



Not by Return Alone: Judging Investment Performance

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This article is the second part of an article about the relationship between risk and return. Part one can be found [here](#). This is intended for the educated layman. It was written as part of a continuing series of essays on a variety of investment topics.

Wherein we discover that the connection between return and risk is neither rigid nor obvious, and that we can be cheated of our money by disregarding risk and fixating only on return.

Return and risk are not lashed to each other

If you believe, rightly, that return and risk are related, you may be inclined to stride further down this path on the assumption that return is always proportional to risk, that higher risk implies higher return, and vice versa. Stop. This path will lead you into a swamp of bad investment decisions.

Return and risk are not lashed tightly together. All the mysteries of finance arise from the intricacies of their relationship. Consider, for example, gold. The price of gold has varied enormously since the U.S. came off the gold standard. That is, its price, and therefore its returns, has been volatile. But apart from the first decade after the dollar price was set free, in 1968, long-term returns to gold have been negligible. Moreover, there's little economic reason to think that gold ought to produce a high return in the long run. It probably won't. (That is, of course, unless all other assets have negative returns; that's what makes gold a hedge against disaster.) Sure, it may produce a great return from time to time when, starting from a low price, it goes up to a high price, as it has recently. That follows ineluctably from the definition of volatility. But it's the return we expect in the long run that concerns us as we define the relationship between return and risk, not our ability to identify the troughs and crests of volatility.

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This seeming violation of the common sense that higher return is associated with higher risk should not be written off merely as an idiosyncrasy of gold. There is a multitude of such investment idiosyncrasies.

Consider by analogy the maxim that you get what you pay for. *Consumer Reports* has created a highly successful (not-for-profit) business built on the proposition that this is not strictly true, and it supports this with evidence. I'm looking at a recent issue, which shows that you can pay \$3300 for a refrigerator that is scored much lower than one of the same design that costs \$1700. Quality is not directly related to price. Now, if you look across the entire range of kitchen appliances, for each type, the least expensive ones *on the whole* have lower ratings than the most expensive ones. And there comes a point where no matter how much you're willing to spend, you simply can't get a better refrigerator, or oven, or dishwasher.

Similarly with investments, there comes a point where no matter how much you pay in terms of volatility, you can't get a better likely return.¹ And as you look across all asset classes, you'll find that different classes and subclasses achieve their best at different levels of risk, that is, volatility. Looked at this way, there is a very strong relationship between return and risk, where the higher the return, the higher the risk, as we've already seen in Part I of this essay. (One way in which the analogy fails is that different kinds of appliances have different uses, whereas all investments of whatever kind have just one use: increasing our wealth.)

Economists have even argued that the return on a *particular* stock should be related only to a proportion of its risk, not to its total risk.² As the grand theory that underlies this argument has been tested and compared with reality, it appears increasingly to be only a very rough approximation, but in this one respect, it appears to be a very good approximation.³ So not only can't you conclude much about the future return on a particular investment (like a single stock or bond) by observing its volatility; in theory, some of that investment's volatility (or risk) has no relationship to its likely return.

All the same, just as you can be quite sure that no one would honestly sell you the best refrigerator for \$200, you can be quite sure that no one will honestly sell you an investment that will produce great returns at the price of very little risk.

¹ Unless you use leverage.

² The argument runs that, because you can easily get rid of the idiosyncratic volatility of individual investments by diversifying your portfolio, the market does not "pay" you compensation for that volatility. Instead, it pays you for only the degree to which your portfolio partakes of the overall volatility of the market. Regardless of the truth of the theory, experience shows that high volatility in the past is not a predictor of high future returns.

³ This theory is the famous Capital Asset Pricing Model, or CAPM, but its role is beyond the scope of my essays.



There are, then, two ways in which high risk does not result in high return. First, an investment may offer both, but the return we expected doesn't pan out. That's just the nature of risk; things have a chance of going wrong. Second, an investment may offer high risk with no realistic expectation of a high return in the first place.

We can therefore conclude that you can't have return without risk, but you can have risk without return. And when you consider agglomerations of investments and have wrung out of them the best return possible for every level of risk, you'll find that the greater the return, the greater the risk.

The elusiveness of risk

Many investors and, it hurts me to say, many investment professionals, evidently think that if investment risk is not realized, then it was never there in the first place. This is like believing that, because you once drove drunk from Boston to New York and arrived safely, you can safely drive drunk in the future. On second thought, an even better analogy is driving sober from Boston to New York and arriving safely. That's because driving is an inherently risky activity, but there can be good reasons for driving to New York, and most drivers don't constantly consider the risks. You can lower your risk by obeying the laws and being a careful driver, but you can't eliminate the risk altogether. There is always some small chance of a disastrous crash. If you like risk for its own sake, you can add the thrill of driving drunk, even though that won't provide any additional benefit at all. You can't achieve good returns in the stock market without being exposed to risk, but you shouldn't take on unnecessary risk.

There is a slipperiness to risk; it is protean and may be inconstant. Not only does Heraclitus's remark that you can't step in the same river twice apply to the coursing of investment returns; so does Cratylus's amendment that you can't step in the same river *once*. Volatility varies because investors' views of their economic prospects vary sometimes rapidly, sometimes slowly. You may recall those lazy, hazy days from 2004 to the summer of 2007, when the U.S. stock market comfortably wended its way north with nary a downturn. This was a period when volatility of returns was well below the historical average. If volatility of returns is risk, risk was then low. But it seems to me that this is a misunderstanding of the relationship between volatility and risk (and the spans of time over which we estimate them); we now know that despite the low volatility during the then-recent past, great risk was lurking in the stock market, which was soon to become apparent.⁴

If the variability of volatility is a random phenomenon, like coin-tossings that occasionally produce a streak of, say, six heads, then we should expect occasional long periods of low volatility (and others of high volatility). But if it is the result of something

⁴ For more on the identification of volatility with risk, see my earlier essay, "How to Think About Risk," January 2009.



systematic, explainable, and therefore conceivably predictable, like the occasional substitution of loaded dice in a long series of rolls, resulting in too many snake-eyes or too many box-cars, then risk is truly changing over time. If it were easy to distinguish between the two possibilities (changing risk or merely changing volatility), we could better answer the core theoretical and ideological question of financial economics, whether the market always prices assets correctly.

My personal view is that investment risk becomes greater when prices appear to be high compared with valuations, which presupposes that valuations can be reckoned independently from price. This is a testable hypothesis. But it is also a breach with the Chicago school of thought, with which I am otherwise largely in agreement.⁵

How to influence people and make money

Any mountebank or fool can achieve returns better than the stock market's by a combination of 1) taking on more risk than the stock market's own risk, and 2) being lucky. And such a lucky investment advisor is likely to peddle his investment wares to you. A truly professional and honest investment advisor, therefore, will not proffer just a summary of his past returns, but will tell you their volatility, or will present the entire series so that you can see the volatility. You cannot fairly evaluate an investment manager's returns without at the same time considering the risks he took to achieve them.

It is therefore common practice, at the more sophisticated investment institutions, to evaluate performance by comparing the average return on an investment with its volatility during the measurement period, and sometimes even to calculate "risk-adjusted" returns (adjusted, that is, for how much estimated risk was present). There are a number of variant methods of comparing returns with risk; the simplest is just the average historical return divided by the average historical volatility. But it is easy to game any of these measures; you should never accept them without close scrutiny. And only trained investment professionals really know how to pick apart these numbers.

⁵ I will address this in a future essay on "efficiency." The very possibility of value being reckoned independently from price is controversial.



Just as there is obscurity in the definition of prospective risk, so is there obscurity in the definition of past volatility, as we have just seen. An investment manager will naturally prefer to show his results over a historical period when the volatility of his returns was less than the volatility of the stock market's returns, just as he will prefer to show the results of a period when his returns were greater than the market's. The investment management profession's governing organization, the CFA Institute, has promulgated rules intended to prevent this sort of deception.⁶

Another tool of the trickster is to compare his results with an inappropriate benchmark. I have referred to "the stock market" as if this were one entity with one historical average return and one historical level of risk. But we have already seen that, although stocks as a whole are an asset class, there are asset subclasses that are distinguished by having different historical returns and risks. The common indices of "the stock market," the Dow Jones 30 and the S&P 500, represent the stocks of large companies, because these companies dominate the overall market. But what if the investment manager or mutual fund that you are admiring was investing primarily in the stocks of small companies? We have already seen that the stocks of small companies have tended, as a group, to have higher returns than the broad stock market but at the cost of higher risk. (Of course, there have also been some periods when the stocks of small companies did worse than the stocks of large companies, because that's the risk.) It would be unfair to credit the manager with doing better than the stock market just because he was investing in the stocks of small companies when these were doing better than the broad stock market. Quite possibly, the manager was at the same time getting *worse* results than the collectivity of stocks of small companies. You have to compare the manager's returns and risks with those of his appropriate benchmark.

Examination of both historical return and historical volatility and a comparison of these with benchmarks enable us to characterize investment managers. A consideration of historical volatility alone doesn't allow us to project future risk of either asset classes or investment managers, because the historical period of volatility may be unrepresentative of risk. But if, say, we can figure out that the manager invests primarily in the stocks of small companies, we can reasonably infer that the risks associated with this manager will be greater than the risks of investing in the stock market as a whole.

Because we can't know in advance either the return that we ought to expect or the risk of our investments, investing necessarily involves much educated guesswork and estimation. But when we look back, we can calculate with certainty what our return has been, and we can also calculate the volatility of the past returns as a proxy for the risk we took on, which itself is ultimately unknowable.

⁶ The CFA Institute has established Global Investment Performance Standards. Peabody River does not sell its services on the basis of past returns, and besides, it has a very short history, so we do not present our results in full compliance with these standards. We do, however, calculate returns in the recommended fashion, using the Modified Dietz Method.



This is just the briefest of introductions to the analysis of investment performance. It's called "performance attribution," as distinct from "performance measurement." Careers are made in just this one area of investment analysis. In a future essay, I will explain more fully how to begin to read performance numbers critically.

An exception to prove the rule: Warren Buffett

There exist a perspicuous and talented few investors who can achieve better returns than the market's without taking on greater risk. These are the connoisseurs of investing. Warren Buffett is the best known. Like the connoisseur of fine art who has the taste and judgment to be able to anticipate the art world's judgment of an artist or a school, these investment professionals can anticipate the market's judgment of a stock or a bond. Their judgments are grounded not in taste, but in hard analysis of accounting numbers, of the economics and competitive position of a company, and of the managerial skills of the company's executives. The main difference between the connoisseur of art and the connoisseur of stocks and bonds is that the former can gain enjoyment from the object of his gaze regardless of whether the world converges on his opinion, whereas the latter gains little or nothing unless the world, that is, the market, comes to agree with him, and preferably sooner rather than later.

Buffett has said that "the true investor *welcomes* volatility" (italics his), which appears to contradict all that I have said about risk. It is worth pausing to resolve this seeming paradox; in doing so, we can clear up common misunderstandings of return and risk and further illuminate relationship between them.

Buffett is exaggerating, but he is right. He explains that he likes volatility because it gives him an opportunity to buy the stocks of companies that he likes at prices lower than the stocks are worth. His statement is therefore actually not about prospective risk, but about prospective return. To make full sense of his remark, let us ponder three points in order of increasing importance.

First, the context of his remark makes clear that he is talking about the volatility of the *price* of an investment, not the volatility of its *returns*. Although a change in return follows mathematically from a change in price, it has a different metric: We express returns as percentages, and prices as dollars (or other units of currency). This difference affects our perception of the associated risk.

Second, although past is often prologue, what matters finally is future risk, and historical volatility, although useful, is an imperfect predictor of future volatility. Buffett may like the volatility that creates low prices for investments he wants to buy, but (although he



does not say so), he is probably estimating future volatility to be lower than past volatility.⁷

And third, and most important, he is talking of discrete investment opportunities, not of his overall portfolio. You will recall that I earlier stated (without proof) that when you combine two investments, the risk is always *less* than the average of the risks of the two investments. Buffett's company, Berkshire Hathaway, is a portfolio of investments whose *collective* risk is lower than the *average* risk of the individual investments. Buffett mitigates the volatility of his individual investments by virtue of buying more than one.

If Buffett is confident of his judgment of an investment's ability to generate cash in the future, then of course he should find it more attractive if the price has dropped—if the drop in price does not reflect an impairment of the company's ability to generate cash in the future. Buffett's statement about volatility means that, all else being equal, a drop in price implies a higher return in the future. Although he doesn't say so, he presumably does not like volatility of return in a stock after he has bought it. The surest reason for presuming this is that the returns on the stock of Berkshire Hathaway are not very volatile, at least when compared with the stock market as a whole. Although that follows mathematically from Berkshire's being a portfolio of investments, Buffett could easily pump up its volatility if he wanted to do so, by using leverage.

Buffett is outstanding, therefore, not merely because Berkshire Hathaway's stock has had better returns than the market, but precisely because its returns have been more than commensurate with its risk.

No returns without risk

The historical evidence all around us suggests, although this is unprovable and amounts to a metaphysical proposition, that there can be no more than a piddling amount of return without risk. The proposition is unprovable because, although we can easily calculate return, we can't even identify, let alone calculate the value of all risks. This implies that when an investor achieves returns that are more than commensurate with the risks undertaken, it is because, collectively, the rest of us took on the balance of the world's risk. For Warren Buffett to be wise, others must be foolish.

Given that return is related to risk, and on the assumption that you don't have a financial death-wish, it follows logically that, to the extent that you are willing to take on any risk at all, you should want your portfolio to have the least prospective risk for the amount of return (or future wealth) that you hope to achieve.

In "How to Think about Risk," we saw that we couldn't quite define, in a calculable way, the volatility of returns. And not all risk manifests itself as volatility of returns. For

⁷ Or, rather, he is expecting upward price movements to dominate price changes downward.



example, there is the risk of a company's defaulting on its debt. When that happens, the stock becomes worthless. Of course, defaults don't occur instantaneously and without warning, so a company that defaults will see its stocks and bonds undergo return volatility before coming to rest at a valuation at or close to 0.

Another kind of risk that has been much in the news over the last year is liquidity risk, which is the risk that you will be unable to buy or sell an investment when you wish at any but an absurd price. When an investment is completely illiquid, it effectively has no price.

There is also what I'll call "knife-juggling risk." (That's my own name for it; it's not a term of art.) Some investment managers, generally ones who manage some kinds of hedge funds, welcome volatility for the same reason that Warren Buffett does, but they trade in and out of entire asset classes and subclasses, unlike Buffett, who buys the stocks and bonds of distinct companies. Their intention is to avoid gross volatility of their own returns by constantly buying cheap and selling dear (also unlike Buffett, who holds most of his investments for very long time). So they try not to be exposed to the vagaries of any one asset class or subclass for very long. They might, say, try to buy gold at the trough and sell at the crest. This is dandy as long as they're clever enough to keep all the knives in the air. But timing is critical, and if they drop one, the result can be disastrous. They—and their clients—are bearing the huge risk that their skills or their luck will at some point fail.

Conclusion

As we paddle down the Cahulawasee River⁸ of investing, we are threatened not just by the unmapped rapids, but also by conscienceless and malevolent denizens of finance who want to use us to their advantage. The only way to avoid risk altogether is to stay at home and place your money in cash.

But most of us do want to venture out, and many of us have the wherewithal to do so. As we do, we should plan carefully. Planning entails a due regard for risk, and a careful mapping out of what the risks are, or might be.

We are justified in expecting investments in the stock and bond markets generally to make money, because both theory and history reassure us that they ought to. In contrast, when you enter a casino, you ought to expect a good time, but you should also expect to lose money; the casino wouldn't be in business unless it were quite certain that, on the whole, its patrons will lose (even if some will win). Casinos, unlike the economy, don't create wealth overall. In investing, the venues and agents are exchanges and brokers, but these, unlike the casinos, don't, all in all, take a large proportion of the money that changes hands.

⁸ The fictional river in the 1972 novel and movie *Deliverance*.



Nonetheless, if you choose to invest without regard to risk and merely take a fancy to investments that you think will increase in value, or if you intentionally take risks simply for the thrill, then for you, the market will indeed resemble a casino.

I will conclude with an anecdote. Some years ago, toward the end of the year, I had lunch with a friend who was the chief investment officer of a large investment management company. Because of a late-month surge in investment performance, it looked as if this was going to be a very, very good year for his company, with large bonuses. But he couldn't linger over lunch. He was worried and wanted to get back to the office to study the returns, because, he said, they were *too good*. And if they were too good, his company must be taking risks he didn't know about. He had the responsibility to find out what they were.

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