Stephens Investment Management Group®

The following contains a brief discussion of the equity markets from Senior Quantitative Analyst, Charles Clavel, CFA.

The Return of Volatility

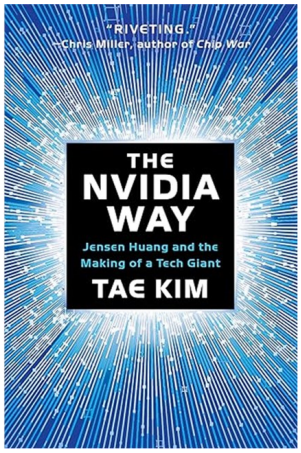
After a couple of years of above average returns with little volatility, it would be reasonable to expect the market to deliver in 2025 a return that is more inline with historical averages (regression to the mean), and potentially with higher volatility.

One source of market volatility lies in potential shocks or shifts within the AI theme, since the Magnificent Seven represent a very large percentage of market benchmarks (29% of the Russell 3000®, 53% of the Russell 3000® Growth), and are major contributors to the overall US market's valuation multiple and earnings growth.

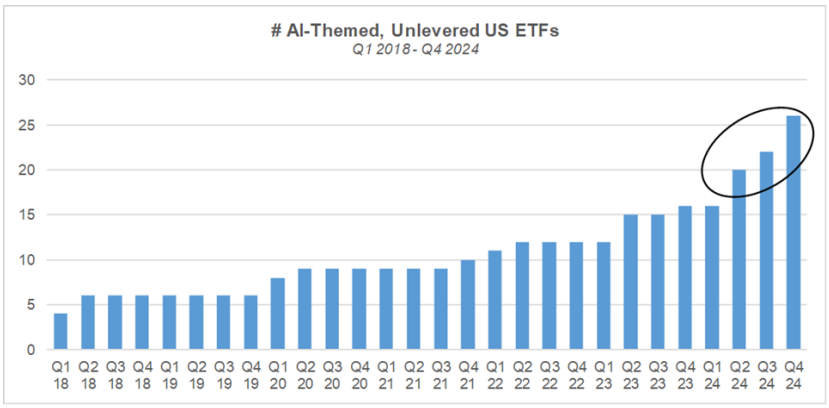
Since the release of ChatGPT, the companies that are driving the buildup in AI capabilities have experienced strong and steady momentum in their stock price. However, the release by a Chinese company – DeepSeek – of AI models whose performance is on par with that of the latest ones from OpenAI (GPT-4o and GPT-4o1) has sent shockwaves in the world of US tech, with many AI stocks experiencing significant declines on January 27th. **What shocked investors was that DeepSeek was able to develop its V3 and R1 models without having access to the latest NVDIA chips** (which are banned from export to China), and presumably at a fraction of the cost and compute of OpenAI's and Meta's models. Some commentators saw a throwback to the Cold War era when the launch by the USSR of the first artificial Earth satellite – Sputnik – in 1957 took the US defense establishment by surprise and stoked fears of the US lagging in the space race.

The paradigm that has dominated the thought process in the AI community finds its source in a blog post by computer scientist Rich Sutton in 2019 called **"The Bitter Lesson": "*The biggest lesson that can be read from 70 years of AI research is that general methods that leverage computation are ultimately the most effective, and by a large margin*".** In other words, general methods (like the transformer neural network architecture) combined with massive amounts of compute – provided by cutting edge NVDIA chips – is the best way to achieve more advanced AI. It triggered a race by the hyperscalers to secure as many of those advanced chips as possible, with little regard for the cost. **Since NVDA has a monopoly on those chips and China can't access them, it instilled a sense of confidence that (1) China would not be able to catch up in the AI race and (2) we would be able to achieve human or super-human intelligence in a relatively short timeframe.**

Magazines' and business books' covers can provide insights into sentimental extremes regarding a given theme, person or company. Journalists feel confident to put CEOs or companies on the cover of their publication only after they have achieved substantial amounts of success, by which time their momentum is near the end. **The cover of the latest issue of Bloomberg Businessweek on Sam Altman with his stated goal of achieving super-intelligence and the recent book (published on December 10th) on the story of Jensen Huang and NVIDIA showcase the prevailing extremely positive sentiment on the AI theme.**

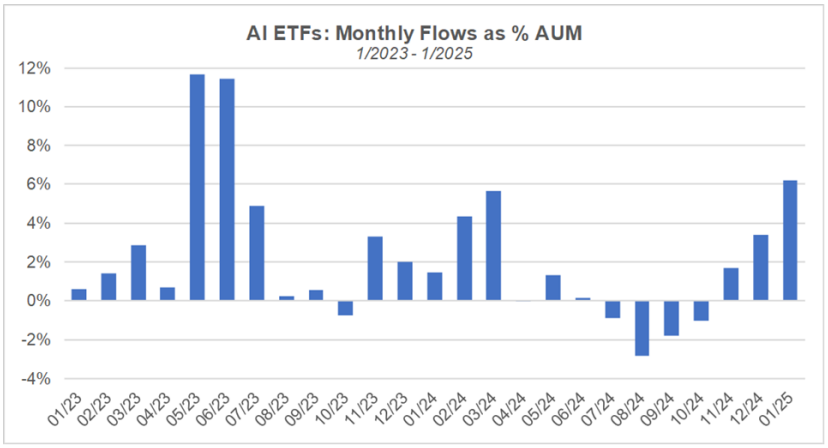


Another indicator of bullish sentiment on AI is the acceleration in the issuance of new AI-themed ETFs, which is notable since Q2 2024.



Source: FactSet, SIMG Analysis

Flows into AI ETFs have also been pretty robust since the release of ChatGPT, with a noticeable acceleration in the past 3 months.



Source: FactSet, SIMG Analysis

The past couple of years have also seen the advent of single stock leveraged ETFs, which have been popular among retail traders. The table below shows the stocks that are the underlying assets behind currently available leveraged single stock ETFs. The list includes many names that are related to AI.

US Stocks In Single Stock Leveraged ETFs

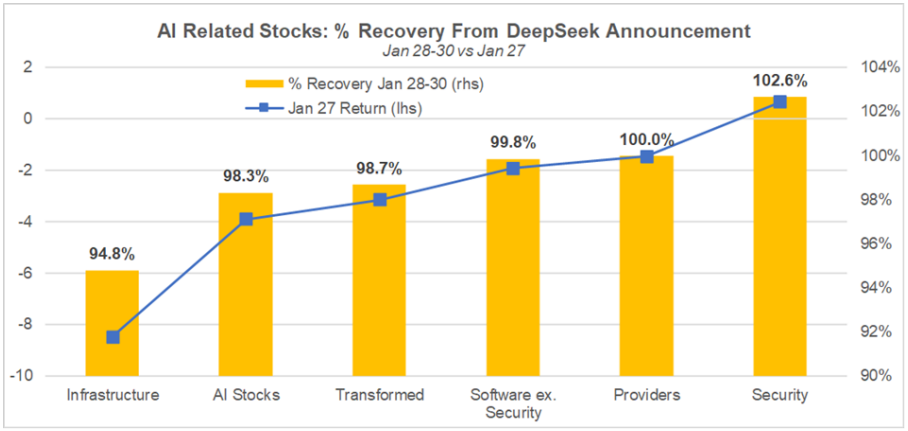
As of 1/31/2025

Ticker	Name	# Leveraged ETFs	Total AUM ($M)	Min Launch Date	1/27 Return
NVDA	NVIDIA CORPORATION	5	6,513.6	20221213	(16.97)
TSLA	TESLA INC	7	5,909.0	20220809	(2.32)
MSTR	MICROSTRATEGY INC	2	3,094.7	20240815	(1.63)
COIN	COINBASE GLOBAL INC	1	1,155.3	20220809	(6.71)
PLTR	PALANTIR TECHNOLOGIES INC	2	354.5	20240903	(4.48)
AMD	ADVANCED MICRO DEVICES INC	2	311.9	20240304	(6.37)
META	META PLATFORMS INC	2	262.7	20221213	1.91
AMZN	AMAZON COM INC	2	243.7	20220907	0.24
MSFT	MICROSOFT CORP	3	196.3	20220907	(2.14)
AAPL	APPLE INC	3	192.1	20220809	3.18
GOOGL	ALPHABET INC	2	176.2	20220907	(4.20)
AVGO	BROADCOM INC	2	151.7	20240821	(17.40)
SMCI	SUPER MICRO COMPUTER INC	2	139.3	20240821	(12.62)
NFLX	NETFLIX INC	2	38.3	20240927	(0.58)
UBER	UBER TECHNOLOGIES INC	1	24.5	20240903	0.31
MU	MICRON TECHNOLOGY INC	2	24.2	20241010	(11.71)
LLY	ELI LILLY & CO	1	19.6	20240807	2.90
RIOT	RIOT PLATFORMS INC	1	15.2	20250102	(15.44)
SOFI	SOFI TECHNOLOGIES INC	1	9.8	20250115	(10.27)
BRK.B	BERKSHIRE HATHAWAY INC DEL	1	9.6	20241211	2.48
CRWD	CROWDSTRIKE HLDGS INC	1	8.0	20241111	(0.31)

Source: FactSet, SIMG Analysis

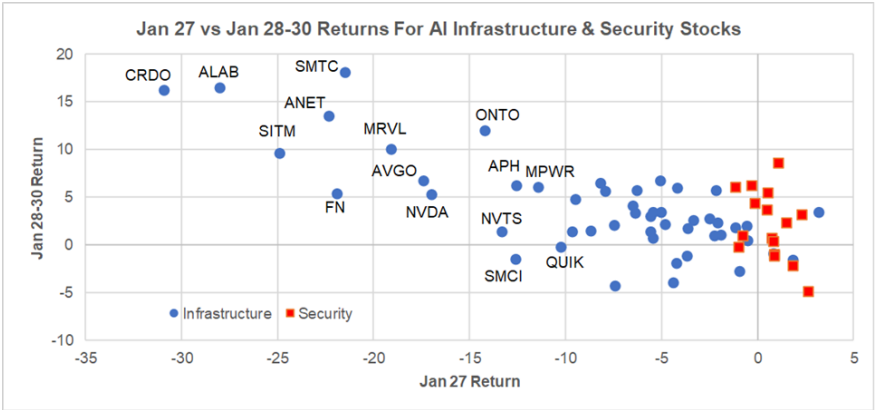
The initial reaction to the announcement of DeepSeek's models was primarily to minimize the significance of the achievement. Their methods are not revolutionary. They under-estimated their training costs. Their models' performance is over estimated. They violated the US export ban. They stole intellectual property from OpenAI. While it is very possible that the true cost or amount of compute involved in developing those models are greater than what the company published in its research papers, **it remains that it was able to achieve performance like OpenAI's models with much smaller amounts of compute**. As to the IP theft rationale, it refers to the practice of "distillation", which consists of using the output of an existing model to train your model. It could be considered "free riding", but it is widespread practice in the AI community. The reality is that faced with limited compute resources, **DeepSeek couldn't follow the paradigm mentioned above. They had to deploy innovations that could help them make the most efficient use of their hardware**, including for example a mixture-of-experts architecture (with sub-models that specialize in specific areas) and custom programming to optimize how GPUs communicate with each other.

The strong performance of the V3 and R1 models has led the market to question, on January 27th, whether AI companies' large capital expenditures were justified. As shown below, **infrastructure related stocks had the worst performance that day. By contrast, AI security fared best, with a slightly positive return on average**. However, in the subsequent 3 days (Jan 28-30), the market recovered most of the ground lost on the 27th, and so did many of the AI stocks. The chart is based on a universe of 180 AI related US stocks created from the holdings of AI themed ETFs, which were then classified into several buckets: "infrastructure" (semis and hardware industry groups), "transformed by AI" (AI themed stocks outside the tech sector), "AI providers" (MSFT, META, GOOGL), "AI Security" (software stocks that belong to both an AI ETF and a Cybersecurity ETF), and "Software ex. Security".



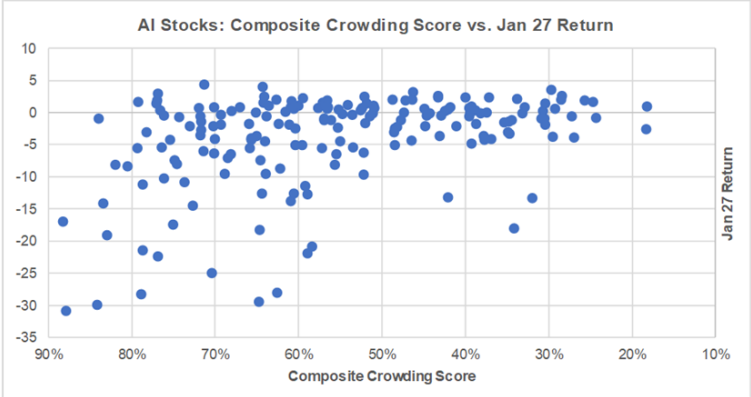
Source: FactSet, SIMG Analysis

The chart below further illustrates the contrast in the behavior of infrastructure vs. security stocks. While most security stocks experienced moderate declines at worst and recovered most of those declines, many infrastructure stocks have not recovered the initial drawdown from Jan 27th in the subsequent 3 days.



Source: FactSet, SIMG Analysis

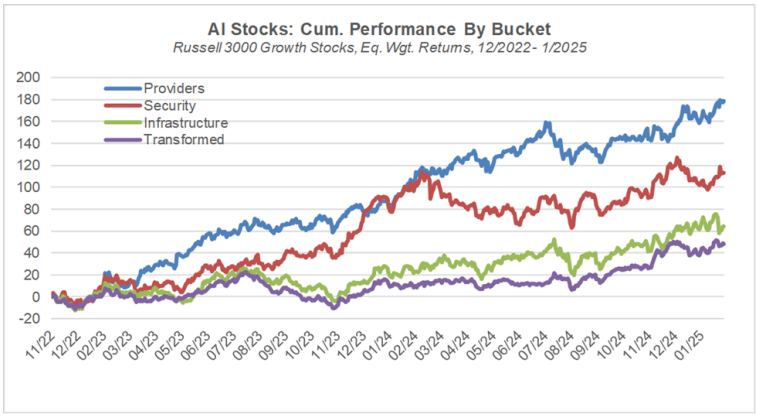
The large declines by some AI stocks on Jan 27th can be in part explained by the high investor expectations placed upon those stocks. I created a crowding score which consists of an equally weighted mix of 3 indicators: price momentum since the beginning of the current bull market in October 2022, FY2 vs. FY1 revenue growth expectations, and the percentage of sell-side analysts with a "Buy" or "Overweight "rating on the stock. The crowding scores are normalized relative to the Russell 3000® Growth universe. **The AI stocks that have experienced the most negative returns on Jan 27th tend to have elevated crowding scores.** Across the 180 AI stocks, the correlation between the crowding score and the Jan 27th return is -0.4. The table below the chart shows the 15 most and least crowded AI-themed stocks. Note that there are a few exceptions of AI stocks with high investor expectations that did not crash that day, including AXON and NOW.



MOST CROWDED				LEAST CROWDED			
		Score	Jan 27 Ret.			Score	Jan 27 Ret.
NVDA	NVIDIA CORPORATION	88%	-16.97	NATL	NCR ATLEOS CORPORATION	31%	-0.95
CRDO	CREDO TECH GRP HLDG LTD	88%	-30.91	ACLS	AXCELIS TECHNOLOGIES INC	30%	-1.93
VRT	VERTIV HOLDINGS CO	84%	-29.88	LMT	LOCKHEED MARTIN CORP	30%	1.35
AXON	AXON ENTERPRISE INC	84%	-0.92	APPN	APPIAN CORP	30%	3.52
ONTO	ONTO INNOVATION INC	83%	-14.20	ALNT	ALLIENT INC	30%	-3.76
MRVL	MARVELL TECHNOLOGY INC	83%	-19.10	RNG	RINGCENTRAL INC	29%	0.58
ACHR	ARCHER AVIATION INC	82%	-8.12	CRVL	CORVEL CORP	29%	1.98
LUNR	INTUITIVE MACHINES INC	81%	-8.37	QLYS	QUALYS INC	28%	2.64
APP	APPLOVIN CORP	79%	-5.53	CDW	CDW CORP	27%	-0.56
PRCT	PROCEPT BIOROBOTICS CORP	79%	1.67	IRDM	IRIDIUM COMMUNICATIONS INC	27%	-3.87
VST	VISTRA CORP	79%	-28.27	HPQ	HP INC	26%	1.83
SOUN	SOUNDHOUND AI INC	79%	-11.17	DBX	DROPBOX INC	25%	1.65
SMTC	SEMTECH CORP	79%	-21.49	RPD	RAPID7 INC	24%	-0.80
RKLB	ROCKET LAB USA INC	78%	-3.06	U	UNITY SOFTWARE INC	18%	-2.55
NOW	SERVICENOW INC	77%	1.39	TDC	TERADATA CORP DEL	18%	0.94

Source: FactSet, SIMG Analysis

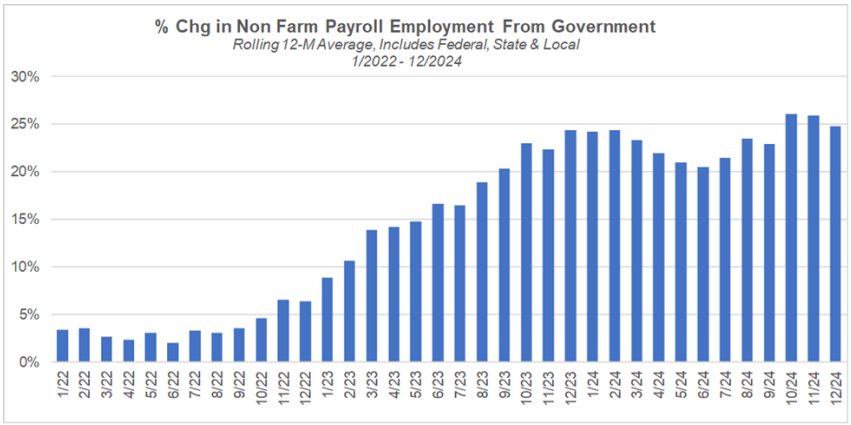
Since December 2022, AI providers have been by far the best performing bucket. By contrast, stocks that are poised to be transformed by AI have not been rewarded to the same extent, probably as investors wait to see the results of investments in AI.



Source: FactSet, SIMG Analysis

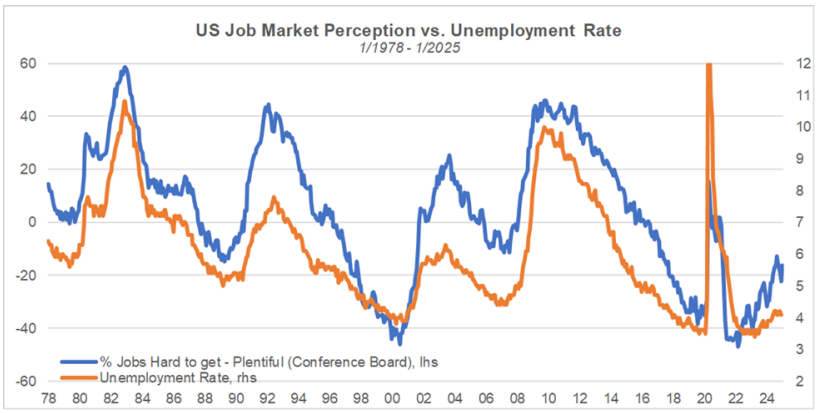
For now, the impact of the DeepSeek announcements seem to have been short lived, but there could be further implications in the long run. They show that **high quality AI models can become more broadly accessible at a lower cost, which would accelerate broader AI adoption**. If the Jevons paradox holds, **the rise in demand for AI would outweigh the gains from deploying AI more efficiently, resulting in higher demand for hardware, data centers, and the electricity powering them**. **But the biggest beneficiaries from a rise in AI efficiency would be the companies in the "transformed by AI" bucket**, which could use these new tools to disrupt the industry they operate in. One company that may face challenges is NVIDIA: its pricing power and its 75% gross margins may be under attack, as some of its customers could be content with not getting the latest generation of GPUs.

Another source of market volatility lies in the uncertainty around the policies of the Trump administration, especially regarding tariffs, immigration, and cuts/freezing of government spending. So far, there have been drastic policy announcements with little warning, which makes it difficult for investors to assess their impact. Regarding government spending, a priority of the Trump administration is to break away from the fiscal dominance regime the US finds itself in, where spending is at such levels that the Fed is struggling to bring back inflation to its 2% target in spite of its high policy rates. While making the government more efficient is likely to be beneficial in the long run, there could be meaningful pain in the near term. **Over the past 2 years, government (including federal, state and local, mostly skewing towards the latter) has represented ~25% of the changes in nonfarm payrolls**. **A sustained freeze (or cuts) in federal funds disbursed to state & local governments could have a significant impact on the job market and the economy**, and thus on financial markets.



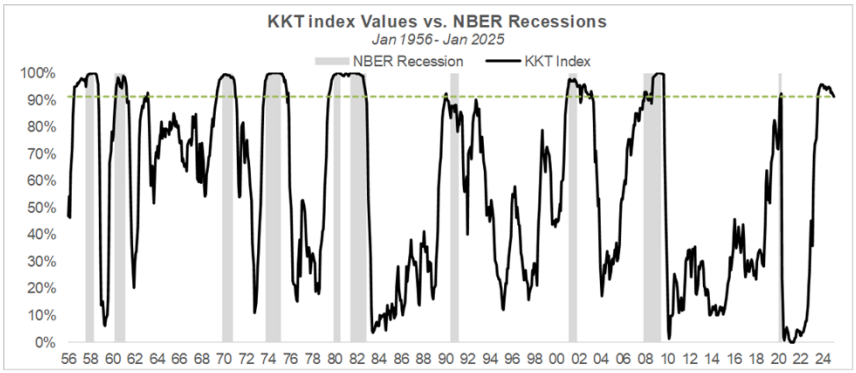
Source: Bureau of Labor Statistics, SIMG Analysis

In addition, **an array of indicators suggest that the job market is actually weaker than what the payroll survey implies**. The Conference Board's survey includes questions about jobs being plentiful or hard to get, and its indication (the chart shows the % difference between the proportions of respondents who think jobs are hard to get vs. plentiful) tends to lead the unemployment rate. Since 2022, this indicator has degraded substantially more than the unemployment rate (even though it is still far from extremes).



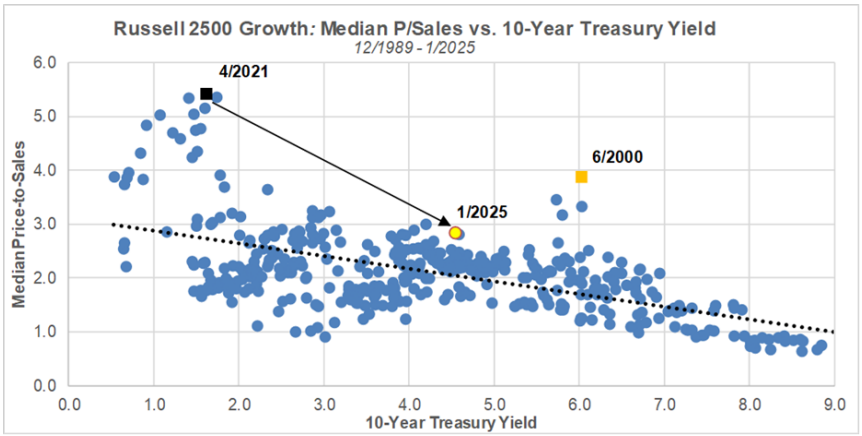
Source: Bloomberg, SIMG Analysis

While some economists believe that fiscal restraint is what could push the US economy into a recession, **the KKT index**, which measures the relative proximity of current economic conditions to periods of robust economic growth vs. recessions has been declining from its peak in August 2024 – when 60% of Americans believed the economy was in recession – and **is at its lowest level since 7/2023**. **While it remains elevated, the trend over the past 6 months suggests that the economy is in the last innings of a recession (or period of slow growth), not entering one.** However, while we can see light at the end of the tunnel, policy uncertainty could make the last miles bumpy.



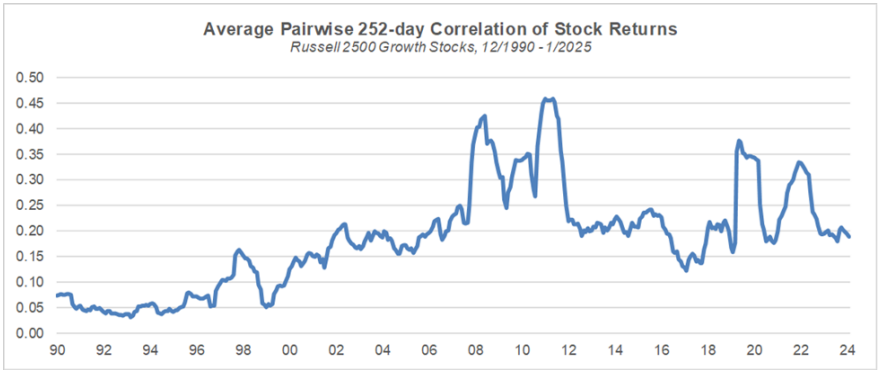
Source: St Louis Fed's ALFRED database, Robert Shiller's data (http://www.econ.yale.edu/~shiller/data.htm), Bloomberg, SIMG Analysis. The methodology behind the KKT model is explained in the research paper below:A NEW INDEX OF THE BUSINESS CYCLE by William Kinlaw, Mark Kritzman, and David Turkington

While far from the valuations reached by the Magnificent 7, **the median price-to-sales ratio of small & mid cap growth stocks is now clearly above the historical range given the current level of the 10-year yield**. Over-valued markets often lead to poor subsequent market returns, but valuation measures are not effective market timing indicators.



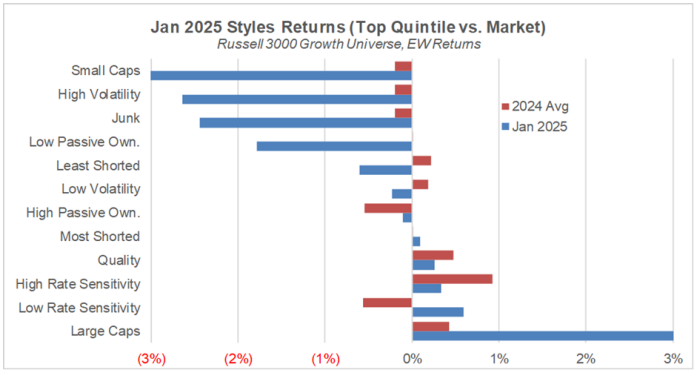
Source: FacgtSet, SIMG Analysis

In spite of the recent negative market action, the average pairwise correlation of stock returns is near the long term median, suggesting that investor sentiment remains favorable.



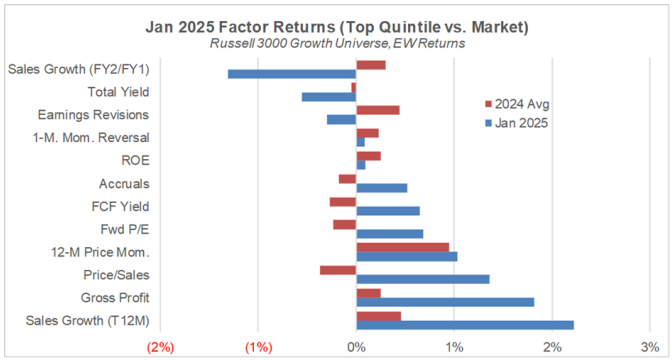
Source: FactSet, SIMG Analysis

With regard to styles, **the best performing cohort last month has been large caps. By contrast, small caps, high volatility and junk stocks have underperformed materially.**



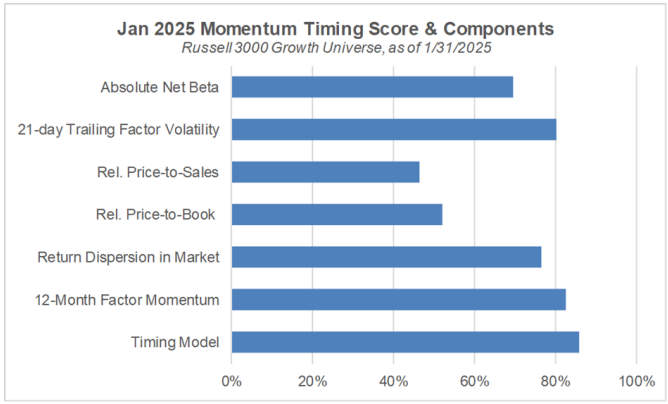
Source: Source: FactSet, SIMG Analysis

The top ranked stocks in terms of realized sales growth, gross profitability, and price-to-sales have outperformed in January, while high expected growth stocks (FY2 vs. FY1) have underperformed. High price momentum stocks have also performed better than the overall market, though most of this outperformance was driven by the last 4 days of the month (Jan 28-31).



Source: Source: FactSet, SIMG Analysis

However, **our momentum timing signal indicates that high momentum stocks may under-perform in February**, as a result of the high 12-month momentum of the momentum factor, the high return dispersion within the cross section of stocks and the high volatility of the momentum factor.



Source: Source: FactSet, SIMG Analysis