



Sparkline 2024 ETF Investor Letter

Beyond the Magnificent 7

January 2025

ITAN

Sparkline Intangible Value ETF

DTAN

Sparkline International Intangible Value ETF

Executive Summary

Our annual investor letter focuses on the challenge of U.S. mega-cap dominance, which has led to rising concentration and valuations in the S&P 500. Unfortunately, most attempts to diversify require sacrificing innovation and growth. We discuss the Sparkline ETFs' evolving positioning on this theme, arguing that the Funds offer a "best of both worlds" way to diversify to cheaper stocks while still maintaining exposure to the modern, intangible economy.

Introduction

Dear Sparkline Investors,

Hope you had a great holiday! As we turn the page on 2024 and reset for 2025, we wanted to provide some commentary on the performance and positioning of the Sparkline ETFs.

In order to provide the most broadly generalizable insights, we'll center this letter on an overarching theme – the dominance of the so-called "Magnificent 7." We believe this single theme has shaped almost every facet of the equity markets and now presents one of the greatest challenges for investors aiming to build diversified, fairly-valued portfolios.

In this letter, we'll discuss the Funds' evolving Magnificent 7 positioning and its contribution to returns. In addition, we'll show how the Funds can help investors diversify beyond the Magnificent 7 into cheaper stocks, while still maintaining exposure to the modern, intangible economy.

Finally, before we dive in, I want to express my sincere appreciation for your support. Since we first launched ITAN over three years ago, the idea of "intangible value" has gained steady traction. Moreover, we recently expanded the fund family with DTAN, which applies the same intangible value strategy to non-U.S. developed market stocks.

None of this progress would be possible without your deep intellectual curiosity, your thoughtful engagement with our research, and, most importantly, your willingness to entrust us with the hard-earned capital of you and your clients.

Thank you – I look forward to many more prosperous years ahead!

Best,

Kai Wu
Founder & Chief Investment Officer
Jan 8, 2025

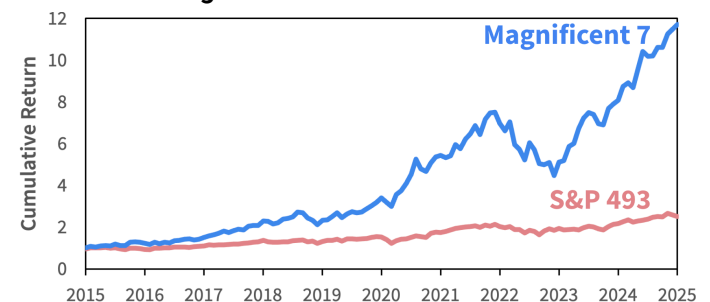
American Giants

First-World Problems 🍷

For U.S. stock market investors, the past decade has been exceptional. Since 2015, the S&P 500 has gained +13% per year, greatly outperforming most other stock indexes. This is largely thanks to outsized contributions from a narrow set of mega-cap technology stocks (the so-called "Magnificent 7").

Exhibit 1

The Great Divergence

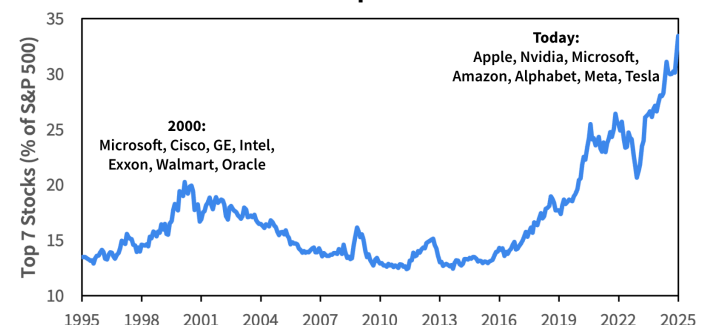


Source: S&P, Sparkline. Magnificent 7 is Apple, Microsoft, Amazon, Meta, Google, Nvidia, and Tesla. S&P 493 is the S&P 500 excluding the Magnificent 7. Both are rescaled to 100% and cap-weighted. Past performance is no guarantee of future results. One cannot invest directly in an index. As of 12/31/2024.

However, too much success begets its own problems. Firstly, the Magnificent 7's surging market cap has led to extreme concentration in stock indexes, with these 7 companies now comprising an unprecedented 33% of the S&P 500 index.

Exhibit 2

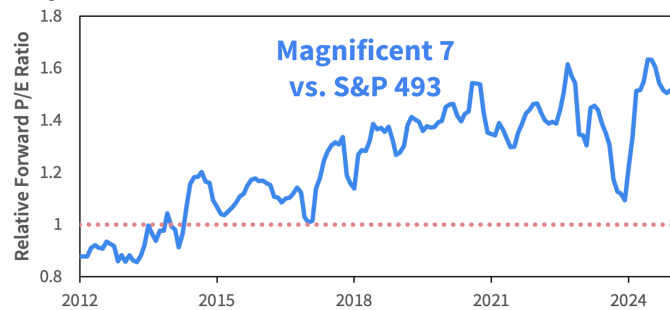
S&P 500 Concentration in Top 7 Stocks



Source: S&P, Sparkline. Exhibit shows the total S&P 500 weight in the top 7 stocks at each point in time. As of 12/31/2024.

Secondly, the Magnificent 7's dominance has led to rising valuations. In 2016, when Warren Buffett started building his \$175 billion position in Apple, the Magnificent 7 traded at a similar forward price-to-earnings (P/E) ratio as the market. Today, they trade at a 53% premium, and Buffett has started exiting his Apple position, cutting it -60% so far this year.

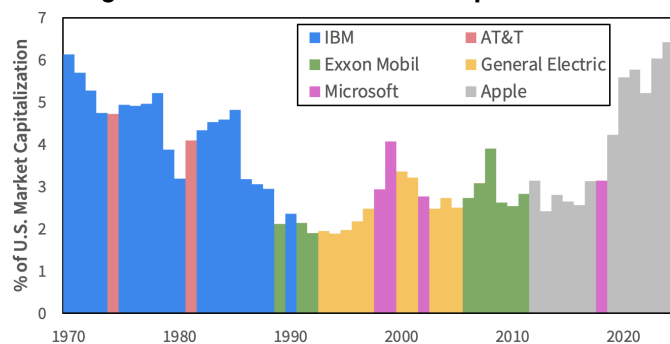
Exhibit 3
Magnificent 7 Relative Valuation



Source: S&P, Sparkline. Exhibit shows the forward P/E ratio of the Magnificent 7 relative to the S&P 493. Data are smoothed using a rolling 3-month average. As of 12/31/2024.

While the Magnificent 7 are amazing businesses, capitalism is defined by creative destruction. For decades, IBM, Exxon, and GE were considered foolproof holdings, but their stocks languish today. More generally, since 1927, U.S. stocks that reached the top 10 subsequently lagged the market by -1.5% per year on average for the next 10 years (Crill (2023)).

Exhibit 4
U.S. Largest Stocks: Turnover at the Top



Source: Schlingemann and Stulz (2021), S&P, Sparkline. Exhibit shows the percentage of total U.S. market cap represented by the single largest stock. As of 12/31/2024.

In short, the S&P 500 has become increasingly concentrated in a handful of richly-valued stocks. However, few firms have been able to maintain such dominance over long periods of time. As a result, many investors, concerned about the rising fragility of market indexes, are looking for ways to diversify.

Escaping the S&P 500 🌈

Investors seeking to diversify away from the S&P 500 typically follow one of three common approaches, tilting toward (1) **value**, (2) **small**, or (3) **international** stocks.

Exhibit 5
Ways to Diversify From the S&P 500



Value

Stocks with low valuation multiples



Small

Equal-weighted indexes, small-cap stocks



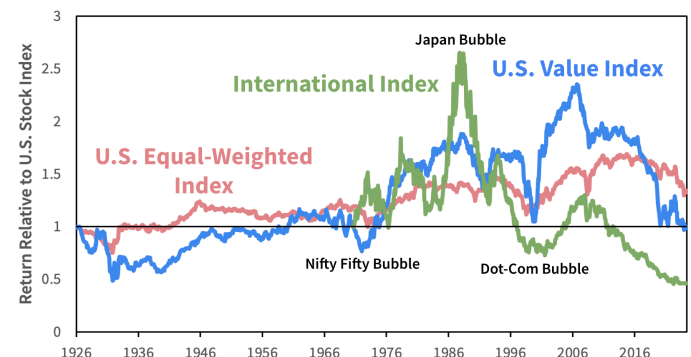
International

Stocks outside the U.S.

Source: Sparkline.

Over the long run, these alternative indexes have produced similar returns as the S&P 500. However, this long-term equilibrium has been marked by multi-year deviations, such as around the 1973 Nifty Fifty, 1990 Japan, and 2000 dot-com bubbles. Notably, all three indexes are currently in the depths of decade-long relative drawdowns, due in large part to their lack of Magnificent 7-driven returns.

Exhibit 6
Relative Performance of Alternative Indexes



Source: Ken French, MSCI, Sparkline. Blue line shows relative value-weighted returns of Big LoBM vs. ME2 BM2 from the Fama-French 6 Portfolios Formed on Size and Book-to-Market. Red line shows relative returns of the equal- vs. value-weighted Hi 30 portfolio from the Fama-French Portfolios Formed on Size. Green line shows relative value-weighted USD returns of the Mkt portfolio from the Fama-French International Index vs. the Hi 30 portfolio from the Fama-French Portfolios Formed on Size. International data backfilled to 1971 using MSCI EAFE Price Index. Indexes are not investible. See full disclaimer below. As of 11/30/2024 (International as of 12/31/2023).

Proponents of diversification argue that, after years of underperformance, these indexes are now undervalued and overdue for mean reversion. As the **top panel** of the next exhibit shows, they are indeed cheap relative to the S&P 500, at least on traditional valuation metrics (e.g., P/E ratio).

Exhibit 7 Diversification: No Free Lunch

			Alternative Indexes		
	S&P 500	U.S. Value Stocks	Equal-Weighted S&P 500	International Stocks	
Valuation					
Earnings / Price	4.1	5.3	5.3	6.1	
Book / Price	19.6	34.7	34.1	50.7	
Sales / Price	32.7	53.8	62.8	72.0	
Intangibles and Innovation					
Expected Growth	14.7	10.0	11.1	10.3	
R&D / Sales	7.3	3.0	3.4	3.5	
PhDs / Employees	2.6	1.7	1.6	1.8	
Patents / Assets	3.3	2.1	2.3	2.1	
% Disruptive	62%	38%	30%	53%	

Source: MSCI, S&P, USPTO, LinkedIn, Sparkline. U.S. Value is Russell 1000 Value, International is MSCI EAFE. All calculations are weighted averages with weights equal to position size, in percentages. See full definitions below. As of 12/31/2024.

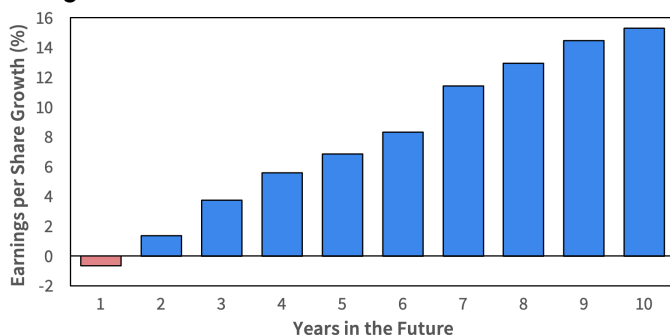
However, tilting away from the S&P 500 is no “free lunch.” In the **bottom panel**, we find that these alternative indexes have lower intangible intensity, innovation, and growth. They are biased toward old-economy firms, such as banks and industrials, which have largely missed out on the growth of the modern, intangible economy.

Intangibles and the Magnificent 7 ✨

Why have the Magnificent 7 thrived? We believe their success stems from their aggressive investments in intangible assets. Amazon famously failed to turn a profit for years, reinvesting instead in the R&D, customer goodwill, and network effects that would ultimately earn it a \$2.3 trillion market cap.

The next exhibit shows this relationship between intangible investment and future earnings growth across all firms globally. While it can take many years to pay off, intangible investment is the engine of growth in the modern age.

Exhibit 8 Intangible-Led Growth



Source: MSCI, S&P, Sparkline. Bars represent the coefficients of regressions where $Y = \text{EPS}(T+N) / \text{EPS}(T) - 1$ and $X = \text{INTANGIBLE VALUE}(T)$. N is the number of years in the future. EPS is “earnings per share.” INTANGIBLE VALUE is Z-scored. Regression includes a constant. Universe is MSCI ACWI IMI. For example purposes only and not meant to represent an actual investment. From 3/31/1995 to 12/31/2023.

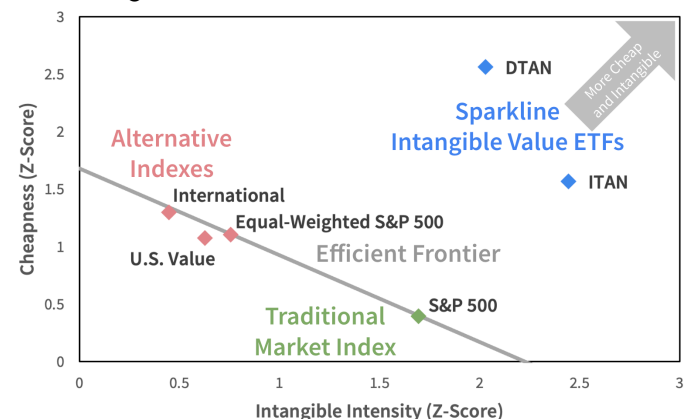
Conversely, we believe the past decade’s underperformance of value, equal-weight, and international indexes stems from their underinvestment in intangible assets. Unfortunately, Exhibit 7 suggests this is still a problem today. These indexes continue to lag the S&P 500 on most measures of intangible investment, implying continued tepid growth in the future.

Sparkline ETFs: Best of Both Worlds 🌐

The **Sparkline Intangible Value ETFs** aim to offer a way around this tradeoff by investing only in stocks that appear undervalued relative to their intangible assets. We believe this results in a “best of both worlds” portfolio, providing investors with both cheapness and intangible intensity.

The next exhibit shows how various portfolios score on these two key dimensions: (1) **Intangible Intensity** is a composite of metrics seen earlier (e.g., R&D / Sales), and (2) **Cheapness** is a composite of traditional valuation ratios (e.g., P/E).

Exhibit 9 The Intangible vs. Value Frontier



Source: MSCI, S&P, USPTO, LinkedIn, Sparkline. U.S. Value is Russell 1000 Value, International is MSCI EAFE. Cheapness is the average of book/price, sales/price, earnings/price, free cash flow/price, operating cash flow/price. We compute each ratio twice, once using trailing fundamentals and the other using next 12-month expectations. Intangible Intensity is the average of S&M/sales, R&D/sales, PhDs/employees, patents/assets, and % disruptive. All underlying metrics are weighted averages with weights equal to position size and are normalized before averaging. See full definitions below. As of 12/31/2024.

This exhibit illustrates the tradeoff between the S&P 500 and alternative indexes. The **S&P 500** is intangible-rich but expensive, while the **alternative indexes** are cheap but intangible-poor. The **Sparkline Intangible Value ETFs** push out the **efficient frontier**, offering a superior blend of cheapness and intangibles than can be produced by a portfolio of the S&P 500 and its alternatives alone.

Sparkline ETFs: Effective Diversifiers 🛒

Importantly, the **Sparkline ETFs** offer exposure to highly intangible firms without the S&P 500's heavy reliance on a handful of mega-cap companies. We see this in the next exhibit, which shows the market cap distributions of the **S&P 500**, **Sparkline ETFs**, and **alternative indexes**.

Exhibit 10

Sparkline ETFs: Reducing Mega-Cap Exposure

	Sparkline ETFs			Alternative Indexes		
	S&P 500	ITAN	DTAN	U.S. Value Stocks	Equal-Weighted S&P 500	International Stocks
Mega	40	7	0	8	3	0
Large	44	46	43	57	35	50
Mid	16	44	45	33	62	45
Small	0	3	12	2	0	5

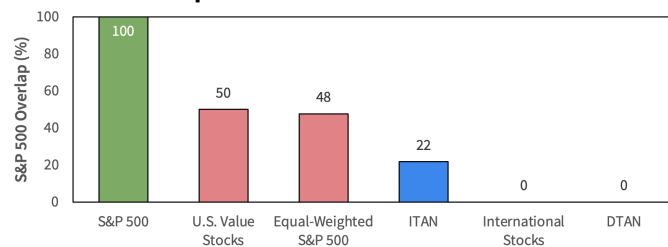
Source: MSCI, S&P, Sparkline. U.S. Value is Russell 1000 Value, International is MSCI EAFE. Exhibit shows weight in each market cap bin, defined as follows: Mega: >\$500B, Large: >\$50B, Mid: >\$5B, Small: <\$5B. As of 12/31/2024.

The **Sparkline ETFs'** flatter market cap distribution arises for two reasons. First, as we'll discuss shortly, they simply hold fewer of the Magnificent 7. Second, they employ "reduced market-cap-weighting," which upweights larger stocks less than full cap-weighted indexes like the S&P 500. This feature provides much of the diversification benefits of equal-weighted indexes, while still ensuring considerable liquidity.

Finally, let's compare the diversification that these strategies provide relative to the S&P 500. The next exhibit shows the overlap of each strategy with the S&P 500. Lower overlap implies better diversification (i.e., higher active share).

Exhibit 11

S&P 500 Overlap



Source: MSCI, S&P, Sparkline. U.S. Value is Russell 1000 Value, International is MSCI EAFE. Overlap is defined as 1 - active share relative to the S&P 500. As of 12/31/2024.

Of the three U.S. strategies, **ITAN** provides the greatest diversification, with only 22% of its weight also in the S&P 500. **DTAN**, which invests in non-U.S. stocks, naturally has no overlap with the S&P 500. As such, we believe the **Sparkline ETFs** can provide helpful diversification to investors that find themselves overallocated to the outperforming S&P 500.

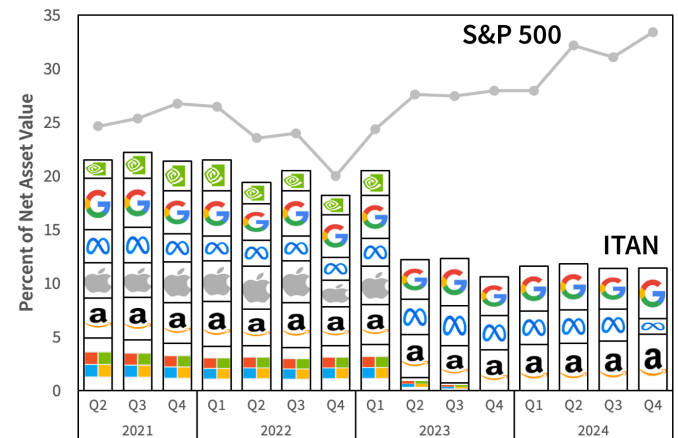
Sparkline ETF Positioning

ITAN: Culling the Magnificent 7 🪄

While ITAN currently has significantly lower exposure to the Magnificent 7 than the S&P 500, this has not always been so. The next exhibit shows the evolution of ITAN's Magnificent 7 exposure since its inception on June 28, 2021.

Exhibit 12

ITAN Magnificent 7 Holdings



Source: S&P, Sparkline. Bars show ITAN's allocation to the Magnificent 7 stocks at each quarter end. Line shows the S&P 500's total allocation to the Magnificent 7 on these same dates. As of 12/31/2024.

At inception, ITAN held all of the Magnificent 7 stocks, except for Tesla. In total, its 22% Magnificent 7 exposure was similar to that of the S&P 500. This made ITAN an anomaly relative to traditional value funds. In fact, the Wall Street Journal highlighted this unique aspect of ITAN in an article entitled "[The Value Investor Buying Big Tech Stocks.](#)"

Once adjusted for their considerable intangible assets, ITAN remarkably considered the Magnificent 7 "value stocks." However, with each passing quarter, the intangible value of these firms became more widely understood. One by one, as their prices rose, they began to fall below ITAN's stringent threshold of inclusion (i.e., top 85th percentile of the top 1,000). Today, only three of the Magnificent 7 remain in ITAN – Amazon, Google, and Meta.

Nvidia provides the most dramatic case study. At inception, despite a high headline P/E ratio of 94, ITAN actually viewed Nvidia as cheap relative to its prodigious intangible capital. This nonconsensus view paid off, as, once the AI hype cycle took off, Nvidia's price soared. But while this contributed to a rapid gain for ITAN, it also left Nvidia no longer looking cheap, so ITAN took profits and rotated into other stocks.

ITAN: Leaning Against Bubbles

In hindsight, of course, ITAN started cutting its Magnificent 7 positions too early. The next exhibit shows annual returns since 2023, when ITAN started trimming. In addition to the returns of ITAN, we separate S&P 500 returns into those from the Magnificent 7 and all other stocks (the “S&P 493”).

Exhibit 13

ITAN Magnificent 7 Attribution (2023-2024)

	ITAN	Annual Return (%)				Average MAG 7 Weight (%)	
		S&P 500	MAG 7	S&P 493	11% MAG 7 + 89% S&P 493	ITAN	S&P 500
2023	34.57	26.29	76.65	15.46	22.19	14	27
2024	17.83	25.02	47.67	16.45	19.88	11	31

Source: S&P, BITA, Sparkline. S&P 500, MAG 7, and S&P 493 correspond to the S&P 500, BMAGSI and BUS5X7 indexes, respectively. Index returns are hypothetical. One cannot invest directly in an index. Returns assume the reinvestment of dividends. ITAN returns are based on NAV. ITAN gross expense ratio is 0.50%. As of 12/31/2024.

The performance data quoted represents past performance and is no guarantee of future results. Investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than that quoted. Visit <https://etf.sparklinecapital.com/itan> for standardized performance as of the most recent month end.

In 2023, ITAN handily beat the S&P 500, returning 35% versus 26%. Notably, ITAN managed this outperformance in spite of having only about half of the S&P 500's exposure to the Magnificent 7's explosive 77% return that year (14 vs. 27%).

In 2024, while ITAN put up a strong absolute return of 18%, it lagged the S&P 500. However, this gap can be almost fully explained by ITAN having only a third of the Magnificent 7 weight of the S&P 500, which actually *increased* its weight that year. A portfolio of 11% Magnificent 7 and 89% S&P 493 (i.e., ITAN's 2024 average) produced similar returns as ITAN.

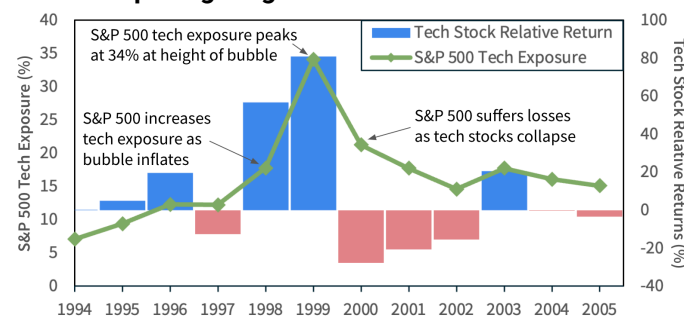
The divergent trading behaviors of ITAN and the S&P 500 toward the Magnificent 7 illustrates their contrasting philosophies. ITAN, following its “value” framework, took profits as the Magnificent 7's valuations rose. On the other hand, the S&P 500 exhibited a “momentum” trading style, a byproduct of its market-cap weighting methodology, which forces it to mechanically buy stocks as they rise in price.

While the S&P 500's momentum trading style has worked so far the past couple years, it has led to problems in the past. As the next exhibit shows, the S&P 500 continued to pile into

overvalued tech stocks as their prices rose in the dot-com bubble, reaching a peak 34% allocation to tech stocks right before the collapse. When the bubble burst, the S&P 500 suffered outsized losses.

Exhibit 14

Market Cap Weighting Is Bubble Prone



Source: Nasdaq, S&P, Sparkline. Line shows S&P 500 Information Technology Sector weight as of the end of each calendar year. Bars show returns of Nasdaq 100 relative to S&P 500 for each calendar year.

While, in hindsight, ITAN's value orientation caused it to take profits on its Magnificent 7 holdings prematurely, we believe this conservative approach provides valuable insurance against the considerable risks associated with chasing hot stocks in a frothy market.

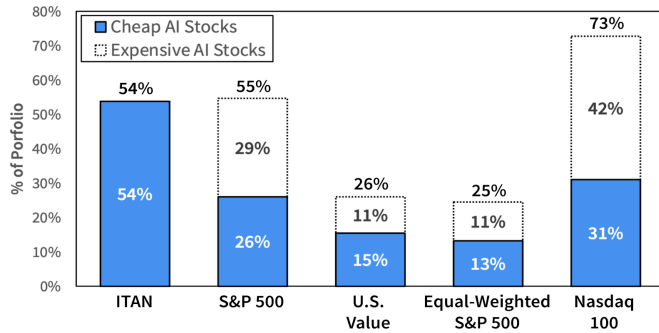
ITAN: Investing in the AI Revolution

Of course, just because ITAN no longer owns Nvidia doesn't mean it's missing out on the AI revolution. In “Investing in AI: Navigating the Hype” (Jul 2023), we found that investors could use intangible value to navigate the hype cycles that typically accompany technological revolutions, rotating away from overvalued stocks while maintaining exposure to secular technological tailwinds.

For example, in the dot-com bubble, internet stock prices experienced a roundtrip boom and bust. However, it turns out that all of the underperformance in the bust was driven by the subset of expensive internet stocks, whose inflated multiples collapsed when sentiment faltered. Cheap internet stocks weathered the storm fine, providing consistent outperformance in both the boom and bust.

Drawing on this historical lesson, let's take a look at how ITAN is positioned for today's AI revolution. Similar to above, we decompose AI stocks into cheap and expensive halves.

Exhibit 15 AI Exposure



Source: SEC, OpenAI, S&P, Sparkline. AI Stocks are those considered to be positioned to benefit from AI based on their most recent 10-K and four earnings calls. Cheap AI Stocks are AI stocks in the top half of intangible value. As of 12/31/2024.

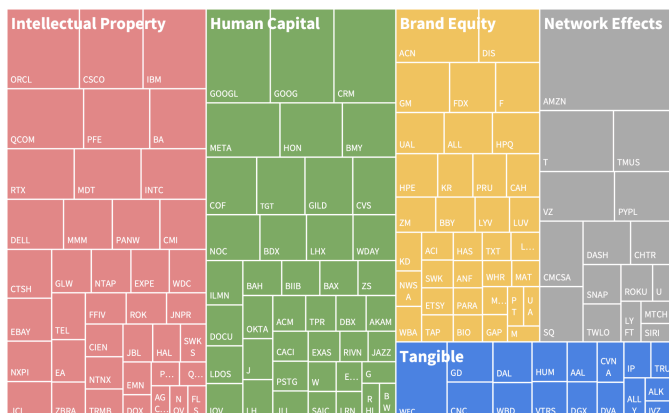
ITAN actually offers similar aggregate AI exposure as the S&P 500. However, it obtains its AI exposure exclusively through **cheap AI stocks**. As the Magnificent 7 have gotten more expensive, ITAN has rotated into more under-the-radar AI plays. For example, it seeks out early adopters in traditional sectors that are making significant investments in AI human capital (e.g., measured by job postings and LinkedIn).

We believe that investors must take a dynamic approach to navigating hype cycles. In bubbles, it is the expensive tech stocks that suffer most when expectations falter. With AI tailwinds now largely priced into many of the Magnificent 7, we believe investors should seek out the next wave of AI beneficiaries as a better risk-reward way to play the boom.

ITAN: Improved Intangible Value ✨

More broadly, just because ITAN has reduced its Magnificent 7 holdings does not mean it has stopped owning modern, intangible-rich companies. As the next exhibit shows, over 90% of ITAN is invested in primarily intangible stocks.

Exhibit 16 ITAN Intangible Decomposition



Source: Sparkline. Stocks are assigned to a single "primary" pillar based on Sparkline's proprietary intangible value scores. Boxes are proportional to position size. Positions grouped by primary pillar to show aggregate exposure to each pillar. As of 12/31/2024.

Importantly, ITAN offers more intangible value than both the Magnificent 7 and S&P 500. Rather than simply buying the stocks with the most *total* intangible capital, ITAN seeks those with the most *undervalued* intangible capital. As the next exhibit shows, ITAN's portfolio offers 1.9 to 8.4 times as much intangible value per dollar invested.

Exhibit 17 Intangible Value Comparison

	ITAN	Magnificent 7	S&P 500
R&D / Price	2.7	1.4	1.0
S&M / Price	2.6	0.6	0.7
Patents / Price	4.6	0.5	1.0
PhDs / Price	9.0	2.3	2.7

Source: MSCI, S&P, USPTO, LinkedIn, Sparkline. Averages weighted by position size, in percentages. See full definitions below. As of 12/31/2024.

We believe investing in firms with *undervalued* intangible assets is the key to generating superior long-term returns. Simply having a lot of intangible assets means little if they are already fully reflected in the stock price. It is the fact they are undervalued that provides the investment upside.

DTAN: Exploiting the Foreign Discount ✈️

Many investors looking to diversify beyond the S&P 500 have decided to leave the U.S. altogether, investing instead in international stock indexes. Foreign stocks not only provide further geographical and currency diversification, but also trade at a historically wide -51% discount to U.S. stocks.

Exhibit 18 The Foreign Discount



Source: Global Financial Data, Meb Faber, Sparkline. CAPE10 is the 10-year cyclically-adjusted price-to-earnings ratio. Chart shows the CAPE10 ratio of international vs. U.S. stock markets. From 1/31/1980 to 12/31/2023.

However, as we showed in “International Intangible Value” (Apr 2024), international stocks’ discounted valuations are mostly just compensation for significantly lower intangible investment, innovation, and growth. Not only have these firms largely missed out on the past decade’s intangible-led growth, but they continue to underinvest for the future.

Fortunately, our research shows that an intangible value approach can help identify the subset of international stocks with greater innovation and growth potential. These are the proverbial “babies thrown out with the bathwater” – firms operating in the modern intangible economy but selling at a discount due to the misfortune of their domicile.

In fact, thanks to the general cheapness of international markets, we can obtain even more intangible assets per dollar invested than we can in the U.S. While both offer better intangible value than their respective indexes, DTAN scores even higher on intangible value metrics than ITAN.

Exhibit 19

International Stocks Offer More Intangible Value

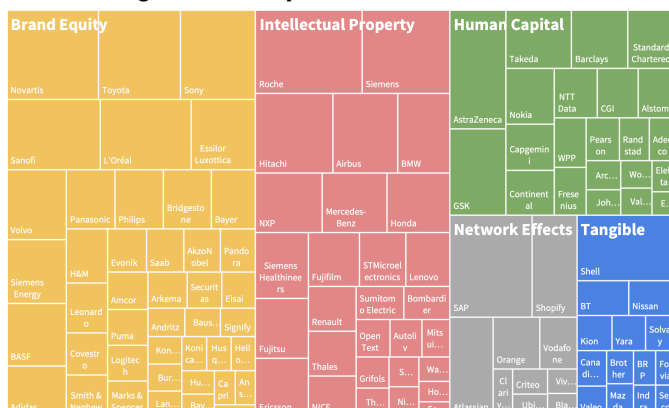
	Standard Indexes			
	DTAN	ITAN	International Stocks	S&P 500
R&D / Price	5.4	2.7	1.2	1.0
S&M / Price	6.9	2.6	2.1	0.7
Patents / Price	7.9	4.6	2.0	1.0
PhDs / Price	11.9	9.0	3.6	2.7

Source: MSCI, S&P, USPTO, LinkedIn, Sparkline. International is MSCI EAFE. Averages weighted by position size, in percentages. See full definitions below. As of 12/31/2024.

As expected, the DTAN portfolio looks quite different from the international index. While the index is laden with asset-heavy financial and resource stocks, over 90% of the DTAN portfolio is invested in primarily-intangible companies.

Exhibit 20

DTAN Intangible Decomposition



Source: Sparkline. Stocks are assigned to a single “primary” pillar based on Sparkline’s proprietary intangible value scores. Boxes are proportional to position size. Positions grouped by primary pillar to show aggregate exposure to each pillar. As of 12/31/2024.

We believe DTAN and ITAN are complementary. While both buy intangible value stocks, the resulting portfolios differ greatly due to their distinct investment universes. DTAN relies more heavily on **brand equity**, while ITAN draws more on **human capital** and **network effects**. Regarding sectors, DTAN has more healthcare and industrials, while ITAN holds more tech and communications. As such, investing in both ITAN and DTAN may lead to further diversification.

Regarding performance, DTAN has gotten off to a solid start. Since its inception on Sep 9, 2024, DTAN has returned -0.6%, despite the international index falling -4.3%. This implies an excess return of +3.7%. Of course, we would never suggest evaluating a fund’s performance based on just a few months (or even years) of track record. But, so far so good!

Exhibit 21

DTAN Performance

Return (%)	DTAN	International Stock Index	Difference
9/9/2024 to 12/31/2024	-0.63%	-4.32%	3.69%

Source: MSCI, Sparkline. International index returns are those of MSCI EAFE Index (USD) Net. Index returns are hypothetical. One cannot invest directly in an index. Returns assume the reinvestment of dividends. DTAN returns are based on NAV. DTAN gross expense ratio is 0.55%. See full definitions below. As of 12/31/2024.

The performance data quoted represents past performance and is no guarantee of future results. Investment return and principal value of an investment will fluctuate so that an investor’s shares, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than that quoted. Visit <https://etf.sparklinecapital.com/dtan> for standardized performance as of the most recent month end.

In summary, we believe DTAN provides a useful new tool for investors seeking to diversify into cheaper geographies while still holding innovative, modern businesses. Moreover, for existing ITAN investors, DTAN offers the additional benefit of extending a familiar approach in a consistent manner to a distinct and less-trodden opportunity set.

ITAN + DTAN: Improving Model Portfolios

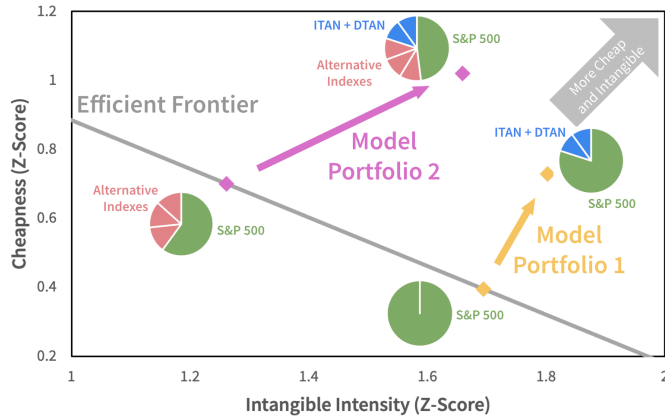
After an incredible run, the S&P 500 is exhibiting problems of rising concentration and valuations. While some investors have opted to diversify by allocating part of their portfolio to alternative indexes, this requires a tradeoff with respect to weaker innovation, growth, and intangibles.

We believe the **Sparkline Intangible Value ETFs** provide a “best of both worlds” solution. To illustrate, the next exhibit

shows the potential impact of adding a 10% ITAN and 10% DTAN allocation to two different model portfolios: (1) **100% S&P 500** and (2) **60% S&P 500 and 40% alternative indexes**.

Exhibit 22

Pushing out the Efficient Frontier



Source: MSCI, S&P, USPTO, LinkedIn, Sparkline. Alternative Indexes is an equal-weighted blend of Russell 1000 Value, Equal-Weighted S&P 500, and MSCI EAFE. Cheapness is the average of book/price, sales/price, earnings/price, free cash flow/price, operating cash flow/price. We compute each ratio twice, once using trailing fundamentals and the other using next 12-month expectations. Intangible Intensity is the average of S&M/sales, R&D/sales, PhDs/employees, patents/assets, and % disruptive. All underlying metrics are weighted averages with weights equal to position size and are normalized before averaging. See full definitions below. For example purposes only and not meant to represent an actual investment. As of 12/31/2024.

With only conventional tools, investors face a strict tradeoff between cheapness and intangible intensity (i.e., the “efficient frontier”). We believe the **Sparkline ETFs** provide a way for investors to push out this frontier, unlocking portfolios with superior combinations of these two factors.

The final exhibit repeats this analysis, focusing on individual metrics rather than composites. In addition to the two dimensions of **cheapness** and **intangibles**, we include a third dimension – **diversification**.

Exhibit 23

Improving Model Portfolios with Sparkline ETFs

	Model Portfolio 1		Model Portfolio 2	
	Original	With ITAN/DTAN	Original	With ITAN/DTAN
Valuation				
Earnings / Price	4.1	4.5	4.7	4.9
Book / Price	19.6	26.8	27.7	33.3
Intangibles and Innovation				
Patents / Assets	3.3	3.9	2.9	3.5
% Disruptive	62%	67%	53%	60%
Diversification				
S&P 500 Overlap	100%	82%	73%	61%
% Magnificent 7	33%	28%	20%	17%

Source: MSCI, S&P, USPTO, Sparkline. Alternative Indexes is an equal-weighted blend of Russell 1000 Value, Equal-Weighted S&P 500, and MSCI EAFE. See full definitions below. For example purposes only and not meant to represent an actual investment. As of 12/31/2024.

Adding the **Sparkline ETFs** improves both model portfolios on all three dimensions, increasing **cheapness**, **intangibles**, and **diversification**. Interestingly, a little goes a long way, as even this modest allocation to ITAN and DTAN meaningfully improves the characteristics of the overall portfolios.

Conclusion

As we kick off 2025, the S&P 500 appears more fragile than ever due to its rising concentration in a handful of pricey stocks. The challenge is that most alternative indexes suffer from lower innovation, growth, and intangibles. We believe the **Sparkline ETFs** offer a way around this tradeoff, allowing investors to diversify into cheaper stocks while maintaining exposure to the burgeoning intangible economy.

Glossary

S&P 500: The S&P 500 index is a popular gauge of large-cap U.S. equities that includes 500 leading companies.

Equal-Weighted S&P 500: The S&P 500 index, except with constituents equal-weighted (opposed to market-cap-weighted).

MSCI EAFE: The MSCI EAFE index is a popular gauge of large-cap non-U.S. developed equities.

MSCI ACWI IMI: The MSCI ACWI IMI index is a popular gauge of large-, mid- and small-cap global equities.

Russell 1000 Value: The Russell 1000 Value index is a popular gauge of stocks with high value characteristics selected from within the Russell 1000 index, which represents large-cap U.S. equities.

BITA Magnificent Seven Index: A market-cap-weighted index of the Magnificent 7 stocks (Apple, Microsoft, Amazon, Meta, Google, Nvidia, and Tesla)

BITA US 500 ex Magnificent 7 Index: An index that represents the S&P 500 after excluding the Magnificent 7 stocks.

Earnings/Price: Consensus analyst expected net income divided by market cap.

Book/Price: Consensus analyst expected book value divided by market cap.

Sales/Price: Consensus analyst expected sales divided by market cap.

Free Cash Flow/Price: Consensus analyst expected free cash flow divided by market cap.

Operating Cash Flow/Price: Consensus analyst expected operating cash flow divided by market cap.

Expected Growth: Consensus analyst expected long-term growth of earnings per share (note: does not guarantee future performance).

R&D/Price: Research and development expenditures over the past 12 months divided by market cap.

S&M/Price: Sales and marketing expenditures over the past 12 months divided by market cap.

PhDs/Price: The estimated number of PhD employees divided by market cap (scaled by billions).

Patents/Price: The estimated number of patent grants obtained over the past 12 months divided by market cap (scaled by billions).

R&D/Sales: Research and development expenditures over the past 12 months divided by sales.

S&M/Sales: Sales and marketing expenditures over the past 12 months divided by sales.

PhDs/Employees: The estimated number of PhD employees divided by total employees.

Patents/Assets: The estimated number of patent grants obtained over the past 12 months divided by total assets (scaled by billions).

% Disruptive: Percent of weight defined as “disruptive,” based on a proprietary classification based on exposure to disruptive technologies (e.g., artificial intelligence, cloud computing).

Mean Reversion: The tendency for an asset price to fluctuate around its long-term average.

Efficient Frontier: Represents the set of optimal investment portfolios with the highest possible combination of two characteristics – typically defined as the highest return per unit of risk but could be any two characteristics.

Net Asset Value (NAV): The sum of all assets less any liabilities, divided by the number of shares outstanding.

Important Information

Investors should carefully consider the funds’ investment objectives, risks, charges and expenses before investing. This and other important information is contained in the prospectus and summary prospectus, which may be obtained by visiting the links above. Please read the prospectus carefully before investing.

Investments involve risk and principal loss is possible. There can be no assurance that the funds will achieve their investment objectives. The funds invest in equity securities, which may fall in value in adverse economic and market conditions. The funds expect to have exposure to the information technology, communications, healthcare, industrials, and consumer discretionary sectors, which face unique competitive, technological, demand, and regulatory risks. The funds may invest in mid- and small-cap companies, which may have limited liquidity and greater volatility. The funds are actively managed and their success will depend on the skills of the advisor and subadvisor, which has a limited operating history. The funds utilize quantitative methods, machine learning and alternative data, which are subject to data quality, model, algorithm, regulatory, and technological risks. The funds employ a value investing strategy, which may fail if stocks do not reach the subadvisor’s assessment of fair value. DTAN invests in non-U.S. securities, which involve risks that may not be present with investments in U.S. securities. For example, investments in non-U.S. securities may be subject to risk of loss due to foreign currency fluctuations or to political or economic instability. Please see the prospectuses for more details of these and other risks.

Unlike mutual funds, ETFs may trade at a premium or discount to their net asset value. ETF shares may only be redeemed at NAV by authorized participants in large creation units. There can be no guarantee that an active trading market for shares will exist. The trading of shares may incur brokerage commissions.

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The funds are distributed by Quasar Distributors, LLC. The funds' investment advisor is Empowered Funds, LLC, which is doing business as ETF Architect. The funds' investment subadvisor is Sparkline Capital LP.

For a complete list of ITAN holdings: <https://etf.sparklinecapital.com/itan>.

For a complete list of DTAN holdings: <https://etf.sparklinecapital.com/dtan>.