Software investing: Riding the rollercoaster

Published 12 June 2024

Christopher Gannatti, CFA
Global Head of Research

Baoqi Zhu
Associate Director, Quantitative Research & Multi Asset Solutions

Key Takeaways

- The WisdomTree Team8 Cybersecurity UCITS Index and BVP Nasdaq Emerging Cloud Index have experienced high volatility, with an annualised standard deviation of above 30% compared to the S&P 500 Index's annualised volatility of 17%.
- The performances of the two indices have been influenced by changes in interest rates, with low rates in 2021 boosting valuations, rate hikes in 2022 challenging returns and rate cut expectations in 2023 driving share prices higher.
- Despite concerns about valuations and volatility, the long-term potential of cybersecurity and cloud computing remains strong due to increasing AI adoption and the need for related infrastructure.

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.

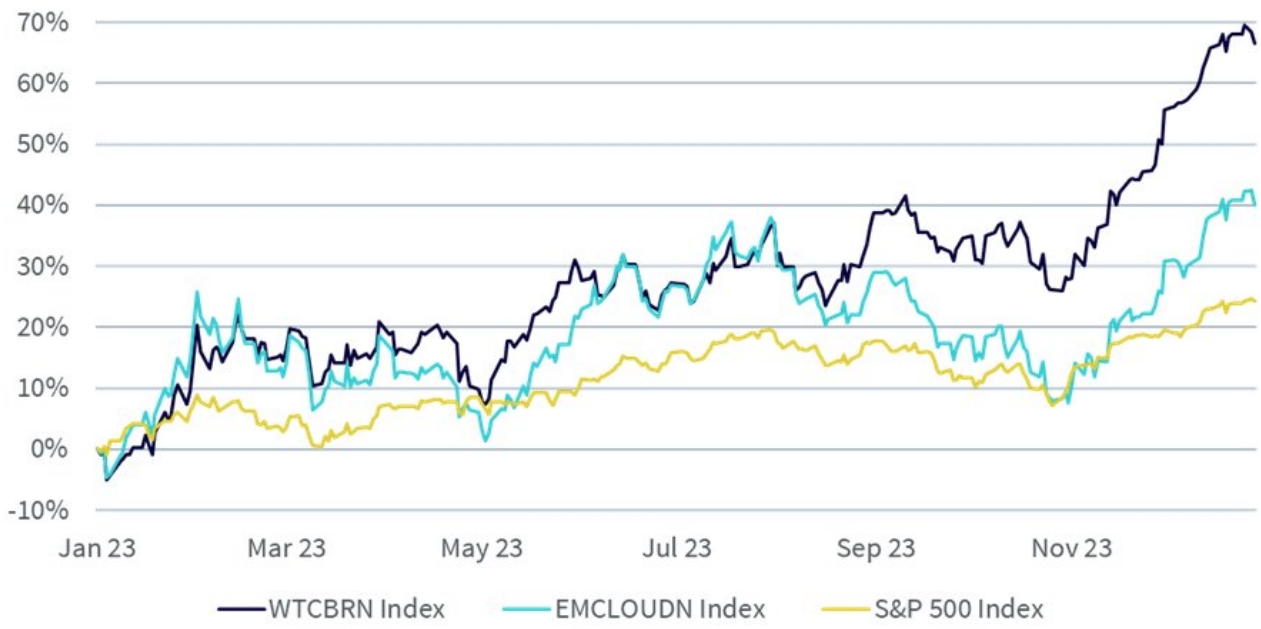
- In 2023, the market started to employ a more ‘forward-looking’ character. We found it interesting that, from the end of October 2023 to the end of the year, market participants were discounting the strong view that the US Federal Reserve would cut its policy rate in early 2024. There was a massive 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.

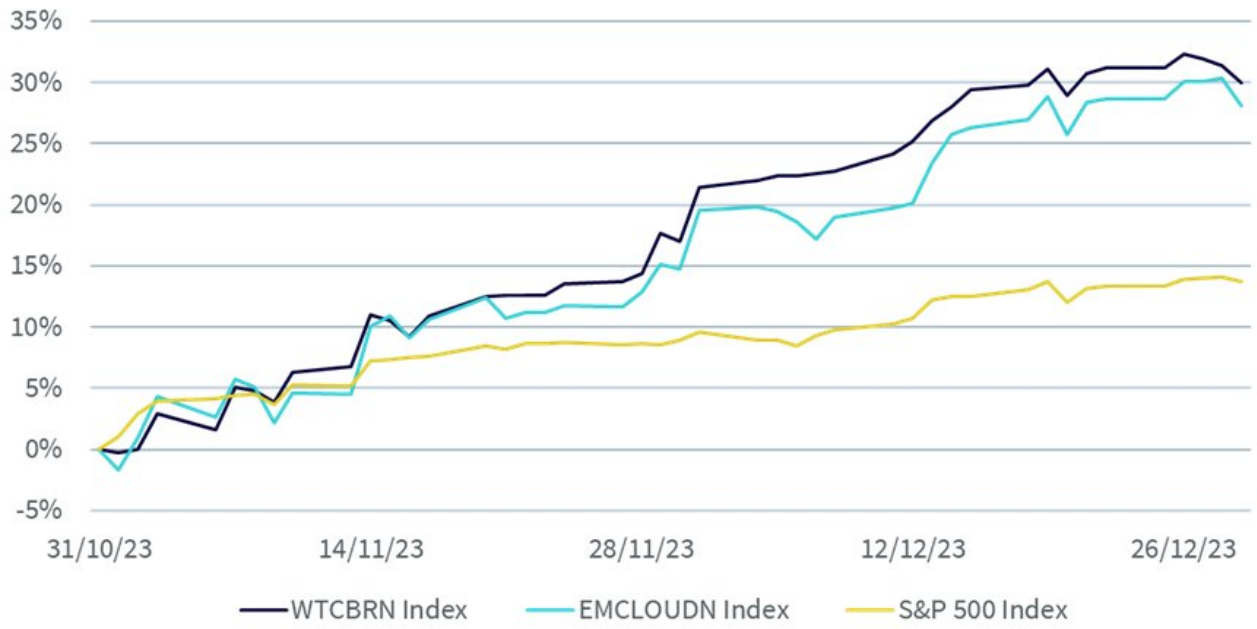
Figure 2: 2023 Returns of WTCBRN and EMCLOUDN were quite strong



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



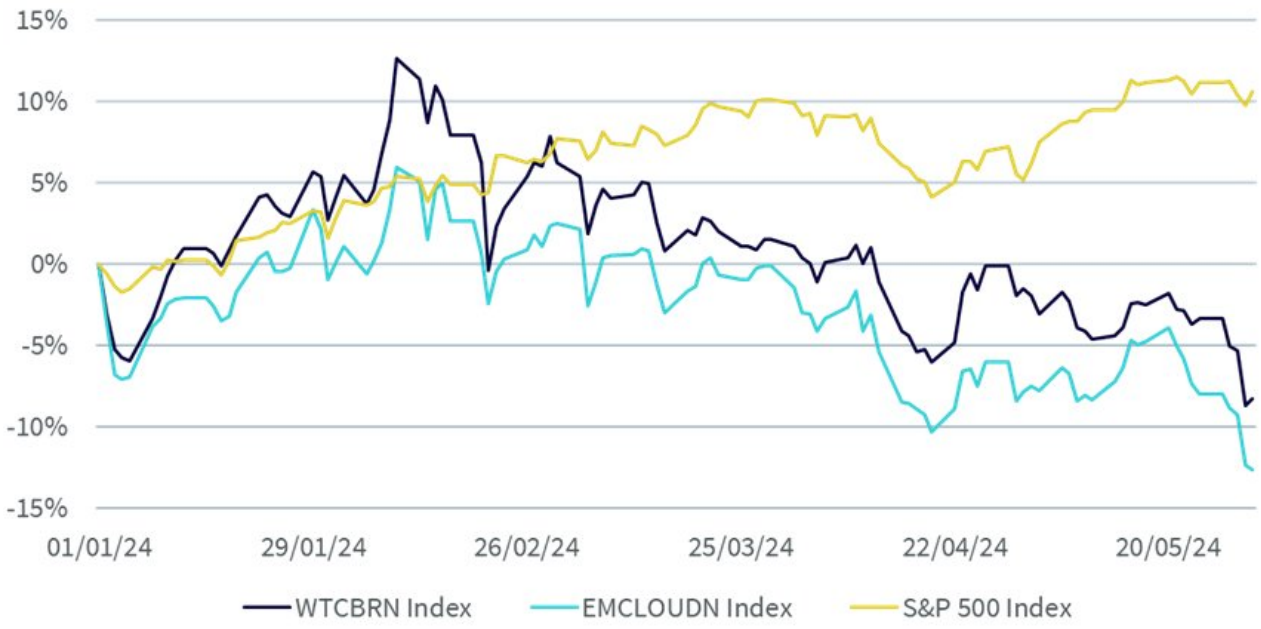
Source: WisdomTree, Bloomberg. Daily data from 31 October 2023 to 29 December 2023. Calculations are based on returns in USD. You cannot invest directly in an index. **Historical performance is not an indication of future results and any investments may go down in value.**

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 bench-marking 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)

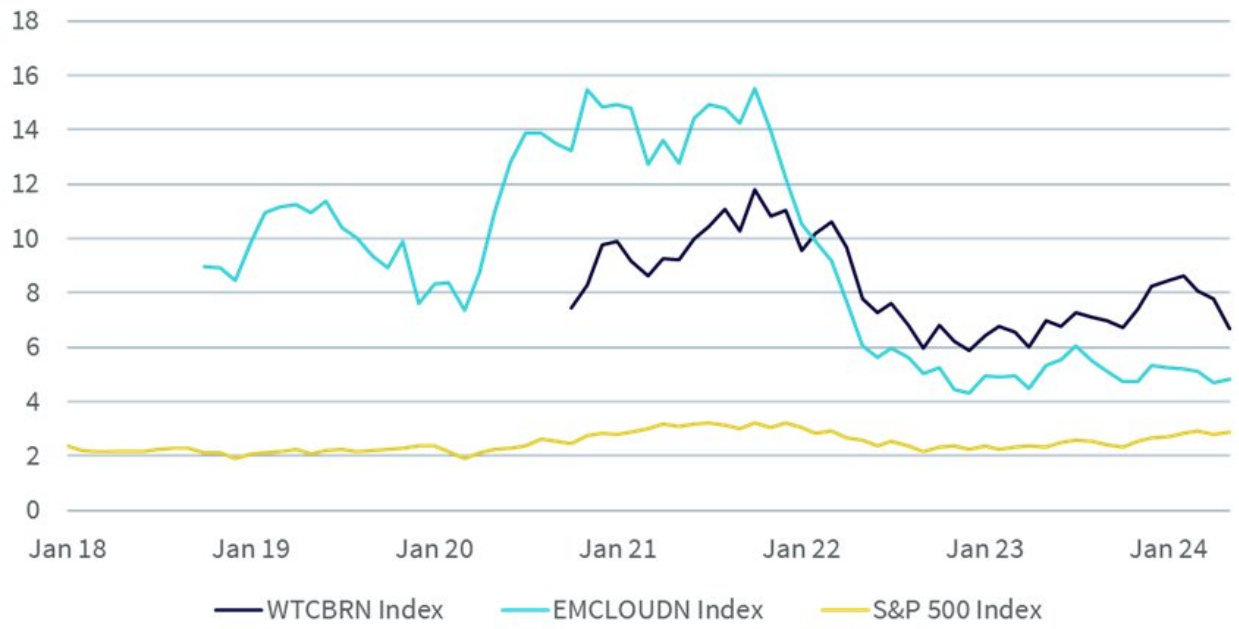


Source: WisdomTree, Bloomberg. Daily data from 01 January 2024 to 31 May 2024. Calculations are based on returns in USD. You cannot invest directly in an index. **Historical performance is not an indication of future results and any investments may go down in value.**

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					
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					
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.’

Important Risks Related to this Article

IMPORTANT INFORMATION

Marketing communications issued in the European Economic Area ("EEA"): This document has been issued and approved by WisdomTree Ireland Limited, which is authorised and regulated by the Central Bank of Ireland.

Marketing communications issued in jurisdictions outside of the EEA: This document has been issued and approved by WisdomTree UK Limited, which is authorised and regulated by the United Kingdom Financial Conduct Authority.

WisdomTree Ireland Limited and WisdomTree UK Limited are each referred to as "WisdomTree" (as applicable). Our Conflicts of Interest Policy and Inventory are available on request.

For professional clients only. Past performance is not a reliable indicator of future performance. Any historical performance included in this document may be based on back testing. Back testing is the process of evaluating an investment strategy by applying it to historical data to simulate what the performance of such strategy would have been. Back tested performance is purely hypothetical and is provided in this document solely for informational purposes. Back tested data does not represent actual performance and should not be interpreted as an indication of actual or future performance. The value of any investment may be affected by exchange rate movements. Any decision to invest should be based on the information contained in the appropriate prospectus and affer seeking independent investment, tax and legal advice. These products may not be available in your market or suitable for you. The content of this document does not constitute investment advice nor an offer for sale nor a solicitation of an offer to buy any product or make any investment.

An investment in exchange-traded products ("ETPs") is dependent on the performance of the underlying index, less costs, but it is not expected to match that performance precisely. ETPs involve numerous risks including among others, general market risks relating to the relevant underlying index, credit risks on the provider of index swaps utilised in the ETP, exchange rate risks, interest rate risks, inflationary risks, liquidity risks and legal and regulatory risks.

The information contained in this document is not, and under no circumstances is to be construed as, an advertisement or any other step in furtherance of a public offering of shares in the United States or any province or territory thereof, where none of the issuers or their products are authorised or registered for distribution and where no prospectus of any of the issuers has been filed with any securities commission or regulatory authority. No document or information in this document should be taken, transmitted or distributed (directly or indirectly) into the United States. None of the issuers, nor any securities issued by them, have been or will be registered under the United States Securities Act of 1933 or the Investment Company Act of 1940 or qualified under any applicable state securities statutes.

This document may contain independent market commentary prepared by WisdomTree based on publicly available information. Although WisdomTree endeavours to ensure the accuracy of the content in this

document, WisdomTree does not warrant or guarantee its accuracy or correctness. Any third party data providers used to source the information in this document make no warranties or representation of any kind relating to such data. Where WisdomTree has expressed its own opinions related to product or market activity, these views may change. Neither WisdomTree, nor any affiliate, nor any of their respective officers, directors, partners, or employees accepts any liability whatsoever for any direct or consequential loss arising from any use of this document or its contents.

This document may contain forward looking statements including statements regarding our belief or current expectations with regards to the performance of certain assets classes and/or sectors. Forward looking statements are subject to certain risks, uncertainties and assumptions. There can be no assurance that such statements will be accurate and actual results could differ materially from those anticipated in such statements. WisdomTree strongly recommends that you do not place undue reliance on these forward-looking statements.

WisdomTree Issuer ICAV

The products discussed in this document are issued by WisdomTree Issuer ICAV (“WT Issuer”). WT Issuer is an umbrella investment company with variable capital having segregated liability between its funds organised under the laws of Ireland as an Irish Collective Asset-management Vehicle and authorised by the Central Bank of Ireland (“CBI”). WT Issuer is organised as

an Undertaking for Collective Investment in Transferable Securities (“UCITS”) under the laws of Ireland and shall issue a separate class of shares (''Shares”) representing each fund. Investors should read the prospectus of WT Issuer (“WT Prospectus”) before investing and should refer to the section of the WT Prospectus entitled 'Risk Factors' for further details of risks associated with an investment in the Shares.

WisdomTree Cloud Computing UCITS ETF

Nasdaq® is a registered trademark of Nasdaq, Inc. (which with its affiliates is referred to as the “Corporations”) and is licensed for use by WisdomTree Management Limited. The WisdomTree Cloud Computing UCITS ETF (the “Fund”) has not been passed on by the Corporations as to its legality or suitability. Shares in the Fund are not issued, endorsed, sold, or promoted by the Corporations. THE CORPORATIONS MAKE NO WARRANTIES AND BEAR NO LIABILITY WITH RESPECT TO THE FUND.

The information set forth in the BVP Nasdaq Emerging Cloud Index is provided for informational and discussion purposes only and is not intended to be, and shall not be regarded or construed as, a recommendation for a transaction or investment or financial, tax, investment or other advice of any kind by Bessemer Venture Partners (“BVP”). BVP makes no warranty or representation regarding any such information or the data presented in such materials. BVP and/or pooled investment vehicles which it manages, and individuals and entities affiliated with such vehicles, may purchase, sell or hold securities of (a) issuers that are constituents of the BVP Nasdaq Emerging Cloud Index or (b) the Fund itself from time to time and at any time, including in advance of or following an issuer being added to or removed from the BVP Nasdaq Emerging Cloud Index.

The information attributable to BVP is provided for informational and discussion purposes only and is not intended to be, and shall not be regarded or construed as, a recommendation for a transaction or investment or financial, tax, investment or other advice of any kind by BVP. BVP makes no warranty or representation regarding any such information or the data presented in such materials.

Notice to Investors in Switzerland – Qualified Investors

This document constitutes an advertisement of the financial product(s) mentioned herein.

The prospectus and the key investor information documents (KIID) are available from WisdomTree's website: **https:** //www.wisdomtree.eu/en-ch/resource-library/prospectus-and-regulatory-reports

Some of the sub-funds referred to in this document may not have been registered with the Swiss Financial Market Supervisory Authority ("FINMA"). In Switzerland, such sub-funds that have not been registered with FINMA shall be distributed exclusively to qualified investors, as defined in the Swiss Federal Act on Collective Investment Schemes or its implementing ordinance (each, as amended from time to time). The representative and paying agent of the sub-funds in Switzerland is Société Générale Paris, Zurich Branch, Talacker 50, PO Box 5070, 8021 Zurich, Switzerland. The prospectus, the key investor information documents (KIID), the articles of association and the annual and semi-annual reports of the sub-funds are available free of charge from the representative and paying agent. As regards distribution in Switzerland, the place of jurisdiction and performance is at the registered seat of the representative and paying agent.

For Investors in France

The information in this document is intended exclusively for professional investors (as defined under the MiFID) investing for their own account and this material may not in any way be distributed to the public. The distribution of the Prospectus and the offering, sale and delivery of Shares in other jurisdictions may be restricted by law. WT Issuer is a UCITS governed by Irish legislation, and approved by the Financial Regulatory as UCITS compliant with European regulations although may not have to comply with the same rules as those applicable to a similar product approved in France. The Fund has been registered for marketing in France by the Financial Markets Authority (Autorité des Marchés Financiers) and may be distributed to investors in France. Copies of all documents (i.e. the Prospectus, the Key Investor Information Document, any supplements or addenda thereto, the latest annual reports and the memorandum of incorporation and articles of association) are available in France, free of charge at the French centralizing agent, Societe Generale at 29, Boulevard Haussmann, 75009, Paris, France. Any subscription for Shares of the Fund will be made on the basis of the terms of the prospectus and any supplements or addenda thereto.

For Investors in Malta: This document does not constitute or form part of any offer or invitation to the public to subscribe for or purchase shares in the Fund and shall not be construed as such and no person other than the person to whom this document has been addressed or delivered shall be eligible to subscribe for or purchase shares in the Fund. Shares in the Fund will not in any event be marketed to the public in Malta without the prior authorisation of the Maltese Financial Services Authority.

For Investors in Monaco: This communication is only intended for duly registered banks and/or licensed portfolio management companies in Monaco. This communication must not be sent to the public in Monaco.