991, Merrill Lynch 1-3 year Treasury from July 1977 to December 1987, One Year U.S. Treasury Note from January 1970 to June 1977.

## Details:

- Monthly rebalancing
- 1% management fee included
- Bond Allocation: 50% in Intermediate-Term Government, 30% in Short-Term Treasuries and 20% in TIPs
- U.S. Stock Allocation: 20% each in LC, LCV, SC, SCV, and REITs
- International Stock 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 - 2011: 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 – 2011: 30% Short-Term Treasury, 50% Intermediate-Term Government, 20% TIPs.