

## PEABODY RIVER ASSET MANAGEMENT, LLC

P.O. Box 382128  
Harvard Square  
Cambridge, Massachusetts 02238-2128  
www.peabodyriver.com

# NEWSLETTER

Issue 9

October 2010

### NEWS OF PEABODY RIVER

The past summer was a quiet one for Peabody River, with sufficient time for recreation, including a hike along the west branch of the Peabody River itself, to its source at Spaulding Lake, a glacial tarn in the shadow of Mount Washington, in New Hampshire. But work proceeded apace, too. Clients were no more inclined to depart on long vacations than I was.

I was surprised that several friends noticed that I was quoted in the *Wall Street Journal* on August 7, in an article by Jason Zweig on a new Web site that will provide investment advice. Having spent a portion of my career in the field of automated online investment advice, I have opinions about this subject. Zweig, by the way, is one of the better journalists writing on personal investments, and I commend his column in the *Wall Street Journal* to my readers.

We have modestly updated our Web site by trying to add clarity to the page entitled, “How We Invest.” The site is a work in progress. I am trying to reconcile the opposing requirements of conveying essential ideas quickly in a few clear points, and providing information and detail that anticipate reasonable and intelligent questions about my practice.

§

### BRIEF REVIEW OF THE THIRD QUARTER OF 2010

As has been widely noted in the press, this past September was the best September for the U.S. stock market since 1939. That’s not to say, of course, that there’s something special about Septembers, so the curious observation actually carries little significance. At any rate, the total return on the S&P 500 was 8.92% for September, 11.30% for the third quarter, but only 4.01% for the first nine months of 2010. Correspondingly, the total return for the U.S. bond market (as represented by the Barclays Capital U.S. Aggregate Bond Index) was 0.11% for September, 2.48% for the third quarter, and 7.94% for the first nine months of 2010.

It is a common belief among non-professional investors that bonds are a hedge for stocks. Without my getting into an explanation of hedging, I will just point out that, historically, this

is not the case, and the bond market and the stock market have a tendency to move together; that is, they have a positive correlation. (For an explanation of correlation, see the following essay.) It follows from the mathematics of bonds that when interest rates go down, bond prices must go up. With stocks, it is more an economic tendency than a mathematical necessity that when long-term interest rates go down, stock prices also go up, even if the outlook for corporate earnings remains unchanged. It therefore makes sense that, all else being equal, the decline in long-term interest rates over this year so far, which corresponded to the surge in bond prices, should also be associated with a rise in stock prices. That's not to say that I'm forecasting a continuation of the rising stock market; as you know, I don't make short-term forecasts. But in retrospect, the strong showing by the stock market in recent months is not entirely a surprise; it is, in part, a reflection of the decline in long-term interest rates that we have seen in the bond market.

§

**ESSAY: WHY DIVERSIFY?**

And though the tired waves vainly breaking  
Seem here no painful inch to gain,  
Far back, through creeks and inlets making,  
Comes silent, flooding in the main.

Clough

There is an old amusement of pairing proverbs that encapsulate opposing tidbits of folk wisdom, like “A stitch in time saves nine,” and “Haste makes waste.” Similarly, there is “Don't put all your eggs in one basket,” paired with the quotation, “Put all your eggs in one basket, and then watch that basket,” which is not exactly a proverb, but a maxim of Andrew Carnegie's that was picked up and popularized by Mark Twain.

Although the diversification of investments (not putting all your eggs in one basket) is commonly regarded as a good thing, there are nonetheless those who regard it as a guarantee of mediocrity. It isn't, but there are right ways and wrong ways to go about diversifying a portfolio. Let's first explore how diversification works. Then we will understand how it can help us, and what its limitations are.

There are contexts where diversification is inappropriate, and where Carnegie's advice is apposite. Our society and its economy flourish because of entrepreneurs, individuals who conceive ideas for businesses and put them into practice. These persons are often supreme risk-takers, and many do, indeed, fail. They must put their all into their businesses, and they do not diversify. For the most part, they are different from ordinary investors, and not only because they are willing to take extraordinary risks; they also have a large measure of operational control over their investments. If the enterprise is not going well, they have the power to change the way it works. Ordinary, that is, passive investors lack this power. If a business in which they've invested isn't going well, their only option is to sell their stake. The option to sell your stake in a company after it has done badly is not, however, operational control. So Carnegie's advice is exactly right for entrepreneurs, as it was for him. The rest of us, whose wealth is in common stocks, bonds, mutual funds, and exchange-traded funds, and who lack operational control over our investments, can benefit from diversification, when it is done thoughtfully.

## How Diversification Works

Diversification works its wonders in two ways: it can reduce risk, and (though this is generally a lesser effect and not widely acknowledged), it can actually increase returns.

The usual explanation of diversification, unfortunately, often stokes the doubts of skeptics. You may well have heard an investment expert justify diversification on the grounds that it dampens volatility. The argument is that some of your investments will be going up as others are going down. The net change in your portfolio of investments is therefore less than the extreme changes of the individual investments. This explanation, while not incorrect, is incomplete, and it often provokes the not unreasonable retort that volatility doesn't matter, because what really matters is how an investment turns out in the long run. Other explanations of investment diversification that rely on analogy to the role of diversity in different realms—you know, like the admonition to eat a diverse diet—are substitutes for thought, not aids to understanding.

Consider, for the moment, a world in which you have perfect foreknowledge of investments. In this world, you would put all your money into the one investment that you knew would have the highest return (after taking into consideration all cash flows). Why invest in anything that would produce less than the highest return?

But wait! Although we've assumed perfect foreknowledge of investment performance, we haven't assumed perfect foreknowledge of when you would want to cash in your chips. What is the span of time we're considering? Would you choose the investment that would have the highest return by 4:00 PM on Tuesday, March 2, 2021? But the price might drop the next morning, and perhaps a different investment would have the highest return as of 4:00 PM on Wednesday, March 3, 2021, one day later. Having perfect foreknowledge of investments, you should choose that one instead, if your target date is March 3, rather than March 2.

Only rarely does someone know the precise date and time when he will have to convert his investments, in whole or in part, to cash. That uncertainty, even apart from the uncertainty (in the real world) about future investment performance, means that we normally invest in more than one thing in order to have some hope of good results at that vague time in the future when we have to cash in. That is, we diversify.

If you put a portion of your money into *at least one* additional investment, you're diversifying. Then the question is no longer whether to diversify, but how much should you diversify, and with what.

## Diversification Can Beat Mediocrity

I've just shown that if you don't know the precise length of the long run, even if you do know future investment performance—which you don't—then variability (of price or return), that is to say, investment risk, matters. Thanks to variability, the investment that will

produce the best investment result in precisely twelve years is not necessarily the same as the investment that will produce the best investment result in twelve years and one day, or in fifteen years.

But variability matters also even if you *do* know the precise length of the long run but don't know the final value of the investment. Diversification's ability to reduce variability can produce investment results that are superior to those of a single investment.

Let's consider, for example, the possibility of investing just in the U.S. stock market, and then of investing in both the U.S. and the Chinese stock markets. Let's assume that the U.S. stock market and the Chinese stock markets will each return a precise average of 7% a year over the next five years. And let's say that that the pattern of (variable) returns turns out as follows:

Stock Market	2011	2012	2013	2014	2015	Average	Wealth
U.S.	6%	-8%	7%	20%	10%	7%	\$137,737
China	1%	2%	10%	10%	12%	7%	\$139,613

Now, although they achieve the same *average* annual return, the U.S. stock market and the Chinese stock market will have different results. If you invest \$100,000 in each market at the beginning of 2010, your investment in the U.S. will grow to \$137,737 at the end of 2014, whereas your investment in China will grow to \$139,613, a difference of \$1,875.46.<sup>1</sup>

Look at the numbers. Even without knowing statistical definitions of volatility, you can see at a glance that our hypothetical Chinese stock market is less variable than the hypothetical U.S. stock market.

It is a general truth that, for the same *average* return, the less variable pattern of returns will always produce more wealth.<sup>2</sup> This can be proven mathematically. And it is a corollary of my assertion when I discussed the nature of return,<sup>3</sup> that what matters in the end is not return, but the amount of money.

But at the beginning of 2011, we don't know the patterns of future returns, although our best estimate (in this example) is that both the U.S. and the Chinese stock markets will have the same return over the long run. So we diversify. We invest \$50,000 in the U.S. stock market, and \$50,000 in the Chinese stock market. The returns to this diversified portfolio are then:

---

<sup>1</sup> And, no, the order of the returns doesn't matter. Readers familiar with the mathematics of compound growth can confirm these results in a minute or less with a calculator or spreadsheet.

<sup>2</sup> Devoted and attentive readers will recognize this example and the argument as being nearly a repeat of one presented in my earlier essay, Peabody River Newsletter, issue 2, July 2009, "[How to Think about Investment Return and Risk at the Same Time, Part I.](#)"

<sup>3</sup> Peabody River Newsletter, issue 2, July 2008, "[How to Think about Investment Returns.](#)"

Stock Market	2011	2012	2013	2014	2015	Average	Wealth
U.S. + China	3.5%	-3%	8.5%	15%	11%	7%	\$139,047

That is, the return in each year is just the average of the returns to the U.S. and Chinese stock markets for that year (so that, in 2011,  $3.5\% = (6\% + 1\%)/2$ ).<sup>4</sup> This diversified portfolio of two investments, which again will average a return of 7%, will produce final wealth of \$139,047. This isn't quite as good as investing in just the Chinese stock market alone (\$139,613, as we just saw); it's \$566 less.

Did our diversification produce a mediocre result? That depends on how you define "mediocre." The average of the wealth results of the two separate investments is  $(\$137,737 + \$139,613) / 2 = \$138,675$ . Our diversified portfolio, consisting of the combined investments, beat this average by \$372. If "mediocre" means average, then our diversified portfolio produced better than mediocre results. This, too, is a general truth: if the average returns are the same, a diversified portfolio (with equal amounts invested in each holding, and the holdings have different patterns of returns) will produce more wealth than the average of the amounts of wealth generated by putting the same total amount of money into each of the individual investments.

It gets better.

Consider the following set of hypothetical returns:

Stock Market	2011	2012	2013	2014	2015	Average	Wealth
U.S.	6%	-8%	7%	20%	10%	7%	\$137,737
China	1%	2%	10%	10%	12%	7%	\$139,030
U.S. + China	-1%	4%	15%	3%	14%	7%	\$139,241

In this table, the hypothetical pattern of returns to the U.S. stock market is the same as before, but the Chinese stock market has a different pattern of returns, still averaging 7%. And now, the diversified portfolio, with \$50,000 invested in each of the two markets, produces<sup>5</sup> final wealth of \$139,241. This beats both of the individual markets! (It also, of course, therefore beats the average of the wealth they would produce.)

This certainly isn't a mediocre result; it's better than investing in either of the two individual stock markets, and it was the result of diversification.

I caution again that I'm using completely made-up numbers, and I'm not arguing that you should invest half your money in China. But you can see why it might make sense to diversify your holdings internationally, even if you expect all of the world's stock markets to

<sup>4</sup> Because the money invested in each market grows at different rates each year, I have to sum my resulting wealth at the end of each year, divide it in half, and reinvest each half in each market. Otherwise, I'd be investing more in one market than the other at the start of each successive year.

<sup>5</sup> Again, because the sums grow at unequal rates, I reallocate the money between the two markets at the beginning of each year, so that I have equal amounts of money invested in the two markets.

produce about the same average return in the long run. You can expect the results to be better than mediocre.

How can this be? Unfortunately, it requires a bit of mathematics to show how this works, and I try not to be tedious. But the key to the underlying mathematics is **correlation**, the correlation among the patterns of returns produced by the different assets.

In everyday language, when we say that two things are “correlated,” we often mean that they move in lock step, like soldiers marching in parade, and if they’re “uncorrelated,” they’re completely unrelated, like dancers in two different halls, one group dancing to disco music and the other group waltzing to a ballroom dance orchestra. But in precise statistical usage, there are degrees of correlation, whose values range on a scale from 1 through 0 to -1. The soldiers’ steps have a correlation of 1, the dancers in the separate halls have a correlation of 0. But the dancers in one hall or the other have intermediate correlations among each other, that is, correlations between 0 and 1. They may not be taking the same steps, but they’re dancing to the same music and rhythms, and to some degree, they tend to move together. A correlation of -1 is like a pair of ballroom dancers waltzing together, where each dancer’s moves are the exact mirror images of the other’s, so that one dancer extends her left foot at the same moment that her partner extends his right.

It turns out that, all else being equal, the *lower* the correlations among investment returns, the *better* the financial result of their combination.<sup>6</sup> And negative correlations (which are nearly impossible to find in the real world of investing), are better than positive ones. In my first example, above, the correlation of the returns between the U.S. and China was 0.66. In my second example, the correlation was only 0.08. Hence, the greater wealth at the end of the second example.

Another way of looking at this is that the lower the correlations, the lower the volatility of the *combination* of the investments, and we already know that, all else being equal, lower volatility produces greater final wealth.

## **Diversification and Modern Portfolio Theory**

So there are a lot of moving parts in the machinery that generates investment results. The final wealth produced by diversified investments depends upon (besides the amount of money with which you start):

- 1) The initial proportional weighting of the investments (10% of this, 15% of that, and so on)
- 2) The average return of each investment;
- 3) The volatility of each investment<sup>7</sup>
- 4) The correlation between each pair of investments.<sup>8</sup>

---

<sup>6</sup> And assuming the same average returns in all cases.

<sup>7</sup> As I have noted several times before (ref), volatility alone isn’t a complete measure of risk, but for the purposes of calculating the advantages of diversification, it’s usually good enough.

<sup>8</sup> And any subsequent intervention to change the weights among the investments, and whether the income (stock dividends or bond coupons) is reinvested.

The more individual investments you consider, the more average returns there are, the more volatilities there are, and the more correlations there are. And there are tradeoffs to be made among all of them.

This way of looking at diversification, by considering all these four elements, is the foundation of **Modern Portfolio Theory** (MPT), which was first put forth by Harry Markowitz in his University of Chicago doctoral dissertation in 1955, and for which he shared in the award of the Nobel Prize in economics in 1990. What I have laid out before you, though, it is not so much the theory, as the indisputable consequence of the mathematics of return and risk. Markowitz saw this, added simplifying economic assumptions, and, applying the miraculous electronic computing power available to him in the early 1950s, built out the theory, which we'll see again when we consider how best to combine investments into a portfolio. (Some traditional investors refer disapprovingly to virtually all mathematical and economic reasoning about investing as “modern portfolio theory,” but this is so vague as to rob the term of useful meaning, and is basically incorrect.)

In order to follow Markowitz in computing the results of diversification, you have to forecast a lot of statistics in order to predict your portfolio's investment results. Of the four categories of inputs that I listed, only the initial proportional weights on the investments are known. It's not sufficient to forecast average returns of the individual investments, which is hard enough; how can you forecast volatilities and correlations? In practice, investment professionals can't make all these forecasts precisely for the long term, but there are rules of thumb and intuitions that help. (For the short term, many do, indeed, use precise forecasts; as I mentioned in my previous essay, I once worked for a company that produces **risk models** that incorporate forecasts of volatility and correlations--but not forecasts of average returns, which we felt were the responsibility of our clients, companies that offered their own investment expertise to individuals and pension funds.<sup>9</sup>)

## Diversification Lessons

Even without working through the math and computations, however, we can explore some of the consequences of investment diversification and draw some practical inferences for investing.

First, and most important, especially if the forecasts of return are fairly similar, you want to diversify among assets whose patterns of return over time have low correlations. Take, for a counterexample, the many mutual funds that are designed to produce the same returns as an index of the stock market as a whole. These are called “index funds.” Many of these track the Standard and Poor's 500 index of the largest companies in the U.S. stock market. There is no diversification benefit to be gained by spreading your money among different S&P 500 index funds, because they will have the same return (whatever it turns out to be), and they are all perfectly correlated, that is, every pair has a correlation of 1. The combination of these funds will have exactly the same variability, and risk, as each individual fund.<sup>10</sup>

---

<sup>9</sup> Peabody River *Newsletter*, issue 8, July 2010 “[Is the Market Efficient?](#)”

<sup>10</sup> Let's assume that there is no chance that any of the companies managing the funds will steal your money or collapse in a scandal.

Few investors would make this mistake, but there is a similar one that is all too common. Repeated studies have shown that many employees, when given a choice of mutual funds in their 401(k) plans, will allocate money in equal amounts among all the options, regardless of what the options are. So, for example, a person given a choice of ten investment options, consisting of nine stock funds and one bond fund, will spread his money equally among all of them. The same person, given a different choice of ten funds, this time consisting of nine bonds funds and one stock fund, would also spread his money equally among these. But stocks funds of all sorts tend to have high risk with an expectation of relatively high return, and bond funds tend to have low risk with the expectation of relatively low return. (Of course, things haven't worked out this way for stocks and bonds over the last twenty years, but I'm talking of expectations, not results.) So it can't possibly be right that the same person would be equally well served by a portfolio consisting of 9/10 stock and another portfolio consisting of 9/10 bonds. In short, spreading money equally among available investment options without regard to the characteristics of these options will likely produce inappropriate investment results. This is called "naïve diversification."

Not only the financially innocent have been led astray by misunderstanding diversification. In the last few years, salesmen of sophisticated investment products were able to practice upon the credulous simplicity of supposedly sophisticated investors who had absorbed the basic lesson that low correlations are good, but hadn't thought through this concept much further. Known correlations are measured with historical data, and they can therefore change over time as more data accumulate. So the salesmen would select a measurement period (say, the trailing five years) during which their products had low correlations with both the stock market and the bond market to pitch these investment vehicles as the very thing to lower the risk of their clients' portfolios. This technique was a boon to the sales of some hedge funds and "structured products." But, unsurprisingly, longer runs of historical data would have shown that the correlations were nowhere near as low as the sales pitch said they were. In the recent great financial crisis, we have seen the results of the authentic correlations.

## **Correlation and Independence**

Even without promotion by clever Wall Street salesmanship, this lack of clarity over the meaning of correlation can lead to overestimation of the virtues of diversification. Statisticians apply the concept of **independence**. Remember those two groups of dancers, in two different halls, whose motions are uncorrelated? I didn't tell you that they're all from one extended family, celebrating the patriarchs' 60<sup>th</sup> wedding anniversary. One group was the children's party, the other was the adults'. At 9:00 PM, they all converged in a single conga line. The two groups were not independent, and suddenly, they've changed from a correlation of 0 to a correlation of 1.

We've encountered the same phenomenon in the financial markets. I've mentioned my preference for diversifying among the U.S. stock market and the foreign stock markets. But these markets are not independent of each other (indeed, the correlations of their returns have historically been high). And when a calamity befalls, the correlations among their returns approaches 1. That is, when we in the United States most want the benefit of

diversification, the correlations with foreign markets are most likely to leave us bereft. We've known this for a long time. We saw this in the market crash of October 1987. Anyone who was surprised that diversification across international stock markets provided little protection during our recent market turmoil knew little history and wasn't paying attention.

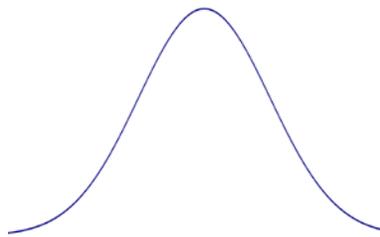
But these periods of convergence are always brief. It's as if the partiers danced the conga for five minutes, then went back to their separate dance halls.

When I address the problem of constructing a portfolio in a future essay, I will say more about the right ways to go about diversifying. But it is worth considering here the extremes of diversification. We already know one extreme: No diversification, meaning that you hold a single investment. The other extreme is to hold everything.

### How Diversification Makes Risk Comprehensible

Let's consider just the U.S. stock market (and ignore the bond markets, foreign stock markets, and privately-held stocks). Holding everything means holding some amount of stock in every U.S. company that is traded on an American stock exchange, in the same proportion, by value, that each stock contributes to the overall stock market. If, for example, the stock of General Electric is 1.99%, by value, of all the stocks traded in the U.S., then it will be 1.99% of our extremely diversified portfolio. Such extreme diversification is what stock market index funds offer.

At this point, I will reveal a sleight of hand that I used in my essay on the nature of investment risk,<sup>11</sup> at the end of which I wrote, "There is an important distinction to be made between the risk of individual investment securities and the risk of amalgams or aggregations of securities, which is what mutual funds and markets are." And then I ignored the distinction, in the noble cause of pedagogy. In that essay, I used the familiar so-called "bell curve" (also known as the **normal distribution**) to illustrate the risks of investment returns:



This is a graph of the (supposed) *frequency* of the returns, not their size. The height of the curve represents frequency. Accordingly, the middle of the hump represents the middling returns, which occur most frequently, and the tails represent the extreme returns, both very low or negative returns (on the left) and very high returns (on the right), which occur very infrequently.

As I wrote then, quantitative investment analysts usually assume, for the purpose of analyzing investment risk, that the possible outcomes of an investment resembles the bell

---

<sup>11</sup> Peabody River *Newsletter*, issue 3, January 2009, "[How to Think about Investment Risk](#)."

curve. And I explained that this is owing to wishful thinking, because the bell curve is mathematically tractable, unlike other possible frequency distributions. There are problems with the assumption of the bell curve, in part because, in actual fact, disastrous results from the stock market are more frequent than the slender left-hand tail of the bell curve would suggest. All the same, the bell curve beats the alternatives.

But if you think of individual stocks, as distinct from the entire stock market, no amount of wishful thinking is going to conjure a match of their periodic returns (say, daily, or monthly) to the bell curve. A company that is consistently successful month after month, year after year—and I’m sure you can name one or two of these—will likely have very good returns that are more numerous and larger than their very bad returns, thereby stretching the (bumpy and far-from-smooth) frequency graph to the right. Correspondingly, the returns to the stock of a company like Enron that is snuffed out, if you look at the frequency of their monthly values during the last couple of years of the company’s existence, are also nothing like a bell curve.<sup>12</sup>

It turns out, though, that as you gather first two, then three, then, say, ten or twenty disparate stocks into a portfolio, the frequency of the various returns to that portfolio *as a whole* begins to fit the shape of a bell curve, more or less. And if these stocks are randomly chosen, then the average return of the portfolio (average over time, that is) will be close to the average return of the market, and the shape of the more-or-less bell curve of the portfolio’s returns will resemble the more-or-less bell curve of the stock market’s returns.

Of course, no one, not even someone reproducing the entire market, as an index fund does, chooses portfolios randomly. But while the index fund is designed to resemble the market, other portfolios may be designed with other ends in mind, and their more-or-less bell curves won’t be the same as that of the market, but will still submit to a mathematical analysis that quantifies the risks of poor outcomes.

In short, when considering a distinct *individual* stock or other investment, we may be able to develop some notion of what return we should expect from it, but we cannot, *in a statistical sense*, easily conceive its concomitant risks, in the sense of probabilities of dire outcomes. Once we combine individual investments into a *portfolio*, in contrast, well-understood laws of statistics begin to apply, and the probabilities of all kinds of outcomes will begin to fit a pattern that bears at least a passing resemblance to the bell curve, from which we can deduce approximate risks of dire outcomes.<sup>13</sup>

A fundamental analyst, that is, the kind of analyst who pores over the financial statements of the company that issues a stock or of the company or government that issues a bond, would probably object to my first proposition, in the sense that she might claim an ability to evaluate the risks to the specific company or government entity. That may be true—but I did qualify my proposition by saying, “in a statistical sense.” Once, however, we consider

---

<sup>12</sup> To be clear: I’m speaking of the shape of the “curve,” which in stock market history isn’t even a smooth curve. I’m not referring to the value corresponding to the center of the hump. For example, you could find two stocks whose returns roughly approximate to a bell curve, but one has the hump centered at an annual return of 3%, and the other has the hump centered at an annual return of 5%.

<sup>13</sup> Strictly speaking, it’s the so-called “return relatives” that are distributed in a bell curve; the returns themselves will loosely resemble the curve of the lognormal distribution, not the normal distribution.

the individual investments together as a diversified collective, that is, as a portfolio, the bell curve, or something like it, rears its back, and the investments yield, even if grudgingly and imperfectly, to statistical analysis, with its implied numerical probabilities of bad results. And this suits nearly every investor's portfolio. Hardly any investor holds only one stock or only one bond. And this is how I excuse myself for eliding the distinction between an individual stock or bond and a portfolio when I introduced the concept of investment risk.

### More Diversification Lessons

A proper appreciation of the nature of diversification can overturn some commonly held beliefs. So far is diversification from ensuring mediocrity, that it can actually justify holding very risky investments in a portfolio. It may be that, despite a high level of risk, a particular investment holds out the prospect of a good return, which will be directly averaged into the return of the entire portfolio, while the risk (depending upon the correlations with the other investments in the portfolio) may be largely diversified away.

Understanding this has led to very real changes in how portfolios are managed. The management of a trust or an endowment, for example, is legally governed by what is known as the **prudent person rule**, which not so long ago was known as the "prudent man rule." As enunciated by Judge Samuel Putnam in his 1830 decision in the case of *Harvard College v. Amory*, this stated that a trustee or fiduciary "is to observe how men of prudence, discretion, and intelligence manage their own affairs, not in regard of speculation, but in regard to permanent disposition of their funds, considering the probable income, as well as the probable safety of the capital to be invested." This was for many years interpreted to rule out the holding of individual highly risky investments within a portfolio. If, however, you were to sift diligently through all 500 companies that constitute the S&P 500 index, you would doubtless find a few companies that, considered by themselves, were issuers of stock that a prudent fiduciary would not purchase. And, as an index fund based on the S&P 500 index would by mandate hold those stocks, such an index fund would be considered an imprudent investment for a fiduciary to purchase for a client. The change took many years, but now, in light of modern portfolio theory, the prudent person rule has been reinterpreted, and index funds are considered among the least adventurous kinds of investments for a trust fund or endowment.

This notion of the nullification of risk can, however, be taken too far. Mathematics alone will show that, from a set of very risky investments with the right correlations, a portfolio manager could construct a portfolio with low risk. That is, the dramatic moves in price hither and yon by the individual investments could cancel each other in the portfolio. In practice, this is almost certainly not economically feasible, or if it appears to be, that is only because the numerical values of the correlations being used to calculate the risk of the portfolio are themselves being estimated incorrectly. This is, however, an effective excuse for a Wall Street firm that needs to justify the unloading of risk from its own inventory onto unsuspecting customers.

Diversification not only affects portfolios; it also adds a layer of sophistication to the relationship between the risk and return of individual investments. As I have written

before,<sup>14</sup> there isn't a direct relationship between the risk of an investment and the return you may expect from it; not all risks are compensated. Many economists, especially the proponents of the hypothesis of market efficiency, have argued that the market, in its haggling over prices, does not provide compensatory return for risks that are easily diversified away. Whether there is *no* diversifiable risk that is compensated by return is a matter for continuing research by those who analyze the actual historical numbers. What is clear, however, is that at least a very large proportion of diversifiable investment risk is not compensated by return. Consequently, you shouldn't expect to receive a large return just because you hold very risky stocks. A very risky stock (or other investment) may provide a good return in the short run—because, after all, volatility causes prices to go up as well as down—but in the long run, if much of the risk could be sloughed off through diversification, it may very well provide no better return than a much less risky stock.

Nearly all common investors are diversified to some extent—as I've said, if you own more than a single investment, you're diversified—but most are broadly diversified, because they hold mutual funds. A case can be made (and has been by some commentators) that one of the greatest benefits of mutual funds is not that they offer professional management skill, but that they provide broad and, in many cases, inexpensive diversification. This may not be, however, and it usually isn't, the kind of diversification that a portfolio manager or investment advisor would create to suit the needs of a particular investor.

## Conclusion

What investment diversification is, and how it works, is one matter; how best to diversify and to benefit from diversification is a further matter.

Over the last year or so, some investment advisors have made a great show by noisily proclaiming that “diversification is dead.” Stated like that, the claim is, of course, utter nonsense. I'd be astonished if these managers held only a single investment each in their portfolios. What they are almost certainly trying to say is that they believe in concentrating their portfolios in one asset class or another; that is, that they believe that they ought not to be diversifying across asset classes. They may be right or wrong—my judgment is that they're wrong—but we will find out how to decide how much weight to give each investment or each asset class in a portfolio, and when to change this, when we reach our ultimate destination, in a pair of essays on portfolio construction.

Adam Jared Apt, CFA

Disclaimer: Nothing in this newsletter should be construed as specific investment advice or a recommendation to buy or sell securities. Any investment advice given here is general in nature and offered without expectation of compensation.

---

<sup>14</sup> Peabody River Newsletter, issue 5, October 2009, “[How to Think about Return and Risk at the Same Time, Part II.](#)”