STRATOS
INVESTMENT MANAGEMENT

RISK REVISITED – HOW MUCH RISK?

COMMENTARY

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A couple of summers ago, SIM wrote a piece titled, "How Much Risk?", in which we discussed index construction and viewed market risk in terms of Beta. It might be interesting to revisit that topic in light of the gyrations faced by the market over the past year-plus.

Market Risk

In the past piece we discussed portfolio beta (PB) as a way to gauge the riskiness of a portfolio relative to the market. Revisiting the last paper, we may remember that the S&P 500 (which measures the return of the large cap segment[1] of the US equity market) is often considered a proxy of the US equity market. As a proxy for the Market, one would expect its Beta to be 1. (A Beta of 1 means that the asset moves in tandem with the overall stock market[2].) It was interesting to SIM that the calculated portfolio Beta for the S&P 500 as of 6/24/24 was 1.09 – in other words, the index/ portfolio used as a proxy for the market had a Beta that was higher than the market. People investing in the S&P 500 expecting that they were only taking on the risk associated with the equity market, were actually taking more risk than expected.

Does the same hold true today? In a nutshell, yes. However, according to our calculations, investors in the S&P 500 are now taking even more risk than they were nearly two years ago.

In the next few paragraphs, we will review how we calculate portfolio beta and then make some comparisons to both the small-cap and mid-cap versions of S&P's index benchmarks as well as S&P's version of the total market index, the S&P 1500.

Portfolio Beta and the S&P 500

Portfolio Beta is pretty straightforward. It is simply the weighted average of all the individual company betas, where the company beta is weighted by its percentage representation within the benchmark. Perhaps an example will help.

As of April 28, 2026, NVIDIA represented approximately 8.1% of the S&P 500 and its beta was 2.0. To calculate its impact on the portfolio beta, we simply multiply the percentage it represents in the S&P 500 (8.07%) by its beta (2.03) to get its allocated portion of total portfolio beta. We do the same for each company in the S&P 500 and then add up all the allocated company betas to arrive at the calculated portfolio beta of 1.117. Since the portfolio beta is greater than 1, we can infer that a market-cap weighted, S&P 500 stock portfolio will vary more than that of the market… If it varies more than the market then, by definition[3], it carries more risk than the market.

Is it the Index or the Construction?

As we discussed nearly two years ago, the S&P 500 is a market capitalization weighted index. In other words, individual stock weights are determined by the market capitalization of the company relative to the total market capitalization of the index. Since NVIDIA (as indicated above) is the largest company in the S&P 500, it has the biggest weight. In fact, if we look at the ten largest companies in the market capitalization weighted S&P 500, we note that they represent more than 40% of the index. (See below)

Rank	Symbol	Name	Current Market Value	3y BETA
1	NVDA	NVIDIA Corporation	5,263,623.0	2.0
2	GOOGL	Alphabet Inc. Class A	4,238,063.0	0.7
3	AAPL	Apple Inc.	3,928,809.0	0.8
4	MSFT	Microsoft Corporation	3,154,556.0	1.1
5	AMZN	Amazon.com, Inc.	2,808,163.0	1.2
6	AVGO	Broadcom Inc.	1,980,039.0	1.2
7	META	Meta Platforms Inc Class A	1,722,628.0	1.8
8	TSLA	Tesla, Inc.	1,422,178.0	2.0
9	BRK.B	Berkshire Hathaway Inc. Class B	1,019,264.0	0.4
10	WMT	Walmart Inc.	1,017,198.0	0.6
			26,554,521.0	
		% of Total S&P 500 Value	40.72%	

Figure 1 - Source: FactSet

There is, however, another version of the S&P 500 index that is equal-weighted. Rather than give added allocations to the best performing members of the benchmark, the equal-weighted S&P assigns an equivalent, 0.2% weight, to each of the components of the index. Doing the same math as we did for the market-cap weighted index, we find that the Beta of the equal weight S&P 500 is 1.039. (The 5-yr Beta is 1.001.) Might this be a better proxy for the market? Perhaps.

It is important to note that portfolio betas calculated as we have in the above examples are not static. They change over time, which we can verify by looking at the beta at different points in time. For instance, if we compare the beta of the S&P 500 when we wrote our first piece to the beta calculated above, we note that it has moved from 1.093 to 1.117. As such, while the definition of market beta is static at 1, the proxies used as market betas are not, and the market proxy may actually exhibit greater variability (or risk) than the market as a whole.

Has the Index allocation changed since we last looked at market risk? Yes, and the overweight of Information Technology has only gotten worse, having grown from 31.41% of the S&P 500 in June 2024 to 34.35% of the S&P 500 today.[4]

What About Other Indices?

Do other indices exhibit the same risk variances, or do they represent a different risk profile?

By performing the same calculations on each of the other indices (the S&P 1500, 400 and 600) we discover something interesting. The broadest benchmark (S&P 1500) has a beta that doesn't differ meaningfully from the S&P 500 (1.126 vs 1.117) and has the same extreme exposure to the largest stocks in the index while the smaller indices by market capitalization have far less exposure to the largest stocks while exhibiting very meaningfully different betas. The small-cap index (S&P 600) has a beta very close to the "market" beta (1.001 vs 1) while the Mid-Cap beta (S&P 400) is substantially higher than that of the S&P 500 (1.243 vs 1.117).

While it makes sense to us that the S&P 400 should have a higher beta than the S&P 500 (smaller market cap stocks should have a greater degree of risk than larger cap stocks), it makes little sense that small cap stocks (as described by the S&P 600) have not only the smallest beta, but its beta approaches the market beta.

In some respects, the reason (in Sim's view) that the S&P 500 has a larger than market beta is similar to why the S&P 400 has the highest beta – significant allocation variances relative to other indices. In the case of the S&P 500, what stands out is that its most significant sector weighting is also the sector with the highest beta (Information Technology). For the S&P 400, its most significant allocation

is to the Industrials sector which has an average beta that is close to that of its Information Technology beta (1.367 vs 1.402).

The S&P 400 also has the distinction of having five of the highest average sector betas among all indices (whereas the small-cap S&P 600 has five of the lowest average sector betas).

We also looked at longer-term (5yr) betas for each of the indices above, since longer-term betas should tend to smooth out shorter term spikes in volatility. What we found was surprising. Rather than declining, the betas for the S&P 500, S&P 1500 and S&P 600 increased. This indicates to us that the increased volatility for the three indices is not something that is new. Rather, the volatility we have seen seems to be a more "normal" phenomenon.

The only index that saw its longer-term beta decline was the S&P 400, which would indicate to us that the (relatively) increased volatility of the S&P 400 is a more recent phenomenon. Its beta also declined to the point that it experienced lesser volatility than either the market proxy (the S&P 500) and the broadest index (S&P 1500).

What Can Investors Do?

As SIM indicated in our initial comments about portfolio risk, investors should be aware of the risks they are taking when investing in an index. Indices are not static investments. Because of the market cap weighting of standard indices, index investors take understated risks the longer certain stocks or sectors outperform. This exposes investors to greater downside risks than they may be aware or comfortable in more "normal" circumstances.

It may make sense to consider modifying our benchmark focus to more of an equal weight ETF or fund. This would reduce portfolio beta closer to 1 and reset portfolio risk downward while still giving yourself exposure to the stocks that have driven performance.

SIM has always believed that understanding the risks being taken helps reduce the number of unpleasant surprises. In the end, while making money is certainly a good thing, holding on to it when the investment landscape is a little rockier can help to maintain what we have. As stated in the piece we wrote in the summer of 2024, the old investment saying that "bulls make money, bears make money, but pigs get slaughtered" is worth remembering. After all, there is nothing wrong with taking risks – as long as investors are aware of the risks being taken and are being compensated adequately for them.

Footnotes

1. S&P Dow Jones Indices, “S&P U.S. Indices Methodology”, May 2024, page 5, S&P 500: The index measures the performance of the large-cap segment of the U.S. market. Considered to be a proxy of the U.S. Equity Market, the Index is composed of 500 constituent companies.
2. “High Beta Index”, by CFI Team, CFI Education, Inc.
3. “Variability”, by CFI Team, CFI Education, 2015 – 2026
4. In reviewing our data in the charts from The July 2024 article titled “How Much Risk”, we discovered a data calculation error that resulted in the allocations listed being incorrect. We have corrected the data calculation for this article and use the corrected sector allocations.