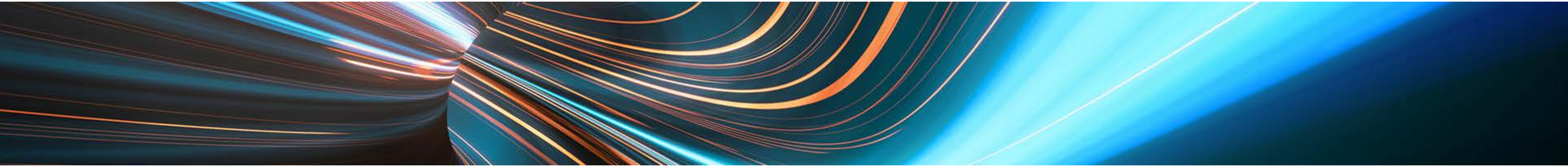
Morgan Stanley

January 2, 2024 05:00 PM GMT



Morgan Stanley

10 Themes For 2024

Edward Stanley, Matias Ovrum

Equity Strategists

Morgan Stanley & Co. International plc+

All information as of December 31st 2023

Morgan Stanley

Cross Asset Relative Performance

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
US Venture 163%	Global Commodity 21.08%	US Real Estate 11.51%	Global Commodity 23.90%	US Venture 63.13%	US Real Estate 37.96%	EM Equity 34%	US Real Estate 42.12%	EM Equity 39.38%	US Fixed Income 5.24%	EM Equity 78.51%	Small Cap US Equity 26.85%	US Fixed Income 7.84%
EM Equity 63.70%	US Real Estate 12.75%	US Fixed Income 9.19%	Global Fixed 22.37%	EM Equity 55.82%	EM Equity 25.55%	Global Commodity 17.50%	EM Equity 32.17%	US Venture 27.37%	Global Fixed 4.39%	US High Yield 58.21%	US Real Estate 19.63%	US High Yield 4.98%
DM ex-U.S. Equity 23.67%	US Fixed Income 10.86%	Small Cap US Equity 5.62%	US Fixed Income 10.26%	Small Cap US Equity 47.25%	DM ex-U.S. Equity 20.38%	US Real Estate 15.35%	DM ex-U.S. Equity 25.17%	DM ex-U.S. Equity 12.44%	Cash 2.06%	US Venture 54.73%	EM Equity 18.88%	Global Fixed 4.36%
Small Cap US Equity 19.77%	Global Fixed 4.02%	US High Yield 5.09%	US Real Estate 2.82%	US Real Estate 40.69%	Small Cap US Equity 18.33%	DM ex-U.S. Equity 14.47%	Small Cap US Equity 18.37%	Global Fixed 11.03%	US High Yield -26.16%	US Real Estate 37.13%	Global Commodity 16.70%	US Venture 2.39%
Large Cap US Equity 19.64%	Cash 0.26%	Global Fixed 0.74%	Cash 1.78%	DM ex-U.S. Equity 39.42%	Global Fixed 12.54%	Large Cap US Equity 4.91%	Large Cap US Equity 15.79%	Global Commodity 11.10%	US Venture -32.6%	DM ex-U.S. Equity 33.67%	US High Yield 15.12%	Large Cap US Equity 2.11%
Global Commodity 18.06%	US High Yield -5.69%	Cash 0.15%	US High Yield -1.37%	US High Yield 28.97%	US Venture 12.42%	Small Cap US Equity 4.55%	US High Yield 11.85%	US Fixed Income 6.97%	Small Cap US Equity -33.79%	Small Cap US Equity 27.17%	Large Cap US Equity 15.06%	Cash 0.10%
US Real Estate 6.28%	Small Cap US Equity -8.46%	EM Equity -4.82%	EM Equity -6.16%	Large Cap US Equity 28.68%	US High Yield 11.13%	Cash 3.07%	US Venture 8.45%	Large Cap US Equity 5.49%	Global Commodity -36.60%	Large Cap US Equity 26.47%	US Venture 11.06%	Small Cap US Equity -4.18%
US High Yield 2.39%	Large Cap US Equity -12.66%	Large Cap US Equity -10.53%	DM ex-U.S. Equity -15.80%	Global Commodity 22.70%	Large Cap US Equity 10.88%	US High Yield 2.74%	Global Fixed 8.16%	Cash 5%	Large Cap US Equity -37%	Global Commodity 18.70%	DM ex-U.S. Equity 8.95%	US Real Estate -6.46%
Cash 1.15%	DM ex-U.S. Equity -14.13%	DM ex-U.S. Equity -17.83%	Small Cap US Equity -20.48%	Global Fixed 19.36%	Global Commodity 7.60%	US Fixed Income 2.43%	Cash 4.85%	US High Yield 1.87%	DM ex-U.S. Equity -43.56%	Global Fixed 7.53%	US Fixed Income 6.54%	DM ex-U.S. Equity -12.21%
US Fixed Income -2.54%	US Venture -25.5%	Global Commodity -20.11%	Large Cap US Equity -22.10%	US Fixed Income 4.10%	US Fixed Income 4.34%	US Venture -5.07%	US Fixed Income 4.33%	Small Cap US Equity -1.57%	US Real Estate -48.21%	US Fixed Income 5.93%	Global Fixed 4.95%	Global Commodity -13.40%
Global Fixed -5.63%	EM Equity -31.80%	US Venture -21.3%	US Venture -47.13%	Cash 1.15%	Cash 1.33%	Global Fixed - 8.65%	Global Commodity -2.70%	US Real Estate -7.39%	EM Equity -53.33%	Cash 0.21%	Cash 0.13%	EM Equity -18.42%

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
US Real Estate 27.73%	US Venture 48.82%	US Venture 25.11%	US Venture 23.19%	Small Cap US Equity 21.31%	US Venture 55.82%	US Venture 8.52%	US Venture 53.66%	US Venture 67.91%	US Venture 23.15%	Global Commodity 13.75%	US Venture 55.44%
US Venture 20.67%	Small Cap US Equity 38.82%	US Real Estate 15.02%	Large Cap US Equity 1.38%	US High Yield 17.13%	EM Equity 37.28%	Cash 1.87%	Large Cap US Equity 31.49%	Small Cap US Equity 19.96%	Large Cap US Equity 28.71%	Cash -1.75%	Large Cap US Equity 24.73%
EM Equity 18.23%	Large Cap US Equity 32.39%	Large Cap US Equity 13.69%	US Fixed Income 0.55%	Large Cap US Equity 11.96%	DM ex-U.S. Equity 24.21%	US Fixed Income 0.01%	Small Cap US Equity 25.52%	Large Cap US Equity 18.40%	Global Commodity 27.1%	US High Yield -10.98%	Small Cap US Equity 16.35%
DM ex-U.S. Equity 16.41%	DM ex-U.S. Equity 21.02%	US Fixed Income 5.97%	Cash 0.05%	Global Commodity 11.40%	Large Cap US Equity 21.83%	US High Yield -2.08%	DM ex-U.S. Equity 22.49%	EM Equity 18.31%	US Real Estate 26.09%	DM ex-U.S. Equity -15.34%	DM ex-U.S. Equity 13.01%
Small Cap US Equity 16.35%	US High Yield 7.44%	Small Cap US Equity 4.89%	US Real Estate -0.79%	EM Equity 11.19%	Small Cap US Equity 14.65%	Global Fixed -2.15%	US Real Estate 21.19%	Global Fixed 10.11%	Small Cap US Equity 14.82%	US Fixed Income -15.76%	US Fixed Income 8.53%
Large Cap US Equity 16%	US Real Estate 3.67%	US High Yield 2.45%	DM ex-U.S. Equity -3.04%	US Real Estate 4.06%	Global Fixed 10.51%	Large Cap US Equity -4.38%	EM Equity 18.44%	DM ex-U.S. Equity 7.59%	DM ex-U.S. Equity 12.62%	Global Fixed -16.25%	US Real Estate 7.03%
US High Yield 15.81%	Cash 0.07%	Cash 0.03%	Small Cap US Equity -4.41%	DM ex-U.S. Equity 2.75%	US Real Estate 10.36%	US Real Estate -5.63%	US High Yield 14.32%	US Fixed Income 7.51%	US High Yield 5.28%	Large Cap US Equity -19.44%	Global Fixed 5.72%
US Fixed Income 4.21%	US Fixed Income -2.02%	EM Equity - 2.19%	US High Yield -4.47%	US Fixed Income 2.65%	US High Yield 7.5%	Small Cap US Equity -11.01%	US Fixed Income 8.72%	US High Yield 7.11%	Cash 0.05%	EM Equity -20.56%	EM Equity 5.21%
Global Fixed 4.09%	EM Equity -2.6%	Global Fixed -3.09%	Global Fixed -6.02%	Global Fixed 1.49%	US Fixed Income 3.54%	Global Commodity -13.0%	Global Commodity 5.40%	Cash 0.67%	US Fixed Income -1.54%	Small Cap US Equity -21.56%	US High Yield 4.91%
Cash 0.11%	Global Fixed -3.08%	DM ex-U.S. Equity -4.32%	EM Equity -14.92%	US Venture 0.36%	Cash 0.86%	DM ex-U.S. Equity -14.09%	Global Fixed 5.09%	Global Commodity -3.50%	EM Equity -2.54%	US Real Estate -26.25%	Cash 1.2%
Global Commodity -1.10%	Global Commodity -9.60%	Global Commodity -17.30%	Global Commodity -24.70%	Cash 0.33%	Global Commodity 0.70%	EM Equity -14.57%	Cash 2.28%	US Real Estate -9.04%	Global Fixed -7.05%	US Venture -54.88%	Global Commodity -10.58%

Source: Morningstar, Oliver Wyman, Morgan Stanley Research

10 Big Themes for 2024

Macro

ESG

Micro

1. **Eastern Giants (Re)awaken:** Japan and India to outperform. Japan ROE to 12% by 2025 – sustained reflation and rising productivity at the macro level should drive further improvement in corporate profitability in Japan. The latter a high conviction continuation from last year's themes.
2. **US Net Liquidity Reversal:** 2023 was a top-down year driven by a greater degree of liquidity in the system than anticipated. When this rolls off in 2024, US stocks will likely underperform. Long equal-weight S&P versus headline S&P. Favour late-cycle defensive positioning.
3. **The M&A and IPO Revival:** After a prolonged drought in primary and secondary activity, the market is set to turn, acquirer balance sheets are flush with cash. A revival doesn't need rising markets, just calm markets. >200% recovery in deal value by 2025 if history repeats.
4. **Weather & Conflict Bottlenecks:** 80% of trade flows by sea. Ships forced to divert face a 9-day/7,000km longer journey (>30%). The inflation delta to the European consumer is likely to be most acute. This is just as El Niño intensifies. Our Security playbook should be helpful in 2024.
5. **Renewable Recovery:** Decarb has seen steady outflows, but as a theme now looks cheap vs forward growth. Our analysts expect solar and wind consumption to triple to 30%, with overall renewable mix at 45% by 2030. Traditional energy companies are outspending renewable pure plays.
6. **Carbon Capture Catalysts:** A theme that has had a number of false starts is generating investor interest. With the largest site in the world only able to remove c70 minutes of human emissions per year, the necessity to scale this technology is creating investment opportunities.
7. **Autos – Peak China Concern to Battery Oversupply:** 2023 brought a wave of JVs. 2024 should see China's lead widen, but this is expected. Western OEM spending and risk to ROIC is significant, but can be mitigated. The bigger concern and opportunity in 2024 is battery oversupply.
8. **AI – Generative to Edge; Enablers to Adopters:** The Generative AI 6 have outperformed the market by >40%. 2024 has more catalysts for Edge AI to catch up, with improvements in processing, memory and battery on consumer Edge devices. All we need now is a Killer App.
9. **Fintech Consolidation & Tokenisation's Return:** 2024 could be the year in which we see more meaningful consolidation, especially in overcrowded areas like Neobanks. Rising crypto prices could generate a return in tokenisation experimentation by corporates.
10. **Healthy Life Extension & AI in Healthcare:** After the hype of GLP-1s in 2023, we believe 2024 investor interest will broaden to smart chemo ADCs and AI adoption in healthcare. A VC funding rally should support more breakthroughs and favour Pharma & Biotech.

Source: Morgan Stanley Research

Two Common Threads for 2024

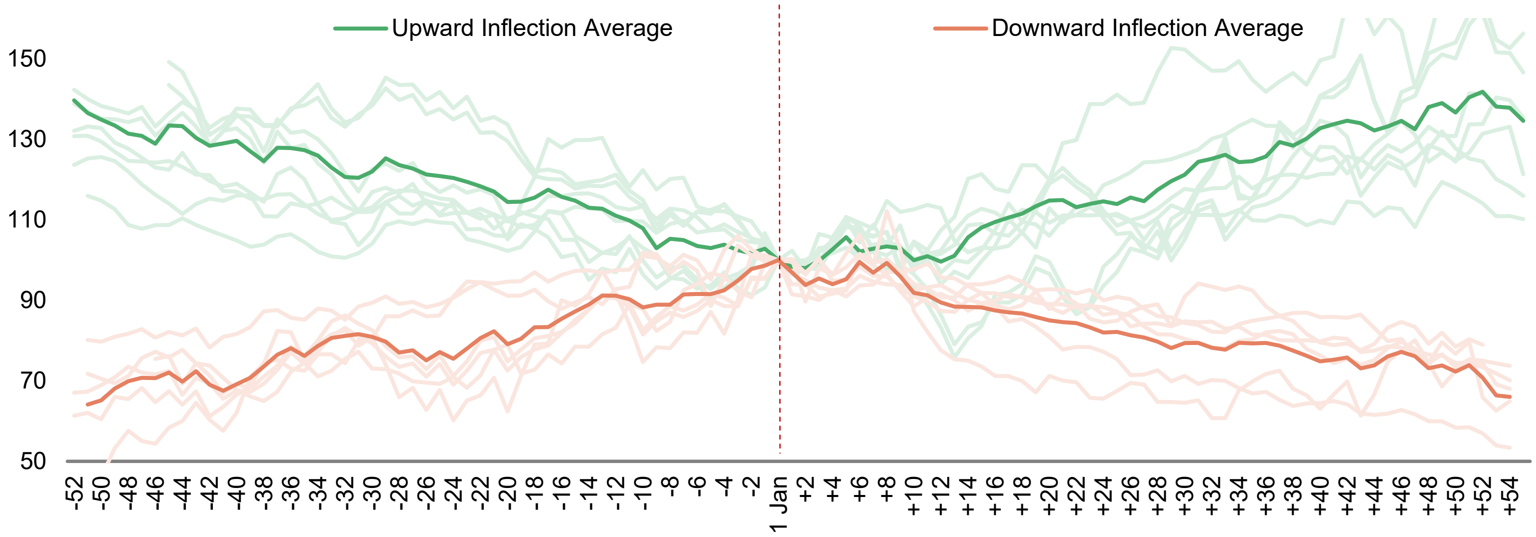
Throughout the 10 themes we highlight in this deck, there are two common threads that we think investors should be aware of. They are not necessarily investible in their own right, but rather are umbrella dynamics that are evident throughout our 10 themes and will likely impact portfolios in 2024:

1. **Dramatic Thematic Reversals** – History is full of examples of January reversals. In fact, January is the most frequent month for this across the 70 cycles we have looked at (see here). This is relevant for 2024, particularly given the crowding in AI and Obesity trades, as well as the negative sentiment for Renewables.

2. **Speed and Breadth of Breakthroughs** – As we show with a high-level analysis of DeepMind's breakthroughs, the frequency of major scientific breakthroughs is increasing. These range from Nuclear Fusion and Weather Forecasting to Material Sciences and Resistant Antibiotic innovation. This will continue in 2024, we believe, as inference gets ever cheaper.

A Year of Dramatic Thematic Reversals

In previous research (see here) we tracked both macro and micro bubbles – 70 of them over the past 100 years. We monitored them 3 years prior to peak and 3 years post peak to find they behave in remarkably predictable ways. However, one aspect on which we did not elaborate in that piece was the importance of January as the most frequent month of reversal. These January performance inversions are particularly relevant for themes that delivered >20% upside or downside in the year prior. From China Tech and Biotech in 2019, EVs in 2021, SaaS in 2003 and 2022, history is full of examples of January reversals in both directions. With over $6 trillion of market cap added to the AI Enablers and Obesity Innovators in 2023 (and lacklustre performance for the perceived disrupted names), history tells us these groups are susceptible to mean-reversion. El Niño and Shrink/Theft trades also fall into this category. Throughout this deck, this overarching theme will become evident. From IPO/M&A activity and Renewables to Fintech and Tokenisation.

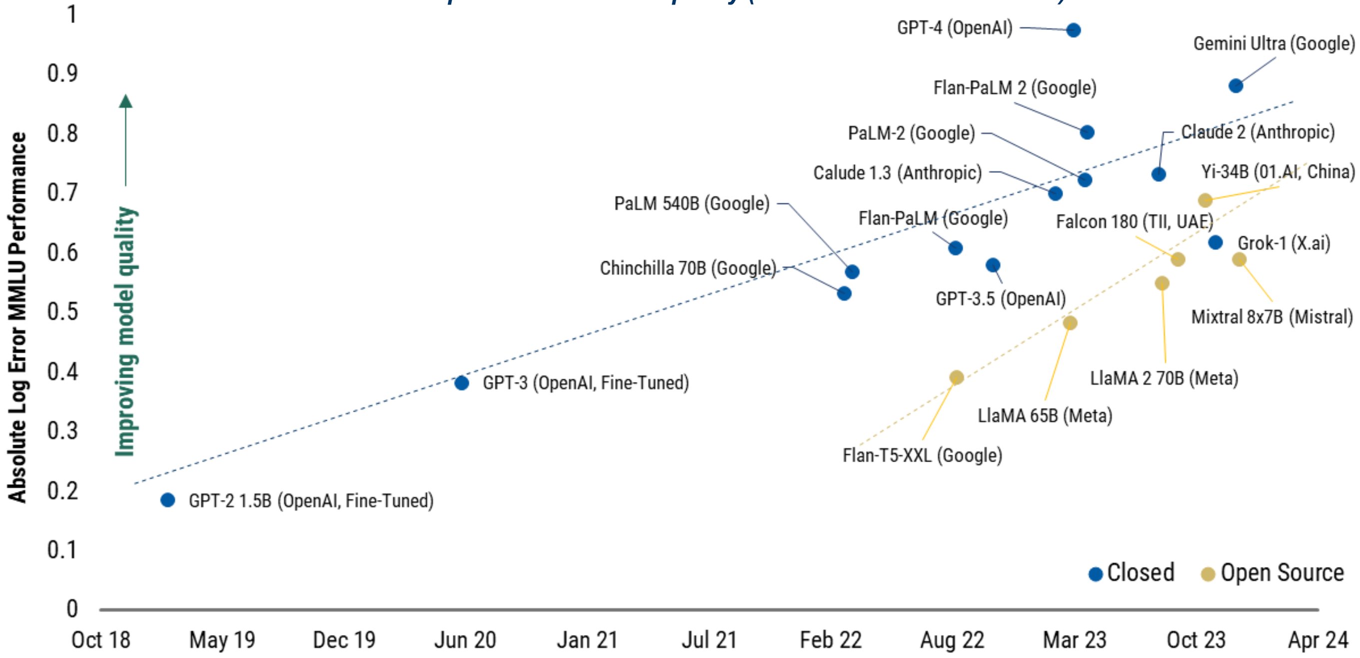


Source: Bloomberg, Morgan Stanley Research

Cheaper & Better AI Inference Accelerates AI Adoption & Diffusion in 2024

2023 was a year of equity performance dominated by the picks-and-shovels companies enabling the Generative AI boom. As Open-Source models improve (particularly relative to proprietary models), the resulting cost declines of inference will allow AI to become democratised across geographies and sectors. This is a broad-sweeping diffusion theme impacting all end markets, but one in which adopters should start to build, integrate and benefit beyond purely the Enabler stocks.

Closed and Open-Source model quality (5-shot MMLU Performance)

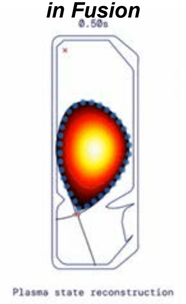


Source: Hugging Face, ARK, X, Morgan Stanley Research

Expect AI Adopters to Flourish in 2024 as Inference Cheapens

Nuclear Fusion

In 2022, DeepMind held plasma in a Tokamak longer than had been possible before, marking a breakthrough in Fusion

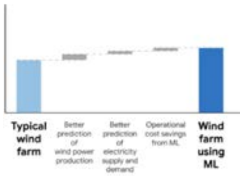


Protein Folding

In 2022, it was announced that the predictions of over 200 million proteins would be released as an Open Source dataset

Electrical Grid Stability

In 2019, DeepMind helped prove that the application of machine learning could yield a c18% energy gain via volatility smoothing.

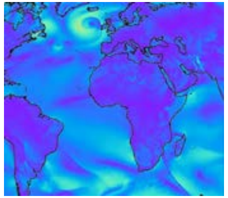


Music Generation

In 2023, working with YouTube, DeepMind's Lyria model was launched to help creators and singer songwriters

Weather Forecasting

In 2023, the company's state-of-the-art model delivered 10-day weather predictions at unprecedented accuracy in under one minute

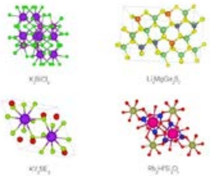


Diversity & Inclusion

In 2019, Project Euphonia started to focus on helping millions of people with non-standard speech be better understood

Material Science

In 2023, DeepMind's AI tool GNoME finds 2.2m new crystals, including 380,000 stable materials that could power future technologies



---------------------------------- Sector & Technology Diffusion Impacts ----------------------------------

- Energy & Emissions
- Pharma & Drug Discovery
- Renewables & Emissions
- Content Creation
- Airlines, Crops, Logistics
- Healthcare, Medtech
- Batteries, EVs, Chips, Quantum

Source: DeepMind, Morgan Stanley Research

Watch and Listen

[Podcast | Europe for the Global Investor x Thinking Thematics]

(14th Dec 2023)

What better way to end a fascinating year than to start talking about the next one? In this collaboration between Europe for the Global Investor and Thinking Thematics, Paul Walsh speaks to Ed Stanley about the themes that worked in 2023, the ones that didn't, and what to focus on moving into 2024.

Listen Now

[Video | Thematics: Pushing AI to the Edge]

(14th Dec 2023)

We think the AI limelight will shift from "Generative" in 2023 to "Edge" in 2024. For those new to the topic, and with the help of our global analysts' expertise, this short video should help investors get primed for an emerging theme.

Watch Now

10 Big Themes for 2023: Scorecard

Macro

ESG

Micro

Theme	Progress Report in 2023
1. **Margin Pressure** – Pricing power declines and costs remain sticky, impacting margins in the US and Europe.	**Mixed:** Took longer to play out than anticipated. Pricing power proved resilient, but Chinese exported deflation is now changing this.
2. **Stagflation, Inventory & Deflation** – Many companies with excess inventory will turn to aggressive discounting.	**Mixed:** Deflation and inventory unwind became more pronounced through the course of the year, particularly in the Autos sector.
3. **China Reopening** – A V-shaped recovery in China growth is likely as the Covid reopening accelerates.	**Incorrect:** While China did see a post-Covid recovery, the performance of Chinese equities underperformed expectations.
4. **ESG Rate of Change** – ESG rate of change will be a critical focus for investors.	**Correct:** US investors are more amenable to this argument. European investors have begun to incorporate evolving thematic purity.
5. **Earthshots** – Earthshots are radical technological decarbonisation accelerants or warming mitigants.	**Correct**: With most nations off their necessary paths to keep warming below 2 degrees, greater investment in warming mitigants will be needed.
6. **Downround IPOs & Cash Calls** – Institutions could face the prospect of large cash call obligations.	**Mixed**: While IPOs occurred, they were few in number. GPs avoided calling cash from LPs until the rate outlook became clearer.
7. **India's Decade** – Conditions in place for an economic boom fuelled by offshoring, manufacturing and the energy transition.	**Mixed**: The secular India story remains an appealing proposition for investors, but with debate over the impact of Generative AI.
8. **Rise of Saudi** – Saudi Arabia is undergoing an unprecedented transformation, with sweeping social and economic reforms.	**Correct**: The Saudi investment case remains compelling but with investors reticent to invest in pure plays. Oil prices add volatility to the case.
9. **Multi-Earning in a Gen AI Era** – Gen Z is leading a paradigm shift. As the cost-of-living bites, desire to multi-earn is on the rise.	**Correct**: The expectation was that post-Covid would undermine the Multi-Earning thesis. Gen AI has reaccelerated the trend.
10. **Obesity x Social Media** – Early signs of an exponential virtuous cycle benefit Novo and Lilly.	**Correct**: This theme played out most promisingly of all, with >$600bn added to the leaders and lost from the perceived disrupted names.

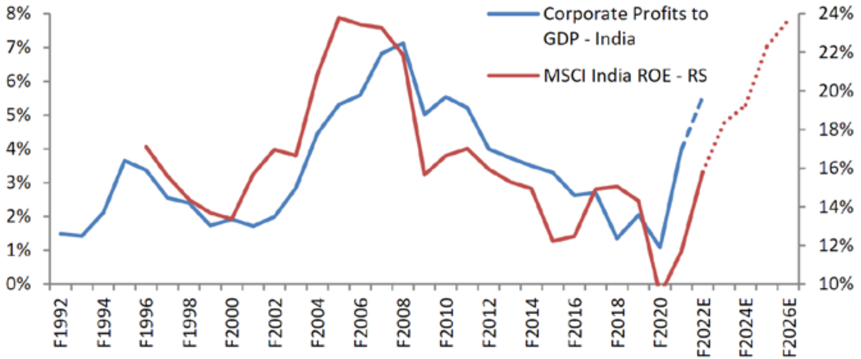
10 Themes for 2024

Theme 1: Eastern Giants (Re)awaken – Japan & India

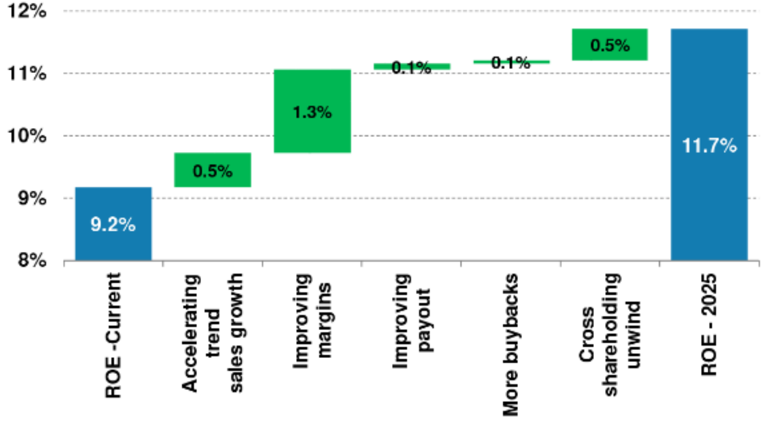
Equity Strategists: Jonathan Garner, Daniel Blake

Upgrade India to overweight for secular leadership: Our EM strategists see India as highly attractive, with relative valuations less extreme than in October. The strategist and bottom-up analyst scores reflect MS' Blue Paper thesis on India's Decade. Multipolar World trends are supporting FDI and portfolio flows, with India adding a reform and macro-stability agenda that underpins a strong capex and profit outlook. The team sees a secular trend toward sustained superior USD EPS growth versus EM over the cycle, with a young demographic profile supporting equity inflows. See report here.

India ROE Path & Forecast



Japan ROE Bridge



Japan ROE to 12% by 2025: Sustained reflation and rising productivity at the macro level will likely drive further improvement in corporate profitability in Japan. The team raised their forecast for MSCI Japan Return on Equity to 12% (from 11%) by year-end 2025. This would be almost 2.5x the level when Abenomics was launched in late 2012. In turn, that will likely drive further valuation re-rating from 1.4x P/B to 1.8x and market outperformance versus global equity peers. They identify powerful fund flow drivers including rising weightings to Japan from global asset allocators, increased domestic equity flows from forthcoming NISA account reforms and persistently strong corporate buybacks. See report here.

Source: Refinitiv, Morgan Stanley Research estimates (E)

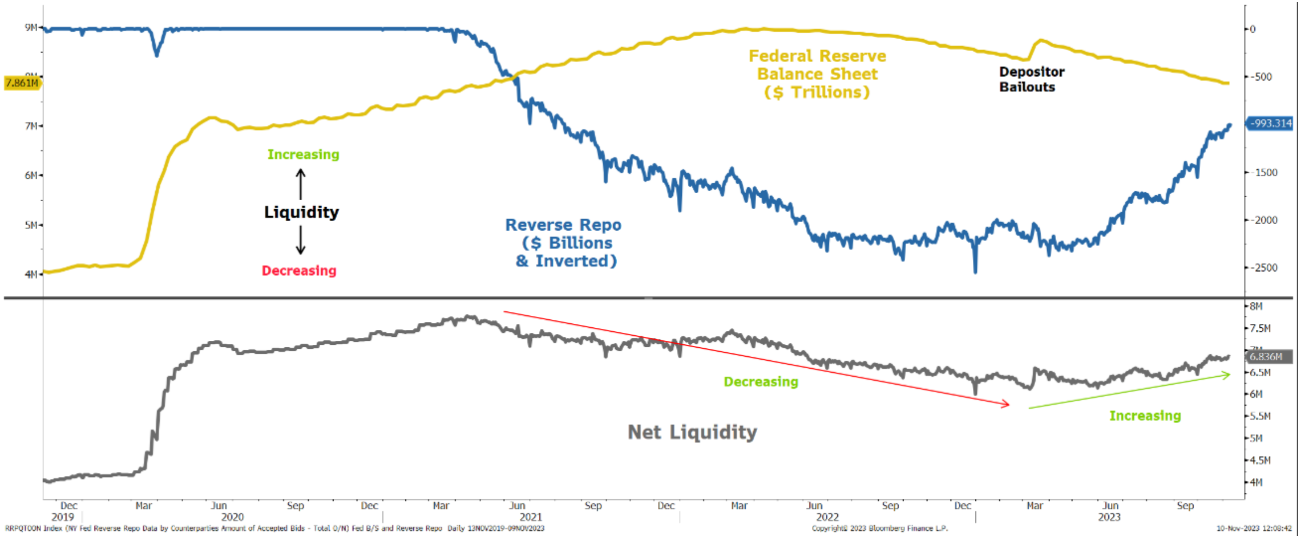
Source: Refinitiv, Morgan Stanley Research

Theme 2: US Net Liquidity Reversal

Equity Strategists : Michael Wilson, Andrew Pauker, Michelle Weaver

The liquidity reversal: In addition to earnings stability, cost leadership and operational efficiency demonstrated by a narrow group of large companies, our US strategists believe there were several other factors in 2023 that kept the headline index higher than fundamentals suggested. There was a substantial injection of liquidity from 3 sources: 1) The bailout of depositors at several regional banks and the shoring up of other regional banks added roughly $500bn to bank reserves. This support has offset some of the credit tightening from higher rates and provided additional liquidity that may not have been available otherwise. 2) Treasury issuance was very limited in 1H23 due to the debt ceiling constraint. This had a “crowding in” effect on markets, especially Treasuries and IG credit, which supported valuations of other risk assets. 3) While the Treasury issuance has picked up materially since July, it has been skewed toward Treasury Bills and absorbed by the reverse repo facility. More specifically, this facility has been drained by over $1.6tn this year, mostly since June when Treasury issuance resumed. This is providing an offset to liquidity being drained by the Fed's ongoing QT and elevated Treasury issuance. The team sees this support as finite. [See report here.](#)

Components of Liquidity for US Equity markets



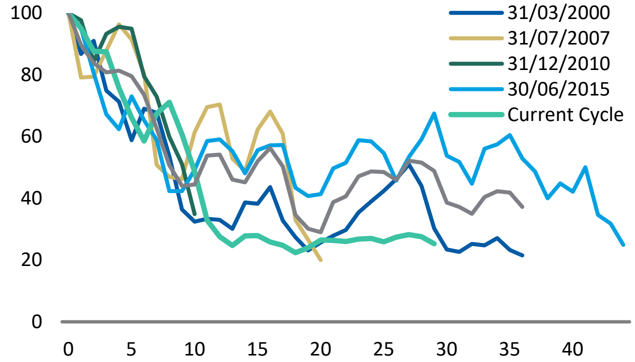
Source: Bloomberg, Morgan Stanley Research

Theme 3: M&A & IPO Revival

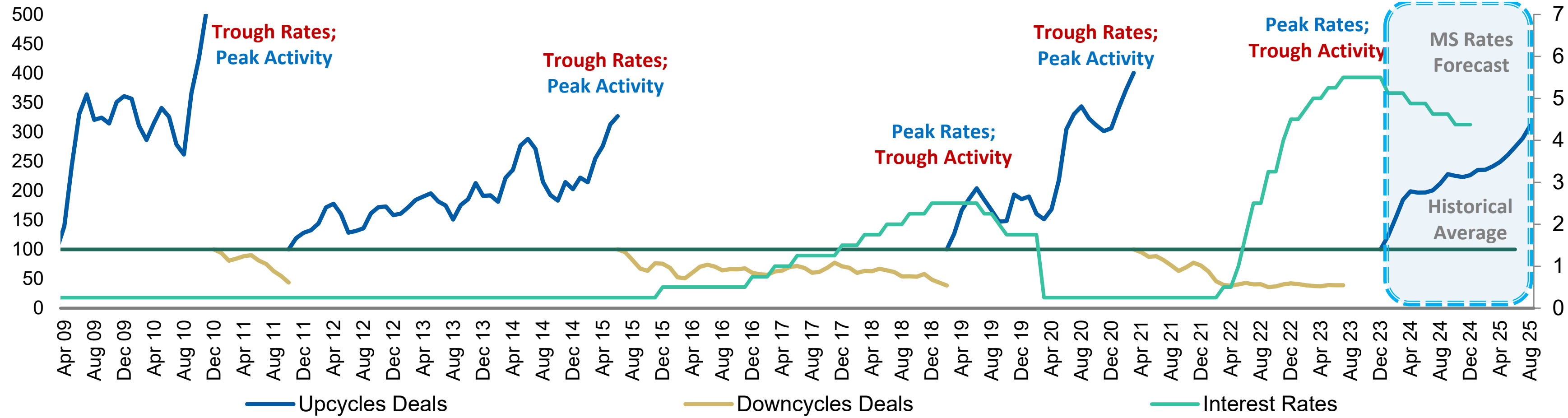
Equity Strategist: Edward Stanley

>200% recovery on the cards? IPO and Secondary market activity tend to rally for c36 months on average, relative to the drawdown in activity in prior cycles which have tended to last c28 months. We are currently 33 months past peak in the current down-cycle. If Q4 were to mark a trough in IPO and public market secondary activity, 5 prior cycles over nearly 3 decades suggest a strong recovery in 2024/25. In this scenario, 4Q24 average deal volume and value would be up 90% and 160% respectively from the lows; by 4Q25 these figures could rise to 100% and 240% respectively. See report here. For more on both topics, see the full Venture Vision collection here.

Months of primary/secondary value decline post peak



Monthly primary & secondary volumes relative to US interest rates



Source: Pitchbook, Bloomberg, Morgan Stanley Research

Theme 4: Weather & Conflict Bottlenecks

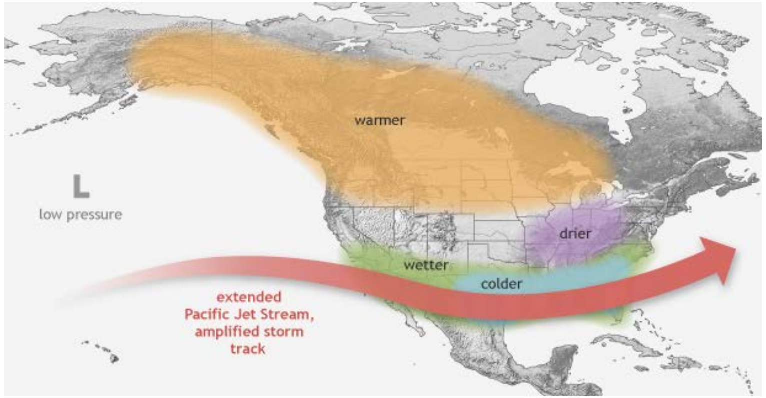
Equity Analysts: Javier Martinez, Edward Stanley, Stephen Byrd, Cedar Ekblom

El Niño to intensify further: Extreme weather events are broadening and strengthening. The macro effects have the potential to be inflationary, if increased restrictions through the Panama Canal become more acute. The WMO reports that El Niño has a 90% likelihood of continuing through the Northern Hemisphere winter by April 2024, pushing global average temperatures higher. Companies mentioning El Niño or weather disruption in transcripts underperformed the S&P500 by up to 28ppt in 2023. Of the stocks highlighted as impacted by our analysts, Insurance and Brazilian S&E are the top performers YTD, US Utilities and Chemicals the bottom. See here

Different times and distance of shipping routes from Asia

Source: Vessel Value, K+N, Morgan Stanley Research

Weather pattern change in the US under El Niño conditions



Source: NOAA, Morgan Stanley Research

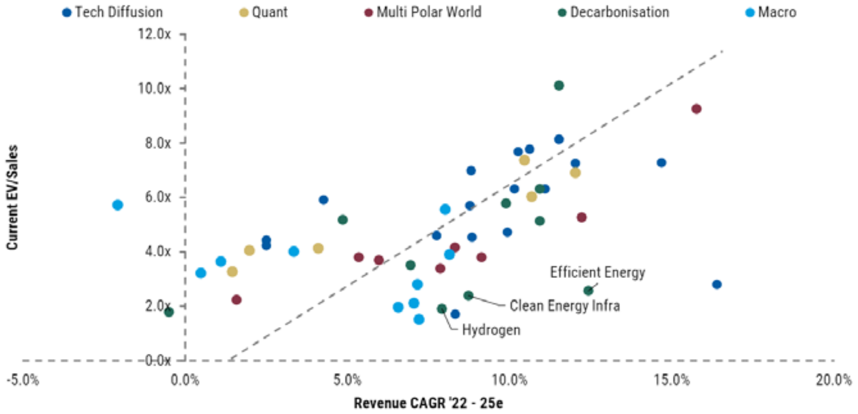
80% of trade flows by sea: 30% of ocean container traffic flows through the Red Sea, with the largest impact on the Asia-to-Europe leg: 12% of global oil, 8% of LNG. Longer journeys mean less capacity and higher freight rates. Ships forced to avoid the Suez Canal and divert round the Cape of Good Hope instead face a 9-day longer journey (>30%) with an extra 7,000km of fuel to consider in their calculations. The inflation delta to the European consumer is likely to be most acute. Air freight is c4x more expensive but a much smaller network. A 747 plane is only able to carry seven 40ft containers. We think investors should dust off our Security playbook for 2024. See here

Theme 5: Renewables Recovery

Equity Analysts: Mayank Maheshwari, Edward Stanley, Stephen Byrd, Rob Pulleyn, Mike Canfield

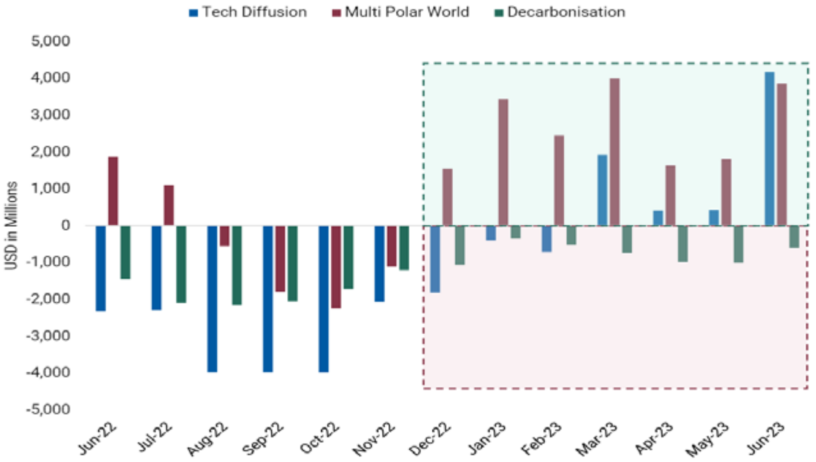
Outlook for renewable demand: Our analysts expect solar and wind powered electricity consumption to triple to 30%, with the overall renewable mix at 45% by 2030. Our team estimates solar/wind based generation in 2030 to be 200bps above IEA base case; they see upside from better solar panel efficiency and higher installation of onshore wind in the US/Europe. Overall, China, India, the US and Europe will be key to driving the increase in renewable consumption and capacity, as cost to produce falls with equipment costs. However, sentiment remains poor in Renewables. See report here.

Theme sales CAGR versus EV/Sales valuation



Source: MSCI, Bloomberg, Morgan Stanley Research estimates (e)

Major theme fund flows



Decarb screens the most attractive of our 3 Key Themes: Continuing from the previous theme, after a substantial 'clean-out' in global renewables in 2023, Decarb related themes are looking undervalued relative to median growth estimates. We believe that sufficiently cheap valuations will warrant increased investor attention in 2024, despite the tough rate backdrop for longer-term renewables projects and investor concerns around growth/ profitability. Our ESG team believes names with high barriers to entry & attractive valuations will be the first to shake the underperformance of 2023 in the new year. See report here.

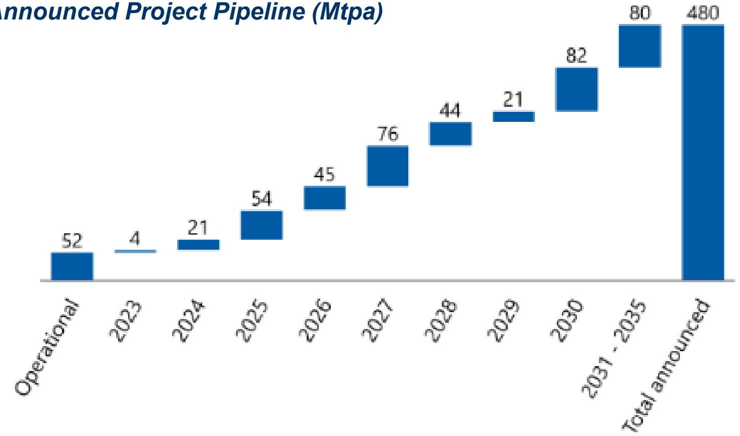
Source: Morningstar, Morgan Stanley Research

Theme 6: Carbon Capture Catalysts

Equity Analysts: Rachel Fletcher, PhD, Michael P. Canfield, Devin McDermott, Stephen Byrd

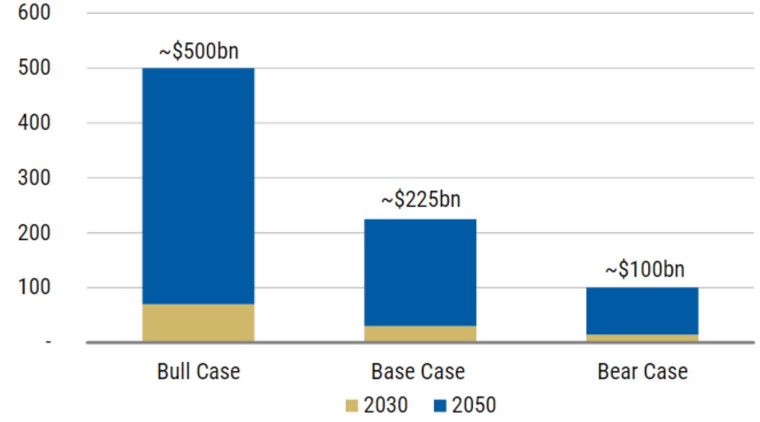
Carbon Capture (CCS) can be the global climate insurer: Although we are seeing record levels of renewable energy deployment, many of the biggest global emission centres are not on track to reach stated targets. The longer major countries progress behind carbon targets, the more attractive CCS becomes as the 'plug' to solve national carbon budgets. This drives a large TAM. Carbon capture is an important decarbonisation tool, particularly for hard-to-abate industries, such as cement, steel and chemicals. The team sees 30 technology providers and enablers to play. See report here

Announced Project Pipeline (Mtpa)



Source: Wood Mackenzie, Morgan Stanley Research

CCS Total Addressable Market in 2030 and 2050



CCS advances will be driven by diversifying oil & gas players: Morgan Stanley's Energy team has previously estimated that the total addressable market (TAM) for carbon capture and storage (CCS) could be $30bn globally by 2030, and $225bn by 2050 – this analysis was based on a $75/t average carbon price. In this scenario, carbon capture volumes grow to ~400Mtpa by 2030 – this is aligned with both IEA and Wood Mackenzie estimates for carbon capture growth by the end of the decade based on the announced project pipeline. We expect investor interest to grow as 'first capture' for some projects start in 2024, as well as some mega-scale project awards. See report here

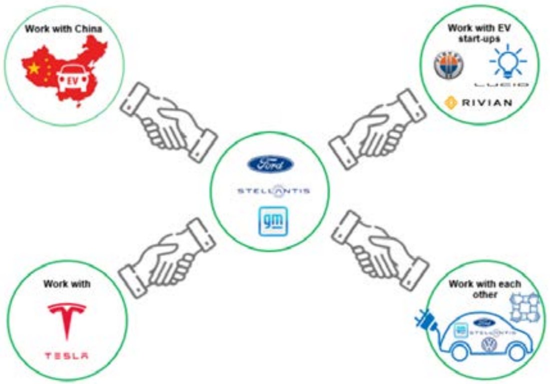
Source: Morgan Stanley Research estimates

Theme 7: Peak China Concern to Battery Surplus

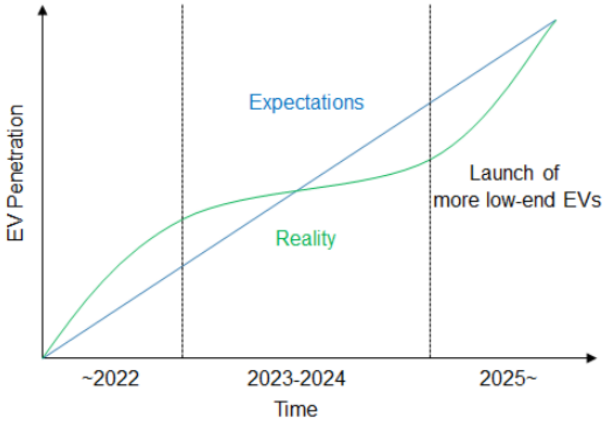
Equity Analysts: Jack Lu, Young Suk Shin, Adam Jonas, Ross MacDonald

From peak China concern & JVs in 2023… From an Autos perspective, our teams believe we are passing through a period of peak China concern. The way the latest guidance is written, it appears that China-sourced battery materials used in an eligible component manufactured in the US still would qualify for AMPC credits. In spite of this and numerous JVs between Western and Chinese OEMs in 2023, we nonetheless seem to be approaching a standoff wherein the US is heading towards the Slow EV case. See report here

OEM Game Theory Decision Options



A rapid battery recalibration is needed if consumer demand is to recover



…to battery oversupply in 2024: Overcapacity and high inventory mean battery price competition in China is likely to continue. The key reason being a battery technology commoditisation (rising LFP vs stalling NCM penetration). There are five potential outcomes: 1) capacity push-outs, heading into 2024; 2) continued downcycle of battery materials; 3) margin deterioration for battery majors; 4) price competition expanding from China to the global market; and 5) opening of EV platforms to tier 2 battery makers. Despite recent share price corrections, we caution investors against trying to bottom-fish battery names. Auto OEMs, notably Europeans, could be beneficiaries (given positioning), so too domestic & micro grid storage, as many of the Chinese oversupplied cells do not have warranties to go into EVs, meaning they could find alternative market demand. See report here

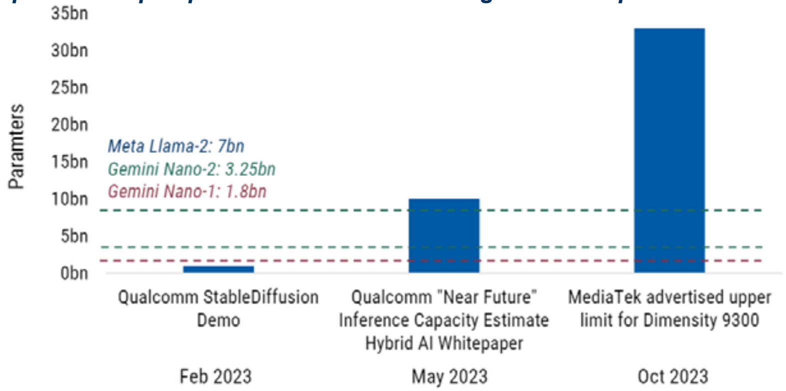
Source: Morgan Stanley Research

Theme 8: Generative to Edge; Enablers to Adopters

Equity Analysts: Edward Stanley, Erik Woodring, Lee Simpson, Andy Meng

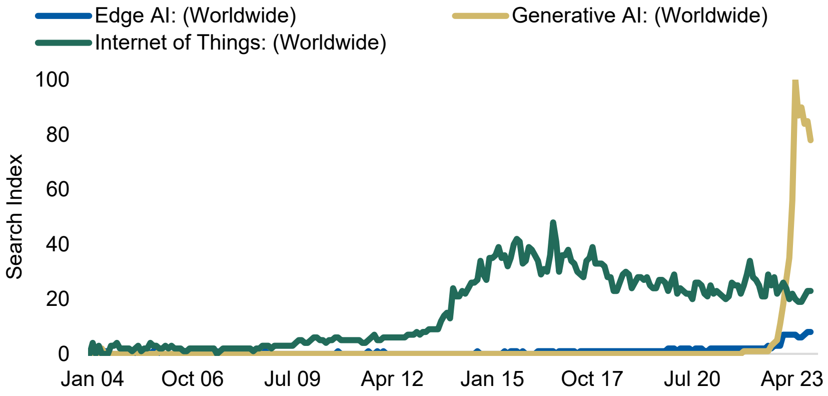
Growing OEM focus and upcoming catalysts: As AI applications begin diffusing into everyday hardware objects, we believe Edge AI will gain traction as an important part in the AI story. Gartner estimates that, by 2025, 50% of enterprise data will be created at the Edge, across billions of battery powered devices. Processing at the Edge comes with a series of benefits, including potentially lower latency, privacy and cost. Wo do not view Edge AI as a substitute but, rather, as a complement to Cloud AI. With growing corporate focus and upcoming product releases, we believe 2024 will offer catalysts for this theme to gain traction. See report here

Speed of chip improvement to cater for Edge model expansion



Source: Company data, Morgan Stanley Research

Search Interest in AI and "Edge AI" Trends



Key hurdles to overcome: Battery-powered edge devices have a very different set of problems to solve for vs. cloud computing. Power sources and processing capabilities are key factors that Semi and Hardware OEMs need to get around to prepare devices to handle additional AI workloads. In collaboration with our global hardware teams, we have identified six Edge AI Enablers that we expect will lead in expanding Edge computing capabilities. The Edge AI Enablers underperformed their Gen AI Enablers by 40% in 2023. We believe Edge AI offers some of these more legacy hardware players an attractive opportunity to partake in the AI era. See report here

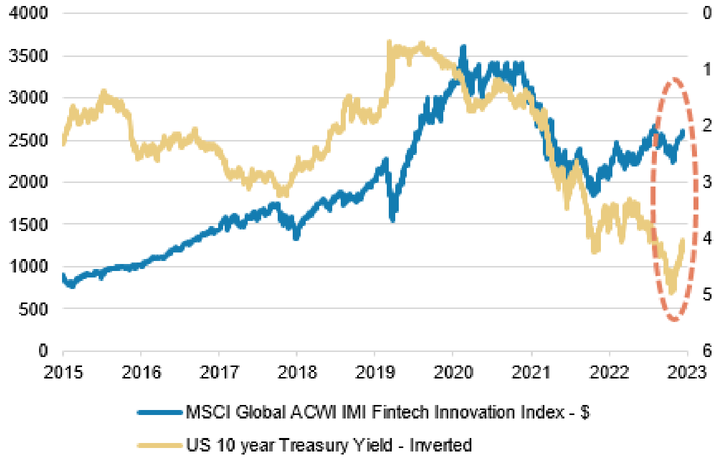
Source: Google Trends, Morgan Stanley Research

Theme 9: Fintech Consolidation & Tokenisation's Return

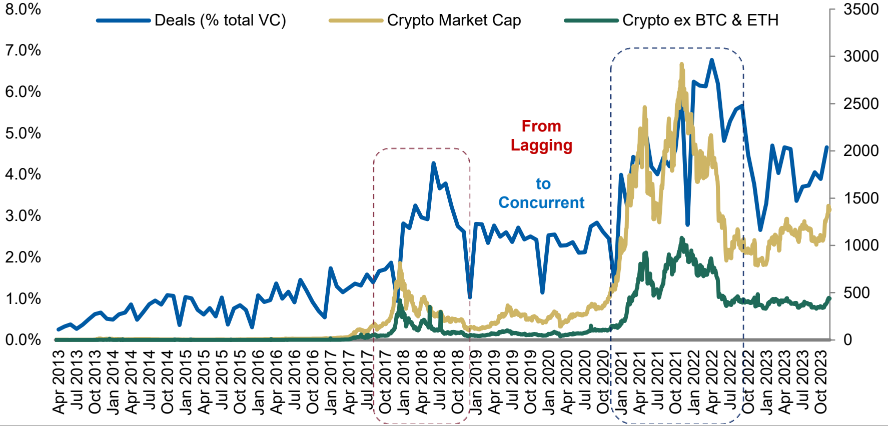
Equity Analysts: Alastair Nolan, Giulia Miotto, Edward Stanley

Poised for fintech consolidation: Like much of the rest of the tech space, fintech names (both public and private) have spent much of the past two years 'getting fit' – reducing headcount/cash-burn and pivoting towards profitability. Klarna is a good example, following a ~85% down-round, the company has reduced headcount, narrowed credit losses and reached profitability while still delivering ~30% revenue growth. With clarity on rate cuts approaching, we think 2024 could be the year in which we see more meaningful consolidation, especially in over crowded areas like Neobanks. See report here

Fintech Equity performance vs Inverted Yield Curve



Crypto Market Cap & Venture Funding



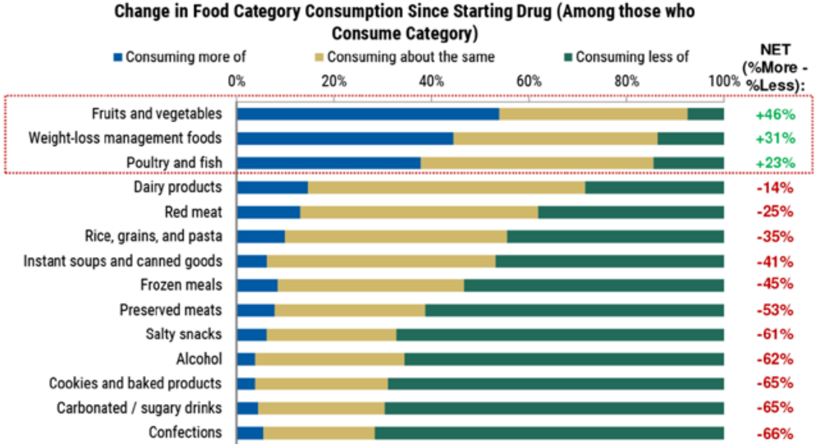
Rising crypto prices = rising tokenisation: Crypto's resilience continues to surprise. Spot ETF excitement has helped drive an >80% recovery in crypto market cap from the lows. The (possible) dawn of a new cycle has driven the AI & Crypto combination to >25% of all venture deals done (see report here). As demonstrated in previous research, there is a high correlation between crypto prices and the number of companies and asset managers looking to leverage tokenisation for supply chain transparency or fractionalisation for democratising access to private market investment vehicles, for example. We think 2024 is likely to see an uptick in these discussions by companies. See report here

Source: Pitchbook, Bloomberg, Morgan Stanley Research

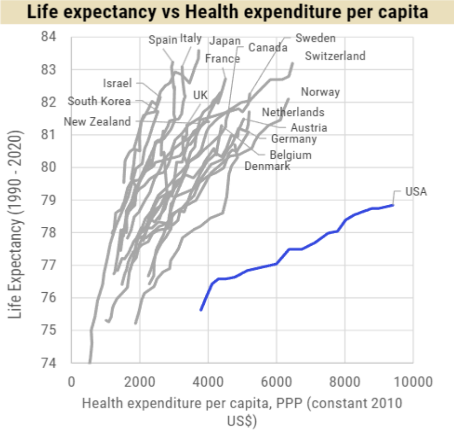
Theme 10: Healthy Life Extension

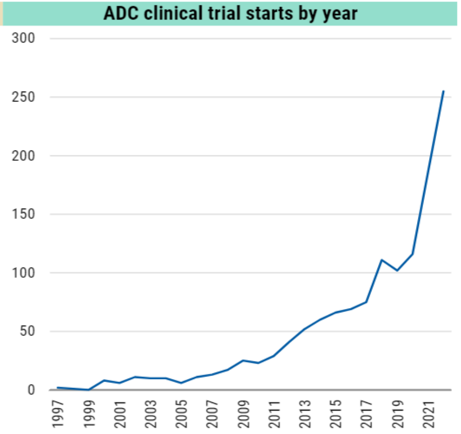
Equity Analysts: Mark Purcell, Terence Flynn, Pamela Kaufman

From GLP-1s in 2023… 2023 saw $600bn of market cap swing between disruptors and disrupted: GLP-1s have been on the market since 2010, but it has taken until 2023 for the theme to come to life. Both macro and micro implications over the long term are profound. The macro impact of obesity is 3.6% of US GDP, with the BMJ estimating $1.24tn in lost productivity. The micro impact YTD has seen a $600bn swing in market cap – a $340bn uplift for the GLP-1 makers and a $258bn loss in value for the perceived disrupted stocks. For context, this compares to a total US drug market of $430bn annually. See report here



Source: AlphaWise, Morgan Stanley Research





Source: Ourworldindata; Beacon ADC by Hanson Wade; Morgan Stanley Research

…to smart chemo in 2024: Targeted Antibody Drug Conjugate (ADC) drugs that home in on cancer like 'biological missiles' could open up a >$140bn market over the long term, off a $5bn base in 2022. This would make ADCs one of the biggest growth areas across Global Biopharma, led by colorectal ($36bn TAM), lung ($29bn TAM) and breast ($18bn TAM) cancers. Key ADC plays are Daiichi Sankyo, AstraZeneca and, increasingly, Merck & Co Inc. Momentum is building: in 4Q23, AbbVie acquired Immunogen for ADCs (c$10bn deal) and Merck Inc did the biggest ADC in-licensing deals (from Daiichi). See report here

Valuation Methodology and Risks

AstraZeneca Plc (AZN.L)
Our price target is derived from a DCF analysis, with product-by-product sales forecasts up to 2036. We assume a WACC of 6.6%, a 12.5% terminal ROCE and 1% terminal growth.
Risks to Upside
(1) Positive pivotal data from the late-stage pipeline, including TROP2; (2) greater management cost discipline; and (3) sales growth acceleration & the impact of legislation is less onerous.
Risks to Downside
(1) Competition to key oncology products Calquence & Lynparza, (2) poor management cost discipline hampering operating margin expansion, and (3) late-stage pipeline failure.

Daiichi Sankyo (4568.T)
¥145/USD assumption. Valued at ¥3200/sh for Enhertu (2030 ww sales of $13.2bn), ¥600/sh for Dato (2030 ww sales of $1.8bn), ¥300/sh for HER3 (2030 ww sales of $1.2bn), ¥150/sh for B7H3 (2030 ww sales of $0.3bn) and ¥750/sh for existing businesses (1.1x P/B assumption, factoring for the growth & competition for Lixiana and Injectafer).
Risks to Upside
- Pipeline success: Enhertu, Dato, HER3, etc
- Next pipeline to emerge: DS-7300 (B7H3-ADC in Ph1), DS-6000 (CDH6-ADC, Ph1), DS-9606 (CLDN6-ADC, Ph1), etc
- Shareholders return: share buyback

Risks to Downside
- Pipeline failure/setback: Enhertu, Dato, HER3, B7H3, etc
- Rising costs: R&D, SG&A, etc
- Currency trend change (strong Yen)

Merck & Co., Inc. (MRK.N)
Our 12-month price target of $116 is based on a 12x P/E multiple applied to our 4Q24-3Q25 EPS estimate of $9.70. This multiple is below MRK’s 10-year average (14x) and the industry (15x) but supported by our outlook for growth.
Risks to Upside
- MRK develops Keytuda co-formulations and extends the tail of the franchise
- MRK's non-oncology pipeline is successful and contributes revenue towards the end of the decade
- ROI positive M&A

Risks to Downside
- MRK's Keytuda life cycle management strategy is unsuccessful
- MRK's non-oncology pipeline is unsuccessful and will not contribute revenue in the outer-years
- Lack of M&A or ROI negative M&A

Latest share prices – AstraZeneca (covered by Mark Purcell) 10,600p; Daiichi Sankyo (covered by Shinichiro Muraoka) ¥3872, Merck & Co Inc (covered by Terence Flynn) $109

Morgan Stanley Equity Research Outlooks

Americas

Strategy & Economics

Global Strategy: Threading the Needle
Global Macro: Land of Confusion
US Economics: Slowing Growth, Easing Policy
US Equity Strategy: The Narrowing Road
Global Economics: The Last Mile
Canada Economics Sailing Into the Wind
LATAM Strategy: Four Sails for Unsettled Seas

Sectors, Themes & Technologies

Internet: 7 Debates to Shape 2024
Internet: Top 10 AI Debates for 2024
Oil & Gas: Tailwinds For Most, But Not All
Semiconductors: Cyclical Bottom in Sight
US Banks: Warming Up
Clean Tech: Picking Up the Pieces
Medical Technology: Moving Past GLP-1s
Energy: Cash Comes Cheap
US Healthcare: The Environment Continues

Europe

Strategy & Economics

Financials Earnings resilience to pay off
European Economics: Structurally Slow
UK Economics: Looking for the Exit
CEEMEA Economics: One Way or Another
South Africa: What's in store for 2024?
2024 European Credit Outlook: Tiering Up
Global EM Strategist: Nine Surprises for 2024

Sectors, Themes & Technologies

Autos: Definitely maybe
Gas Manual: Deja Vu All Over Again?
Clean Hydrogen –Fundamentals Uncertain
Utilities: Better Set-up Ahead For 2024
Diversified Financials: Adding Risk Selectively

Asia

Strategy & Economics

China Equity Strategy: Tapping Uncharted Waters
China: What's Next in 2024
China Economics: A Bumpy Road to Reflation
Technology: Building the 2024 Outlook
Steel – Spreads to remain range-bound
Taiwan Economics
Korea: Aiming for Above Potential Growth
Hong Kong: Navigating Challenges
Singapore Strategy: High Yield | Low Risk
India Equity Strategy: A Year of Volatility
India Economics: Steady Expansion
Japan Economics: Great Escape

Sectors, Themes & Technologies

China Property: Slow Market Recovery
China Internet: Another Year of Alpha
China Property: SOEs Continue to Shine
S. Korea Telecoms: Looking out to calmer waters

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Disclosure Section (Cont.)

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(as of December 31, 2023)

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	Coverage Universe		Investment Banking Clients (IBC)			Other Material Investment Services Clients (MISC)	
Stock Rating Category	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1346	37%	266	41%	20%	605	39%
Equal-weight/Hold	1668	46%	317	49%	19%	717	46%
Not-Rated/Hold	3	0%	0	0%	0%	1	0%
Underweight/Sell	598	17%	61	9%	10%	224	14%
Total	3,615		644			1547	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

Disclosure Section (Cont.)

Analyst Stock Ratings

Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

Analyst Industry Views

Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

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Benchmarks for each region are as follows: North America – S&P 500; Latin America – relevant MSCI country index or MSCI Latin America Index; Europe – MSCI Europe; Japan – TOPIX; Asia – relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Stock Price, Price Target and Rating History (See Rating Definitions)

Disclosure Section (Cont.)

AstraZeneca Plc (AZN.L) - As of 1/1/24 in GBp
Industry : Pharmaceuticals

Stock Rating History: 1/1/19 : E/I; 12/7/20 : O/I; 12/12/20 : NA/I; 8/9/21 : O/I; 9/7/22 : E/I; 4/11/23 : O/I

Price Target History: 12/14/18 : 6400; 5/7/19 : 6500; 8/7/19 : 7400; 1/6/20 : 8100; 1/27/20 : 8250; 4/14/20 : 8600; 5/5/20 : 8630; 5/29/20 : 9000; 11/23/20 : 9400; 12/7/20 : 9900; 12/12/20 : NA; 8/9/21 : 9800; 9/17/21 : 10000; 12/15/21 : 10200; 4/21/22 : 11100; 7/20/22 : 11500; 8/4/22 : 12000; 1/6/23 : 12500; 2/17/23 : 12800; 4/11/23 : 13200; 7/13/23 : 12600; 8/7/23 : 12700; 9/25/23 : 12900

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target -- No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) —
Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Daiichi Sankyo (4568.T) - As of 1/1/24 in JPY
Industry : Pharmaceuticals

Stock Rating History: 1/1/19 : E/I; 3/30/19 : O/I

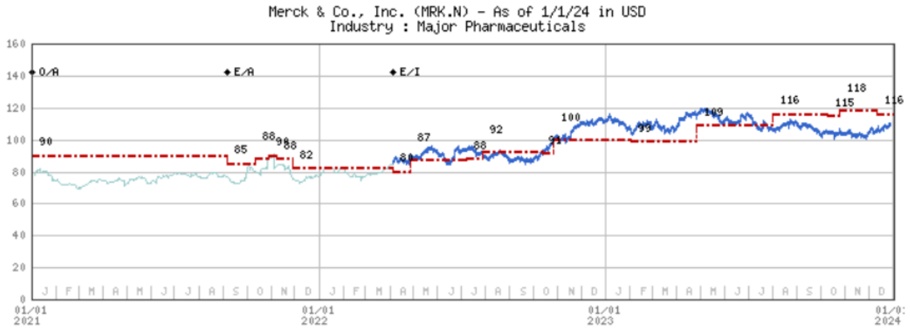
Price Target History: 11/21/18 : 1366.67; 2/26/19 : 1433.33; 3/30/19 : 2033.33; 6/5/19 : 2283.33; 7/31/19 : 2450; 8/16/19 : 2666.66; 1/31/20 : 2883.33; 4/9/20 : 3116.66; 6/8/20 : 3500; 7/31/20 : 3566.66; 10/5/20 : 3600; 10/30/20 : 3300; 11/26/20 : 4000; 1/29/21 : 4100; 7/31/21 : 3700; 10/29/21 : 3900; 5/9/22 : 4500; 8/23/22 : 5300; 10/27/22 : 6000; 2/1/23 : 5800; 5/8/23 : 5700; 7/12/23 : 5200; 8/9/23 : 5400; 12/26/23 : 5000

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target -- No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) —
Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Disclosure Section (Cont.)



Stock Rating History: 1/1/19 : O/I; 12/18/19 : O/A; 9/7/21 : E/A; 4/6/22 : E/I

Price Target History: 12/20/18 : 81; 4/30/19 : 84; 6/21/19 : 90; 11/13/19 : 95; 12/18/19 : 101; 2/6/20 : 97; 4/2/20 : 89; 12/21/20 : 90; 9/7/21 : 85; 10/12/21 : 88; 10/29/21 : 90; 11/8/21 : 88; 11/29/21 : 82; 4/6/22 : 80; 4/28/22 : 87; 7/8/22 : 88; 7/28/22 : 92; 10/12/22 : 91; 10/27/22 : 100; 2/2/23 : 99; 4/27/23 : 109; 8/1/23 : 116; 10/10/23 : 115; 10/26/23 : 118; 12/12/23 : 116

Source: Morgan Stanley Research   Date Format : MM/DD/YY   Price Target   No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst)   Stock Price (Covered by Current Analyst)
Stock and Industry Ratings (abbreviations below) appear as ◆ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

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Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

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