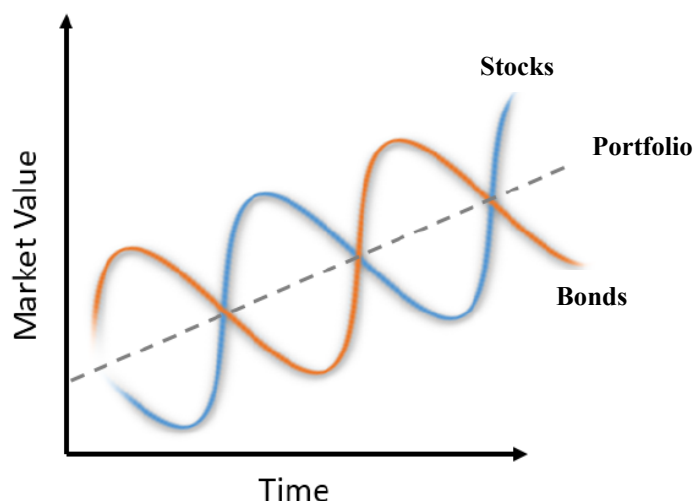


In a broad sense, **asset allocation** is defined as the distribution of investment dollars among differing investment vehicles such as stocks, bonds, real estate, commodities, cash etc. The goal is to optimize the mix of portfolio holdings such that the risk and return characteristics are in line with the investor's financial goals, time horizon and risk tolerance.

Each asset class has a different level of risk and return. They also have returns that exhibit some type of **correlation** (how returns move together), be it positive or negative, relative to other asset classes. These correlations are important because a portfolio with high positive correlation can compound both positive and negative returns. In order to limit the effect of compounding negative returns we use a tool called **diversification**, an essential component of any well thought out investment strategy.



The chart on the left illustrates a simple example of correlation using a two asset portfolio – Stocks and Bonds. While the blue line shows the change in market value of stocks over time, the red line shows the change in market value of bonds. What this chart is saying is that because these two types of assets exhibit negative correlation, as stocks and bonds typically do, losses from one asset are at least partially offset from the gains in the other asset. The end result is the dashed line, representing the overall change in market value of the portfolio.

To illustrate the risk/return benefits of asset allocation and diversification we will consider a simple example using four main asset classes shown below. The first asset class is the S&P 500 (which consists of large cap stocks in the U.S.), second is the Barclay's Aggregate Bond Index (made up of U.S. investment grade fixed income), third is the MSCI EAFE Index (an index that contains large and mid-cap companies of developed nations other than the US). Lastly, we include the MSCI Emerging Markets Index (comprised of companies domiciled in emerging market nations).

The table to the right also shows the annualized return and **standard deviation** data since 1976. We typically measure risk using standard deviation; simply stated, it is a term that measures volatility – the higher the value, the more volatile (and therefore, risky) the asset class. As you might expect, international equities are more risky than domestic equities which are more risky than bonds.

In the table below we have created three portfolios. If you hold just the S&P 500 (Portfolio #1) the historical return and standard deviation would be 11.6% and 15.1 respectively. Now let us suppose we add a 20% position in bonds to form portfolio #2. Taking correlation data into consideration, our calculations show a modest 0.5% decrease in return while

Asset Class*	Return(%)	Std. Deviation / Risk
Domestic Stocks	11.6%	15.1
Bonds	7.9%	5.5
International-Developed	9.9%	17.1
International-Emerging	12.3%	23.4

Data from 1/1/1976 – 8/31/2014. Source: Morningstar Direct

standard deviation falls to 12.3. This means that by adding an asset class that is not perfectly correlated to our initial holding, we can significantly reduce our overall portfolio risk.

If we then add a 20% position in International-Developed and a 10% position in International-Emerging (both at the expense of domestic stocks), we improve our risk/return metrics even further. This third asset class mix

Portfolio Options		
	Return	Std. Deviation / Risk
Portfolio #1	11.6%	15.1
Portfolio #2	11.1%	12.3
Portfolio #3	11.4%	11.9

becomes Portfolio #3. In this case, the return increased while our risk has again dropped. To summarize, between Portfolio #1 and Portfolio #3, we have sacrificed a mere 0.2% decrease in return for a sizable reduction in risk.

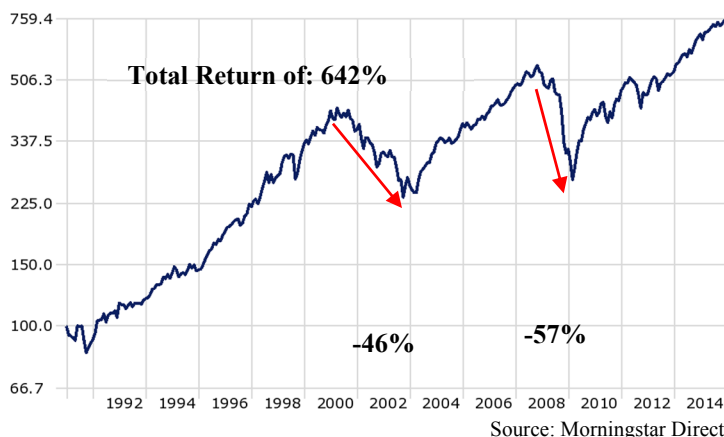
It is the correlation of returns for differing asset classes that creates these diversification benefits. Often what makes one asset class' returns go down may have zero or the opposite effect on another.

An important question an investor must ask is: *How do I decide what my asset allocation should look like?* As mentioned above, the answer to this question depends on time horizon, risk tolerance, and investment goals. A 22 year old college graduate saving for retirement should have a much different asset allocation than a 65 year old retiree needing a steady stream of income. The young college graduate could conceivably have a portfolio consisting of close to 100% stocks, a portfolio that would be high on the risk/return spectrum. He or she would have plenty of time to recoup any short-term losses before retirement nears. In short, the young investor can afford to take on more risk. The opposite is true for the retiree. A portfolio with a stated goal of capital preservation and steady, dependable income would be ideal. This portfolio would include more high quality fixed income investments that generate steady income.

To illustrate the difference between 2 such approaches, let's take a look at a portfolio consisting of 100% equities and contrast it with a portfolio with 60% equities and 40% bonds. A 100% equity portfolio would be suitable for a younger investor who has a higher risk tolerance. Conversely, a 60%/40% allocation would be optimal for an investor who is near retirement age and is looking for more capital preservation. Let's look at the return characteristics of these two portfolios over time:

Investment Growth

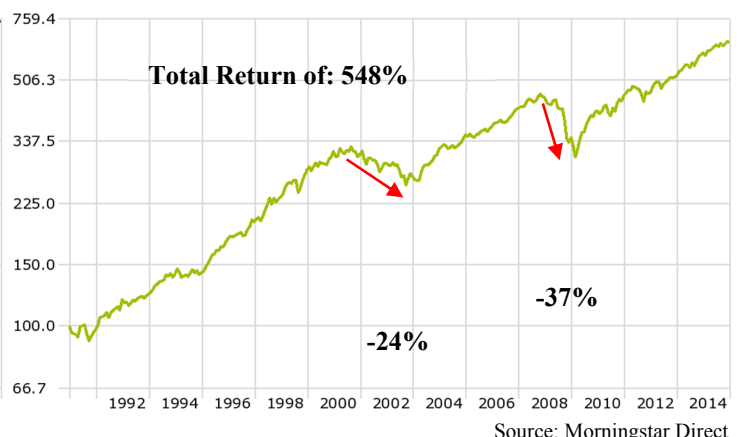
Time Period: 12/31/1989 to 12/31/2014



— 100% Equity

Investment Growth

Time Period: 12/31/1989 to 12/31/2014



— 60% Equities - 40% Bonds

As you can see, the 100% equity portfolio has a higher overall return during the past 25 years, but it has been a more volatile ride. During the last two bear markets, the high-to-low loss was -46% and -57%.

The 60/40 portfolio's volatility is dampened by the inclusion of bonds (which again have negative correlation to stocks). In this case, the losses during those same bear markets were -24% and -37%.

The returns on the 100% equity portfolio beat the returns on the 60/40 portfolio by a reasonably large margin. However, the losses an investor had to endure during the last two bear markets were close to two times

larger. As we mentioned in our “Why we Invest” piece, staying invested during these downturns is important because not only is it very difficult to time a market “top,” investors stand a good chance of getting back in too late and missing out on the rebound. What is critical here is to find an appropriate level of volatility and stay invested.

In conclusion, asset allocation needs to be based on several factors. Investors must first consider their time horizon, risk tolerances and financial goals. Once these goals are articulated, a proper, multi-level diversified portfolio must be constructed in a cost effective manner, keeping in mind that an investor’s asset allocation will likely shift over time, growing more conservative as retirement nears (though this will ultimately depend on individual circumstances).