SOFTWARE INVESTING: RIDING THE ROLLERCOASTER

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Within WisdomTree's suite of thematic equity strategies, both the WisdomTree Team8 Cybersecurity UCITS NTR Index (WTCBRN), tracked by [WisdomTree Cybersecurity UCITS ETF (WCBR)] and BVP Nasdaq Emerging Cloud NTR Index (EMCLOUDN), tracked by [WisdomTree Cloud Computing UCITS ETF (WCLD)] focus largely on Software-as-a-Service (SaaS) companies. There is an overall feeling of concern as we reach the halfway mark in 2024, as we are receiving questions from investors and seeing a range of articles discussing the slowing growth rates in these types of stocks.

Figure 1: Standardised returns as of 31 May 2024

Index	Ticker	YTD	1-year	3-year	5-year	10-year	Since fund inception
WisdomTree Team8 Cybersecurity UCITS Index (NTR)	WTCBRN	-8.25%	16.64%	1.20%	-	-	8.02%
BVP Nasdaq Emerging Cloud Index (NTR)	EMCLOUDN	-12.65%	0.48%	-14.56%	4.58%	19.95%	19.32%

Source: WisdomTree, Bloomberg, as of 31 May 2024. Calculation is based on returns in USD. Return figures for time periods longer than 1 year are annualised. You cannot invest directly in an index. **Historical performance is not an indication of future results and any investments may go down in value.**

What's driving the software rollercoaster?

Upon examining the historical returns, what is immediately noticeable is a quantification of the so-called SaaS return rollercoaster:

- WTCBRN and EMCLOUDN, for their common return history[1] which goes back to January 2021, have an annualised standard deviation of roughly 34% and 39% respectively. Viewed in isolation, 34% or 39% doesn't mean much, but if we can indicate that, over the same period, the S&P 500 Index had an annualised volatility of 17%. This means that the annualised volatility of WTCBRN and EMCLOUDN has been more than 100% higher than that of what many people view as 'the market.'

- If any investment strategy has a volatility approaching 30% annualised, that tells us that the returns that have been experienced have been wildly different at different points in time. This coincides with the experience we hear when speaking to investors, some of them may have had a positive experience, while others – mostly the ones we speak with – have had a negative experience.

What has caused the above 30% annualised volatility?

There is no way to isolate a singular cause for share prices moving in different ways at different times, but if we step back and consider what has characterised asset price behaviour from January 2021, one macroeconomic variable has dominated above all others.

- In 2021, for the most part, developed market central banks had interest rates at or near 0%, and many were engaged in policies that were also expanding monetary bases. Policies such as this can push the valuations of riskier assets higher. Often, SaaS companies are new to public markets and show how they can use software to solve specific problems in more efficient ways. Lower interest rates lower the opportunity cost of capital that needs to be employed to run these businesses for them to achieve scale.

- In 2022, developed-market central banks changed course to fight inflation, raising interest rates at a historic pace. SaaS returns were extremely challenged, as were the returns of most asset classes. Even though WTCBRN and EMCLOUDN were challenged return-wise, because most asset prices were also delivering negative returns, there was less contrast and less noticeable.

- In 2023, the market started to employ a more 'forward-looking' character. We found it interesting that, from the end of October 2023 to the end of the year, market participants were discounting the strong view that the US Federal Reserve would cut its policy rate in early 2024. There was a massive upward response in the share prices of riskier, more speculative, tech companies. WTCBRN and EMCLOUDN were positively impacted. However, this behaviour injected risk into these strategies in that, while we cannot say that the share prices were rising solely due to interest rates (a factor that the companies do not directly influence), it was a main reason. If the market needed to adjust, possibly because the US Federal Reserve was slower to cut rates, it's possible that a chunk of the higher valuations at the end of 2023 assumed a rate cut.

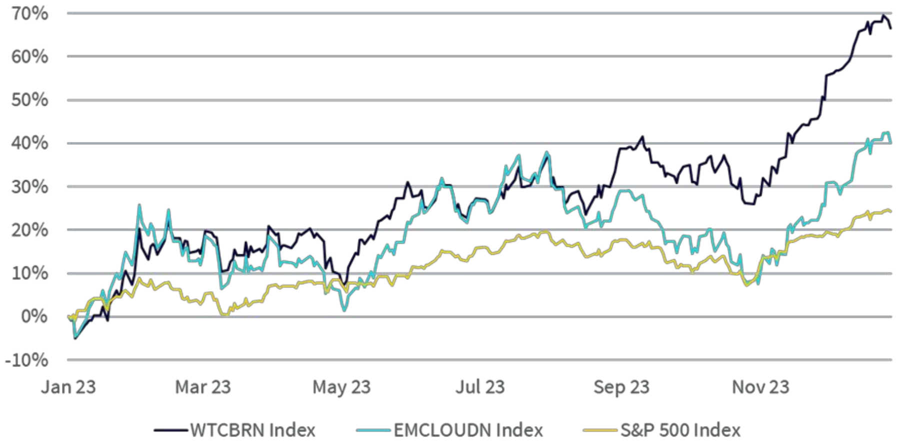
- 2024 has been a year defined largely by the need to continually push any expectation of a US Federal Reserve policy rate cut further and further into the future. Unfortunately, the companies' revenue growth within WTCBRN and EMCLOUDN is not enough to cancel the adjustment to a 'higher for longer' interest rate policy.

In what follows, we quantify this thinking using illustrations from the historical data.

In Figure 2, many may not directly remember that WTCBRN was up almost 70% during 2023 since the character of returns observed in 2024 has been very different. EMCLOUDN was only up about 40%. Both of these strategies dramatically outperformed the S&P 500 Index during 2023.

What's clear is that most of this outperformance came during the last two months of 2023, so we must zoom in there.

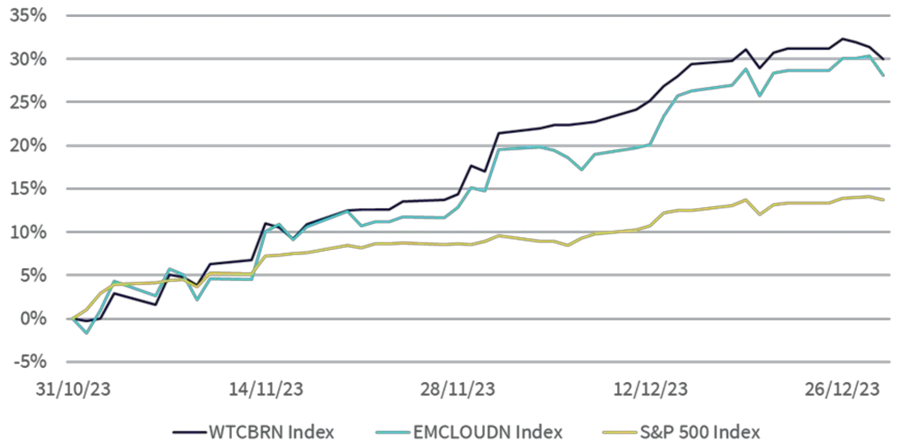
Figure 2: 2023 Returns of WTCBRN and EMCLOUDN were quite strong



Source: WisdomTree, Bloomberg. Daily data from 02 January 2023 to 29 December 2023. Calculations are based on returns in USD. You cannot invest directly in an index. **Historical performance is not an indication of future results and any investments may go down in value.**

In Figure 3, we focus on the period from 31 October 2023 to 31 December 2023. Both WTCBRN and EMCLOUDN were up roughly 30%. We cannot say that this move was solely due to expectations of lower interest rates, but we can say that it was a major factor that created a risk of mispricing if the path of interest rates was going to stay higher for longer.

Figure 3: Zooming in on the final two months of 2023



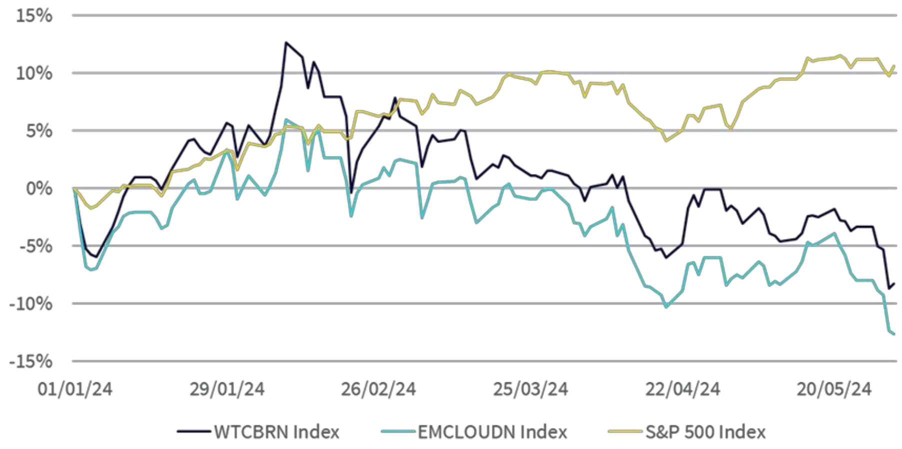
Source: WisdomTree, Bloomberg. Daily data from 31 October 2023 to 29 December 2023. Calculations are based on returns in USD. You cannot invest directly in an index. **Historical performance is not an indication of future results and any investments may go down in value.**

In Figure 4, we see the challenge faced by WTCBRN and EMCLOUDN in 2024. Now, most of the underlying constituent companies are growing revenues, year-over-year, above 10%. Some are growing revenues above 20% or even above 30%. However, the growth is not accelerating, and investors are not getting anywhere near as excited as they might have been in 2020 or 2021. In short, the growth we are experiencing is not enough to cancel out the negative impact on valuations of higher-for-longer interest rates[2].

WTCBRN and EMCLOUDN are underperforming the S&P 500 Index, but we'd caution against benchmarking these rather narrow, high-volatility strategies against such a broad benchmark since we expect the return experience to always be dramatically different.

We believe that, with the higher risk of WTCBRN and EMCLOUDN, the time horizon needs to be extended. Anyone who needs to focus heavily on the 2024 performance results in a portfolio may face a significant risk of a negative return contribution from these strategies.

Figure 4: The performance challenges of 2024 (through 31 May 2024)

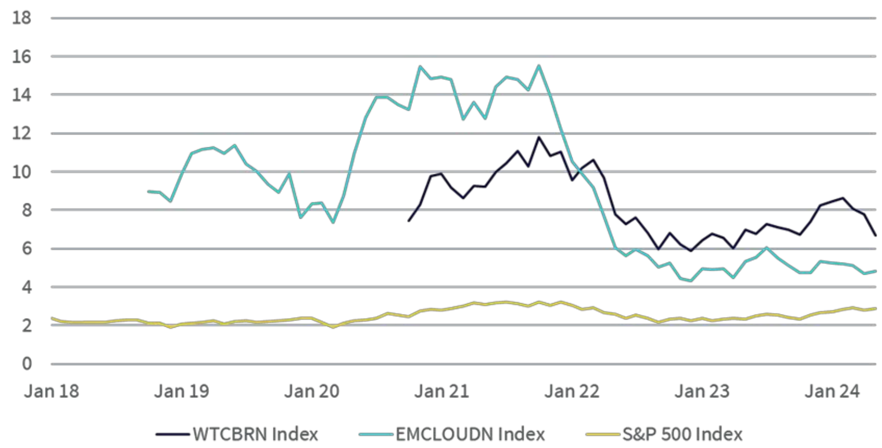


Source: WisdomTree, Bloomberg. Daily data from 01 January 2024 to 31 May 2024. Calculations are based on returns in USD. You cannot invest directly in an index. **Historical performance is not an indication of future results and any investments may go down in value.**

Valuation vs. growth: The critical question in software

WTCBRN and EMCLOUDN are also 'expensive' from a valuation perspective. However, Figure 5 shows valuations were significantly higher in 2021 when interest rates were at or near zero. The massive rallies in WTCBRN and EMCLOUDN at the end of 2023 were likely largely driven by interest rate expectations. However, interest rate expectations can change and are independent of company results. Maybe it is accurate to indicate that, as we started 2024, these stocks, in many cases, were too expensive If the US Federal Reserve was not going to cut its policy rate quite quickly.

Figure 5: Price to sales ratios over time for WTCBRN, EMCLOUDN and the S&P 500 Index (January 2017 to May 2024)



Source: WisdomTree, Bloomberg. Monthly data as of 31 May 2024. Trailing 12-months Sales data applied. You cannot invest directly in an index. **Historical performance is not an indication of future results and any investments may go down in value.**

Now, anytime software companies are in focus, we caution investors to look at valuation without looking at growth. Figures 6a and 6b indicate measures of both sales growth and EBITDA[3] growth, examined from both a median and a weighted average basis.

- In our view, this speaks to why investors waiting for software-focused strategies to have the same or even lower valuations than the S&P 500 Index could be waiting a very long time. Structurally, these businesses tend to grow sales and EBITDA much faster than the broad-based benchmark. That doesn't mean they always outperform, but since investors tend to be willing to pay up for growth, it is hard to see 'valuation discounts' with WTCBRN and EMCLOUDN.
- The reason we show both sales growth and EBITDA growth is that we are seeking to show something that represents the top line of the income statement – before any expenses are considered, and then to show a measure that is closer to the concept of 'operating earnings', which does include various expenses related to running the day-to-day business. Still, we note that we do not show measures of bottom-line earnings since significant portions of companies within WTCBRN and EMCLOUDN are not profitable, meaning they do not have positive net income as of the most recent reporting period.

Figure 6a: Measures of Sales Growth as of 31 May 2024

		Median sales growth			Weighted average sales growth		
Index	**Ticker**	**1-year**	**3-year**	**5-year**	**1-year**	**3-year**	**5-year**
WisdomTree Team8 Cybersecurity UCITS Index (NTR)	WTCBRN	16.5%	20.7%	15.9%	21.4%	26.0%	20.9%
BVP Nasdaq Emerging Cloud Index (NTR)	EMCLOUDN	20.0%	26.5%	25.5%	20.5%	26.8%	26.8%
S&P 500 Index	SPX	4.6%	6.4%	6.4%	11.6%	15.4%	12.5%

Source: WisdomTree, FactSet as of 31 May 2024. You cannot invest directly in an index. **Historical performance is not an indication of future results and any investments may go down in value.**

Figure 6b: Measures of EBITDA Growth as of 31 May 2024

		Median EBITDA growth			Weighted average EBITDA growth		
Index	**Ticker**	**1-year**	**3-year**	**5-year**	**1-year**	**3-year**	**5-year**
WisdomTree Team8 Cybersecurity UCITS Index (NTR)	WTCBRN	21%	45%	25%	34%	102%	94%
BVP Nasdaq Emerging Cloud Index (NTR)	EMCLOUDN	38%	169%	104%	49%	121%	114%
S&P 500 Index	SPX	6%	9%	7%	25%	19%	17%

Source: WisdomTree, FactSet, as of 31 May 2024. You cannot invest directly in an index. **Historical performance is not an indication of future results and any investments may go down in value.**

Conclusion: The world needs cybersecurity and cloud computing

There's a large divergence between what the world thinks about the themes of cybersecurity and cloud computing through their actions and the share price performance of the companies within WTCBRN and EMCLOUDN.

As we adopt more AI, we will also need more cybersecurity. AI is a tool that can be used in both negative ways and positive ways. The higher the level of adoption, the more security is required.

We don't know which cybersecurity companies will be the long-term winners, which is why we like a basket and ETF approach.

Nvidia is getting the lion's share of attention in the technology space. If we think about who is buying the chips, it is the companies that offer the largest public cloud computing infrastructure. The world is spending hundreds of billions of dollars over a period of years to build more compute infrastructure in the cloud than we have ever had. However, we do not know yet which companies will be the long-term winners based on what they are using AI to do.

This divergence from the theme's potential and the current share price performance signals a time to invest over the long term. With big technology shifts, very little happens in the earlier years of the transition. However, in the later years, the compounding effect of the growth can be quite large. Volatility will likely remain quite high, but if we follow the spending, the world loves and needs both cybersecurity and cloud computing.

Figure 7: Other information about WTCBRN and EMCLOUDN, as of 31 May 2024

Fundamentals	WisdomTree Team8 Cybersecurity UCITS Index (NTR)	BVP Nasdaq Emerging Cloud Index (NTR)
Ticker	WTCBRN	EMCLOUDN
Price to sales ratio	6.7x	4.8x
Price to book ratio	7.0x	5.8x
Price to cash flow ratio	29.6x	29.8x
Est. price to earning ratio	38.1x	31.7x
Est. price to earning ratio (excluding firms with negative earnings)	36.8x	29.5x
% of firms with negative earnings	41.9%	62.0%

Sources: WisdomTree, FactSet, as of 31 May 2024. You cannot invest directly in an index. **Historical performance is not an indication of future results and any investments may go down in value.**

[1] Specific period of calculation: 04 January 2021 to 31 May 2024.

[2] Growth rates are sourced from Bloomberg and represent the year-over-year sales growth of the most recent quarterly financial report of the respective constituents within WTCBRN or EMCLOUDN, available as of May 31, 2024.

[3] EBITDA stands for Earnings before Interest, Taxes, Depreciation and Amortization and allows investors to go down the income statement and get closer to a measure of 'Operating Earnings.'

Related Products

+ WisdomTree Cybersecurity UCITS ETF – USD Acc (WCBR/CYSE)

+ WisdomTree Cloud Computing UCITS ETF - USD Acc (WCLD/KLWD)

View the online version of this article here.

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