PORTFOLIO STRATEGIES

The Pains and Gains of Investing

A look at hypothetical performance for five simple equity portfolios can help you choose which risk measures matter the most to you.

BY PAUL MERRIMAN

I know investors are typically obsessed with how much money they are making or will make or should have made or could have made. But in this article, we focus on the other side of the investment coin: risk.

How much risk is necessary to achieve any given return? That seems like a simple question, but in fact it's more complex than it might appear.

I'll start by mentioning two common statistics that are often cited to measure investment risk. Then, I'll introduce a few other measures that I believe are easier to understand and probably more relevant to investors in real life. I'll also describe five simple equity portfolios and see how they hold up against these risk measurements.

At the end, you won't have a "magic formula" to achieve risk-free wealth. But you'll be able to choose which measures of risk matter the most to you, and you'll know how to apply them.

Two Common Indicators of Risk

Investors often see a statistic called standard deviation. This number, expressed as a percentage, measures the volatility or variability of a set of returns. A higher number may be regarded as riskier.

Standard deviation is an interesting statistic, if used properly. But it's esoteric, and this number does not tell me what I really want to know about how much risk I'm taking.

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APRIL IS: Financial Capability Month

A second statistic that's often applied to a fund or a portfolio is the Sharpe ratio, which was devised by Nobel laureate William Sharpe. To oversimplify, this ratio uses a fund's standard deviation and its return over time to indicate the relationship between units of risk and units of return.

For those who take the time to understand it, the Sharpe ratio is somewhat easier to comprehend than standard deviation. But it's still a statistic that, to my mind at least, just kind of hangs there in space without telling me anything I really want to know.

What Really Bothers Investors

In the real world, investment risk is amazingly simple. People don't wake up in the night and break into a sweat about statistics. What they fear is the pain of losing money.

You can think of losing money as akin to pain. When I'm evaluating the risk of a fund or a portfolio, what I most want to know is: If I had invested in this in the past, how much would it have hurt me?

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Gains and Pains

I know, I know ... pain isn't a fun topic to read about. But stick with me, and it will soon get better.

Pain, after all, is what drives investors to abandon their plans. Pain is what's behind the "I can't stand it anymore" market timing system, which leads investors to sell most or all of their equities when their losses are too much to bear. (And for investors who are all or mostly in cash, this emotion-based timing system may produce FOMO—fear of missing out—and prompt them to "finally" buy into the market when prices are very high.)

Either way, the pain and subsequent panic selling or panic buying is likely to produce only short-term relief, usually followed by long-term pain.

Investment pain is best measured over a specific period of time, and that makes it easy to determine five things:

- How many years did a fund lose money?
- How bad was the worst year?
- Of the losing years, what was the average loss?
- What, in percentage terms, was the total of all the yearly losses?
- Regardless of calendar years, what was the biggest drawdown?

When I know those things, I know how tough-minded I would have had to be to obtain whatever return that fund achieved.

There's a good reason that investors submit to various forms of pain. They want gains. And the easiest way for real people to think about gains is in dollars. Percentages are fine, but we can all relate to dollars.

Five Simple Portfolios

The hypothetical dollar growth for five simple portfolios was calculated to show the differences that result when you are willing to endure various levels of pain. For convenience in creating performance tables, I give each portfolio a letter designation.

The five portfolios are:

- Portfolio A: the S&P 500 index;
- Portfolio B: a 50/50 combination of the S&P 500 and U.S. small-cap value stocks;
- Portfolio C: a 50/50 combination of U.S. large-cap value stocks and U.S. small-cap value stocks;
- Portfolio D: a four-fund U.S. equity portfolio divided equally among the S&P 500, large-cap value stocks, small-cap blend stocks and small-cap value stocks; and
- Portfolio E: a four-fund worldwide equity portfolio divided equally among the S&P 500, U.S. small-cap value stocks, international large-cap value stocks and international small-cap blend stocks.

Table 1 shows the allocations for each portfolio. These five combinations obviously have a good deal of overlapping asset classes, but their past performance is varied.

In Table 2, we track these portfolios over a 52-year period, 1970 through 2021. Returns in this and in Tables 3 and 4 are not those of specific funds but of indexes.

One thing you should notice about those numbers: Over a long period, seemingly small differences in compound average growth rates translate into very large differences in dollars.

The 52-year period of 1970 through 2021 included wars, financial and political crises, a heart-stopping one-day market crash, a couple of strong bull markets and several severe bear markets (and recoveries). That provided more than enough serious challenges to test any portfolio, and any long-term investor.

The long-term returns shown in Table 2 were all respectable. But they were only available to investors who could withstand some pretty significant pain. The table shows that, as the academics predict, risk and long-term return tend to be inversely proportional.

The all-value Portfolio C had the highest return (CAGR row) and the worst drawdown for the period of 1970–2021.

Portfolio C, which had four times the long-term return in dollars as the S&P 500, had lower average losses and lower total losses on a percentage basis.

TABLE 1

Allocations for Each of the Five Simple Portfolios

	Portfolio				
	A	B	C	D	E
S&P 500 Index	100%	50%		25%	25%
U.S. Large Value			50%	25%	
U.S. Small Blend				25%	
U.S. Small Value		50%	50%	25%	25%
International Large Value					25%
International Small Blend					25%

The funds used in these portfolios are Avantis U.S. Equity ETF (AVUS), Invesco S&P 500 Pure Value ETF (RPV), iShares Core S&P Small-Cap ETF (IJR), Avantis U.S. Small Cap Value ETF (AVUV), iShares MSCI EAFE Value ETF (EFV) and Schwab Fundamental International Small Company ETF (FNDC). These funds are included in The Merriman Financial Education Foundation's Best-in-Class portfolios. (Inclusion of Avantis U.S. Equity instead of standard S&P 500 fund exposes the portfolio to a little more value, and a tilt to quality.)
Source: The Merriman Financial Education Foundation.

Shorter Periods, Different Returns

Table 2 covers a period that's longer than most investors will ever experience. But a really bad decade can deliver enough pain to wash out investors, while a really good one can make believers out of skeptics.

Table 3 covers the same ground, but only for the decade of 1990 through 1999. That was a terrific decade for the S&P 500, leading many investors to believe that there was no need to diversify beyond the biggest U.S. companies (Portfolio A).

In this decade of the 1990s, the S&P 500 seemed to be the undisputed winner, dispensing far less investment pain than the other portfolios while beating all but one of them in returns. In 1999, investors could perhaps be forgiven for abandoning all the other asset classes under study here. However, Table 4 shows what happened next.

The decade of the 2000s wasn't especially kind to investors in any of these portfolios. But the S&P 500 was especially harsh, with the highest average and total losses for the decade. And in those 10 years, the stocks of the 500 largest U.S. companies couldn't quite break even.

Especially for retirees who counted on the S&P 500 for their income, the index provided plenty of pain. All the other portfolios did much better.

What to Make of All This

I suspect most investors who look at Table 4 will start with the bottom row, which tells how much they could

TABLE 2

Return Characteristics of Five Portfolios for 1970–2021

	Portfolio				
	A	B	C	D	E
Down Years	10	9	10	11	9
Average Loss	(14.6%)	(13.5%)	(14.2%)	(12.4%)	(15.5%)
Worst Year	(37.0%)	(36.9%)	(39.8%)	(38.2%)	(41.9%)
Total Losses	(145.9%)	(121.1%)	(142.1%)	(136.9%)	(139.9%)
Worst Drawdown	(50.9%)	(55.8%)	(60.8%)	(56.8%)	(57.2%)
Up Years	42	43	42	41	43
Average Gain	18.4%	20.3%	23.1%	22.1%	21.3%
CAGR*	11.1%	13.0%	14.1%	13.2%	13.2%
$10,000 Became	$2,326,432	$5,652,842	$9,486,103	$6,155,292	$6,376,346

TABLE 3

Return Characteristics of Five Portfolios for 1990–1999

	Portfolio				
	A	B	C	D	E
Down Years	1	1	2	2	1
Average Loss	(3.1%)	(14.1%)	(10.9%)	(8.5%)	(16.3%)
Worst Year	(3.1%)	(14.1%)	(20.1%)	(16.1%)	(16.3%)
Total Losses	(3.1%)	(14.1%)	(21.7%)	(16.9%)	(16.3%)
Up Years	9	9	8	8	9
Average Gain	21.5%	21.5%	22.8%	20.2%	14.1%
CAGR*	18.2%	18.7%	16.7%	17.1%	12.2%
$10,000 Became	$53,232	$55,527	$46,850	$48,481	$31,316

TABLE 4

Return Characteristics of Five Portfolios Over the Period of 2000–2009

	Portfolio				
	A	B	C	D	E
Down Years	4	4	3	3	4
Average Loss	(20.0%)	(13.9%)	(19.2%)	(18.9%)	(14.0%)
Worst Year	(37.0%)	(36.8%)	(38.8%)	(37.6%)	(40.9%)
Total Losses	(80.1%)	(55.4%)	(57.6%)	(56.8%)	(56.1%)
Up Years	6	6	7	7	6
Average Gain	15.4%	20.2%	22.0%	18.5%	24.6%
CAGR*	(0.9%)	4.7%	8.4%	6.1%	7.2%
$10,000 Became	$9,136	$15,829	$22,402	$18,078	$20,042

**Compound annual growth rate.*
Indexes instead of ETFs are used to provide a longer history of return data. The specific indexes are the S&P 500 index, S&P 500 Pure Value index, S&P SmallCap 600 index, Russell 2000 Value index, MSCI EAFE Value index and Russell RAFI Developed ex-U.S. Small Company index. An initial investment of $10,000 was used for each portfolio.
Source: The Merriman Financial Education Foundation.

have made in these various strategies. Then they'll scan each column to see what "pain" they would have had to endure in order to make that return. It's always easy to see in hindsight how you "should" have invested in the past, but life doesn't work that way.

Investments dish out pain in various ways. When we choose one portfolio over another, in one sense we are choosing the kind of pain that we think will be most acceptable.

The worst one-year loss is easy to understand and not hard to calculate in percentage terms. It acknowledges that for many investors, a year-long period of discouraging news can be challenging and, in some cases, pretty hard to explain or justify to a spouse or partner.

In some ways, the worst one-year loss may be the most powerful way to compare one investment against another. However, investment pain doesn't neatly fit into 12-month increments.

Many investors regard the "real" value of their portfolios as what they were worth at their peaks. For these people, the total drawdown may be the scariest measure of risk.

Personally, I find it interesting to note how many calendar years an investment wound up in the red, and the total of all those yearly losses.

Only you can determine what's likely to cost you

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Measures of Risk Defined

Here are definitions of some of the risk measures highlighted by Paul Merriman. Definitions of other key investing concepts can be found in AAII's Financial Terms Dictionary at www.aaii.com/financial-term-dictionary.

Drawdown: The percentage by which an individual security, portfolio or strategy is down from its all-time high or highest level over a specific period. The larger the drawdown, the larger the loss is relative to the high price used as the benchmark (e.g., the all-time high).

Standard Deviation: A measure of the degree to which returns of an asset vary, either to the upside or the downside, from their average over the period measured. Higher standard deviations indicate higher risk.

Sharpe Ratio: A measure of the risk/return relationship in a security, devised by William Sharpe in 1966. The Sharpe ratio is calculated by subtracting the risk-free rate (such as the return on T-bills) from an asset's average rate of return and dividing by the asset's standard deviation. The higher the ratio, the more excess return investors can expect to receive for the extra volatility they are exposed to by holding a riskier asset. Similarly, a risk-free asset or a portfolio with no excess return would have a Sharpe ratio of zero.

your peace of mind. I suspect it will be some combination of how much you lose, how often you lose it and how quickly you lose it.

Conclusion

The biggest thing I take away from this is the difference between high-quality asset classes and low-quality asset classes.

The S&P 500 represents the highest quality equities, the stocks of companies that are most likely to have excellent management, products and prospects. Value stocks, especially small-cap value, represent the lowest quality. They are the stocks of companies with uncertain futures.

It's ironic, but high-quality asset classes have produced lower returns over long periods. The reason is simple: Demand for such stocks is high among investors, and that drives up their prices. Lower-quality stocks are less in demand, so they have lower prices. This gives such stocks great opportunities for growth.

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History shows that when you combine the security of high-quality stocks with the growth potential of lower-quality ones, you sometimes get a smoother ride, usually a higher return and in some cases you get that at lower risk. The trick is to find that combination.

After you study all this, I'd enjoy knowing what type of investment pain is the most significant to you. Yes, I read my emails: paul@paulmerriman.com. ■

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