

# The Disruptive Strategist

## Q4 2022

Marketing material for professional, institutional and accredited investors.  
Capital at risk.

### Executive Summary

In our Q4 2022 newsletter, members of GAM Investments' Global Equities team discuss topics including what a difficult year 2022 was for high growth investing, the rise and fall of Tesla, ChatGPT-3 and the acceleration of artificial intelligence (AI), valuations versus fundamentals in true disruptors, the prospects for China in 2023 and some thoughts and observations from a field trip to Japan.

Mark Hawtin reviews 2022 and highlights the difficult market conditions and surging inflation levels.

Mark also looks at Tesla, describing it as a possible example of 'The Icarus Paradox'.

David Goodman discusses some of the attributes and applications of AI chatbot ChatGPT-3, and how AI could disrupt industry over the next decade.

Pieran Maru takes a detailed look at true disruptors in the shape of Software as a Service (SaaS) companies and how much devaluations have been related to fundamentals.

Wendy Chen recaps the Chinese equity market's comeback in 2022 and what 2023 could hold, with a focus on China's post-Covid reopening.

Finally, Kevin Kruczynski updates on technological developments in Japan following a recent trip there.

### 2022 Summary performance

#### Mark Hawtin

2022 was a brutal year for high growth investing with the MSCI World Growth index falling 30%, its worst year since 2008. It was a reset year in proportion to both the Great Financial Crisis (GFC) and also any of the individual years that made up the 2000-2002 downturn, although the Nasdaq 100 fell 75% over the cumulative 2000-2002 period. Within the broader growth arena, the higher the growth the bigger the fall. Examples of this include the Goldman Sachs most expensive software basket down 56.8% in 2022 or the ARK Innovation Fund, down 62.1%. Some hyped new investment areas suffered even more; the De-SPAC index fell 72.9% and the Bitwise Crypto 10 index fell 89.2%. All in all, it was impossible to avoid significant pullbacks in the growth world.

Difficult market conditions were not reserved for growth investors though. The bond markets delivered their worst return in modern history and the famed 60:40 strategy recorded one of its worst drops ever. Inflation soared to levels unimagined at the start of the year and the central bank responses around the world were swifter and sharper than ever seen previously. As the year progressed, new factors and increasing uncertainty delivered a nasty combination for growth investing. Growth equities were shunned regardless of price and at the same time, incumbent technology businesses in many cases fared much better representing the dash to safety and value. While names like Applovin (-88.8%), Asana (-81.5%), Twilio (-81.4%) and Ringcentral (-81.1%) led down the high growth cohort, IBM and HPE were both up marginally for the year. This is an unenviable backdrop for disruptive growth investing!

### Management team



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In analysing the performance in such a difficult year, it is important to try to disaggregate an implosion in valuation versus a degradation of fundamentals. This is the first global slow down where mega cap disruptive names are at a level of maturity that would allow them to exhibit cyclical impact. The last downturn in 2008/09 saw the iPhone and smartphones in general just recently launched and so early-stage growth drove these businesses through the economic headwinds. Similarly, digital advertising was just beginning and even online retail was relatively nascent. As a result, companies exposed to these trends did not see any impact from the downturn. This time is very different.

Among the biggest names, and between the end of 2020 and the end of 2022, Amazon has seen revenue expectations cut by 14% and Meta by 7%, while Microsoft, Apple and Google have all seen expectations rise in that period. However, all these names have seen cuts compared to the end of 2021, so momentum has turned clearly negative and shows that mega cap is generally now economically sensitive, something we have been suggesting for some time.

At the earnings level, cuts have in some cases been very meaningful. Amazon, for example, as a Covid beneficiary and a clear consumer spending exposed name, has seen an EPS cut of 42% for 2023 between the end of 2020 and the end of 2022. Elsewhere, it would appear that analysts had raised expectations sharply into the end of 2021 only to cut these back sharply during 2022 to end up at 2023 expected levels in place at the end of 2020. The point is that many of these companies are still growing but momentum has turned negative and that has impacted share prices.

We have always contended that the most successful disruptive companies will grow through a downturn and that growth company share prices react negatively to shocks (inflation and interest rates), first and fastest but that over time fundamentals re-assert. Top line growth for the biggest six companies in the world today has fallen to just 5% expected for 2023 while those that are more disruptive like ServiceNow have not seen the impact, with estimates remaining at around 25% revenue growth rate for 2023.

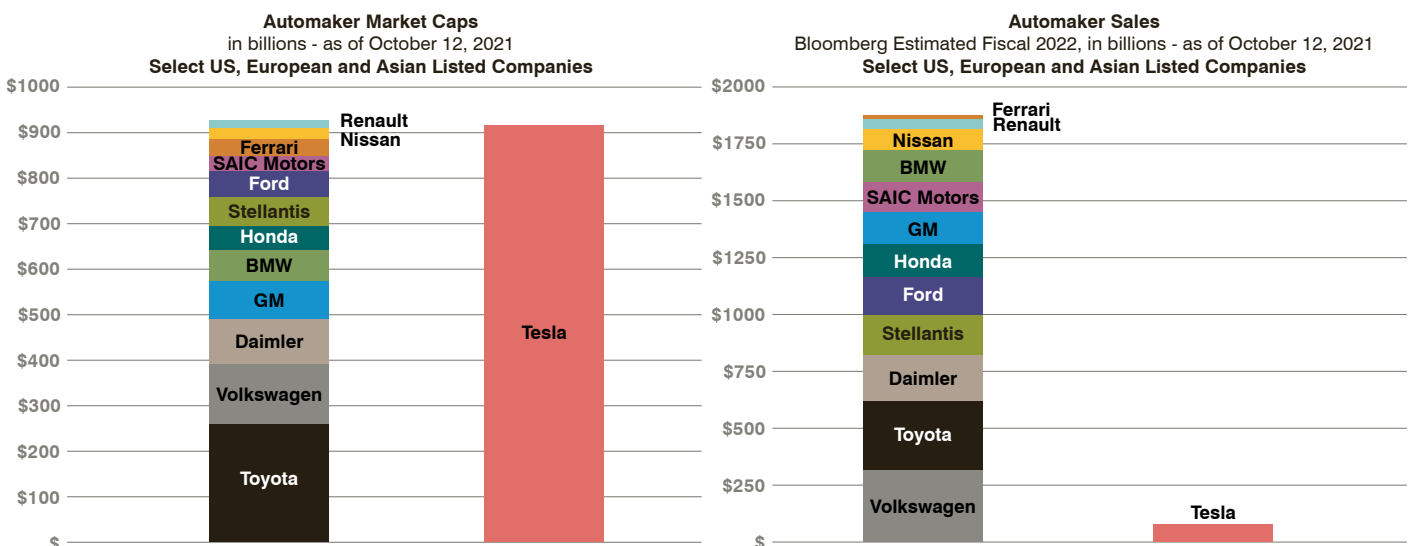
### Tesla - the Icarus Paradox

Mark Hawtin

The Icarus paradox, posited by Danny Miller in his 1990 book by the same name, refers to the phenomenon of businesses failing abruptly after a period of apparent success, where this failure is brought about by the very elements that led to their initial success. Tesla fits this well as its wings begin to melt after apparently having no bounds in stretching for the sun!

The size of the success, if measured by Tesla's market value, can be seen below. These charts were produced by Albert Bridge in October 2021 showing the extraordinary value ascribed to the Company compared to its competitors at the peak of inflated expectations (Gartner Hype Cycle!) while at the same time showing revenue comparisons.

Figure 1: Extraordinary value ascribed to Tesla versus competitors

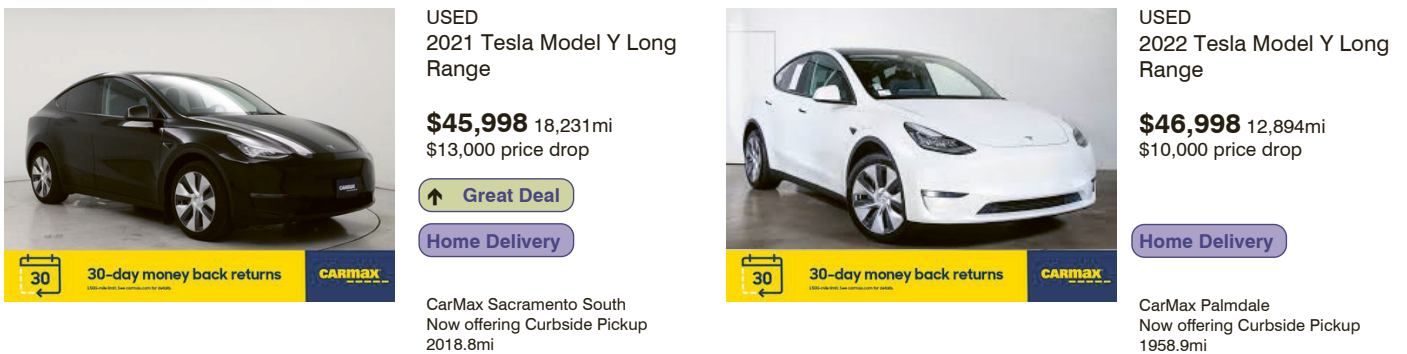


Source: Albert Bridge, October 2021

To be clear, we do not believe that the rapid return to Earth for the share price that accelerated in December (-37.5%) is really attributable to Elon Musk’s tussle with Twitter, his sale of Tesla stock or his often disruptive public profile. In fact, we would argue that the share price fall would have happened regardless. Musk is clearly a genius; almost no one has successfully disrupted so many traditional industries at speed and in parallel. However, his aura had allowed the investing masses to ascribe a far greater premium to Tesla than was deserved on fundamentals. Too many drank the cool aid led by ARK’s Cathy Wood with their price target of USD 1150 or a market value of USD 3.5 trillion by 2026 (the market value at the end of 2022 had fallen to USD 378 billion from USD 1.3 trillion at the peak in late 2021).

In addition to the share price escalation that started in earnest in late 2019, the aura around the company created other success factors that are now proving potentially harmful to the short-term prospects of Tesla. In particular, the Model 3 and Model Y were so popular that they often topped new vehicle stats in many countries. Long lead times for delivery and tiny deposits (USD 100-200) led to a strong second-hand market in trading and flipping these cars. In general, Teslas became known for holding their second-hand values particularly well. This generated a number of false signals about the true state of demand for what was hardly a cheap electric vehicle (EV). It was possible to lease a Model 3 in late 2019 for around USD 390/month<sup>1</sup>. The two key factors for monthly lease costs are interest rates and residual values. Both factors have swung heavily against Tesla in the last six months. The average price of a used Tesla has, according to Edmunds Research, fallen by 17% in the second half of 2022 compared to a -4% average for all cars<sup>2</sup>. Together with the sharp rise in interest rates, monthly lease costs have more than doubled for a Model 3 to above USD 900 today. In a world where rates generally are squeezing family incomes, the spectre of USD 900/month for a Tesla is more than offputting. It is no surprise that (again according to Edmunds) one third of used Teslas for sale at the end of 2022 were 2022 registrations compared to 5% across all car brands<sup>2</sup>. The success of the model pre-downturn ensured that high second-hand values made ownership of an iconic brand an easy choice. That success has built up a significant demand that has now burst with the collapse in second hand values. The Icarus Paradox in full swing.

Figure 2: Tesla fire sale at used vehicle retailer Carmax



Source: www.carmax.com

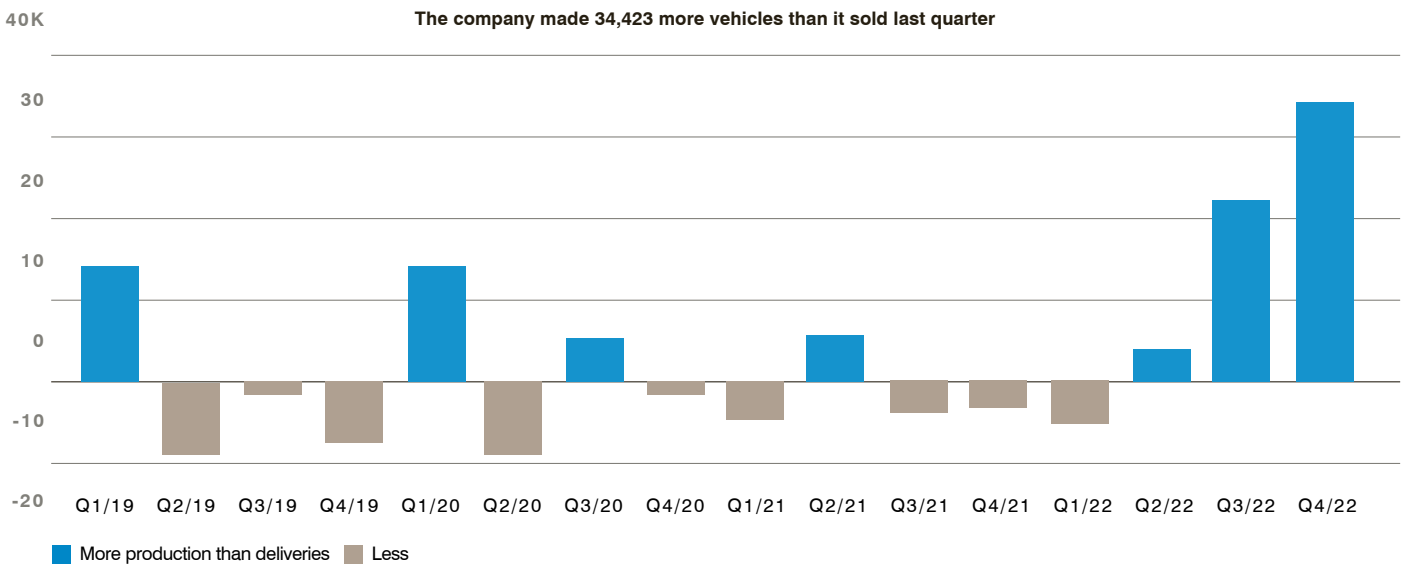
What happens next?

The super strong demand for its cars has led Tesla to ramp up production at new factory facilities in Shanghai, Berlin and Texas just as demand starts to implode. Bloomberg produced the chart below that shows the last three quarters have all seen more cars produced than delivered. Inventory is building and customers are evaporating.

<sup>1</sup>Source: Tesla

<sup>2</sup>Source: www.edmunds.com

**Figure 3: Tesla’s production outpaces deliveries**



Source: Bloomberg

This creates an unenviable position for the company. It is essentially left with the choice of slashing prices to stimulate demand with the obvious gross margin impact or to suffer a significant demand shortfall. Tesla announced price cuts in China and the US heading into the 2022 year end.

Analysts continue to forecast significant growth over the next couple of years for the company. Revenues for 2025 are, on consensus numbers, expected to be USD 145 billion, up from USD 80 billion in 2022<sup>3</sup>. It implies an increase in market share from approximately 21% in 2022 to 23% in 2025. Given the significant lease price headwind and the rising competitive backdrop, this seems a very tall order both on the absolute revenue front and also the market share.

Tesla still trades on a significant premium to other car brands on the basis of best-in-class growth and gross margin. Both these metrics may well experience significant pressures in the next two years. We do not think the premium is warranted – Tesla is not the Apple of cars as posited by a number of analysts. Apple holds a 55% share of the smartphone market in the US; the biggest car manufacturer holds just 10% and that manufacturer is Toyota<sup>4</sup>. The network effect that binds so many to the Apple ecosystem just does not exist with Tesla; granted it has the network benefits of a huge database of EV miles driven but that is not enough on its own. It seems to us that first mover advantage is really the only true benefit that Tesla had. Its market share is declining rapidly as competition ramps up. According to S&P Global Mobility, its market share in North American EVs has fallen from 80% in 2020 to 64% in 2022, with a forecast 20% in 2025<sup>5</sup>. Will we look back in five to 10 years from now and see Tesla not as the Apple of the car industry but perhaps the Nokia, Ericsson or even BlackBerry, the first mover beneficiary but not the final dominant winner?

<sup>3</sup>Source: Tesla (Passenger Cars) - Global | Statista Market Forecast

<sup>4</sup>Source: Automobile market share worldwide: key brands 2021 | Statista

<sup>5</sup>Source: Automotive Research and Analysis | S&P Global (spglobal.com)

## The release of ChatGPT-3 highlights the acceleration of AI

David Goodman

### What is happening?

The recent release of AI chatbot “ChatGPT-3” has taken the internet by storm. A free service, released by OpenAI. We recommend you take a look for yourself and peer into the future: <https://chat.openai.com/chat>.

### What is Open AI?

OpenAI was founded in 2015 by a group of entrepreneurs and researchers, including Elon Musk and Sam Altman. It is based in San Francisco and conducts artificial intelligence (AI) research. Microsoft has a USD 1 billion investment in the company, which has the goal of advancing the field of AI in a responsible way.

### What is ChatGPT and why all the fuss?

A powerful AI tool, ChatGPT generates human-like text responses to user input in real-time. In contrast to previously available AI tools, the big leap forward is ChatGPT’s genuinely life-like response to inquiries, making it almost impossible for users to tell that they are dealing with AI. Given many people’s preference for dealing with humans over automation, this aspect will be a game changer. ChatGPT offers users a truly remarkable experience and is just the start of a huge wave of AI applications that we expect to hit the market soon, bringing rapid disruption.

### How it works and practical applications

Unlike Google Search – to which it is often compared – ChatGPT is primarily used for tasks that involve generating or processing human-like text, as opposed to finding information on specific topics. At this stage, it is not generally regarded as a replacement for Google Search, but the jury is out (we cover this in more detail below).

By analysing user inputs and using its large dataset of language patterns, ChatGPT can generate appropriate responses and can converse with users within a wide range of applications.

The specifics of its use include:

- Machine translation – translating from one language to another
- Summarisation – generating summaries of long documents
- Dialogue – producing suitable responses to user input
- Content creation – generating descriptions of products or articles

ChatGPT’s ability to produce natural, human-like responses is likely to be particularly useful for customer service applications, allowing chatbots to handle diverse inquiries and complaints more efficiently than humans. It can also be used for virtual assistants, where it can help users with tasks such as scheduling, finding information and answering questions.

### Initial impact since launch

Within five days of its unveiling on 1 December 2022, ChatGPT had more than one million users. Users were highly enthusiastic on social media, sharing examples of ChatGPT’s capabilities - from fixing code, writing essays, generating poems, to translating text and summarising long documents and articles. It has been a resounding success so far. Arguably one of the most astonishing aspects of this tool is how the answers are presented in a coherent, easily digestible format, which is not the case with traditional search engines.

### Will ChatGPT disrupt Google Search?

It is unlikely that tools such as ChatGPT will replace search engines as we know them, in our view. Search engines are a very effective way of finding specific information on the internet and are not expected to be replaced by chatbots in the near future. However, in a scenario that is perhaps more evolution than revolution, we do anticipate that chatbot technology and search engines will become integrated.

Morgan Stanley technology analyst, Brian Nowak, points out that as a rule of thumb, when a new technology comes along, one should apply the “10x rule”. For ChatGPT to displace Google search and win over its four billion daily users, the new offering must be 10 times better. He remains unconvinced that learning about topics (ChatGPT) and search for specific items or specific topics are the same use case. In addition, while the street is talking a lot about AI and ChatGPT at the moment, the fact is Google has been investing in leading machine learning and AI technologies for over five years - so we are likely to see equally, if not more, impressive tools from Google in the near future.

### Chat GPT-3 is just one example of AI. How will AI disrupt industry over the next decade?

AI technologies are transforming the way we do business and have the power to shake up traditional business models in a major way. Forward thinking companies are already using chatbots and AI to disrupt incumbent companies and gain a competitive edge. For example:

- In the e-commerce world, Amazon and Alibaba are using chatbots and AI to personalise the shopping experience and make recommendations to customers based on their past purchases and browsing history. Traditional retailers will need to compete with the convenience and personalised recommendations offered by these e-commerce giants or risk being left behind.
- In the transportation industry, ride-sharing companies like Uber and Lyft are using AI to optimise routes and improve the efficiency of their services, leaving conventional taxi and car rental businesses to play catch up.
- In the financial services industry, robo advisors such as Betterment and Wealthfront are using chatbots and AI to provide personalised investment advice to customers, disrupting traditional financial institutions that rely on human advisers.
- And in the healthcare industry, telemedicine companies like Teladoc and Amwell are using the technology to provide virtual medical consultations, disrupting established, in-person healthcare models.

These are just a few examples of businesses that are using chatbots and AI to shake up traditional industries, but with these technologies constantly evolving, it is inevitable that more companies will adopt them to keep abreast of the competition. It is becoming clear that the key to business success in the coming decade will be to embrace chatbots and AI. Those businesses slow to adapt are at risk of disruption.

### True disruptors and valuation versus fundamentals

#### Pieran Maru

Software as a Service (SaaS) names in Q4 continued to be pressured by macroeconomic conditions. Several companies highlighted elongated sales cycles, with small to medium business customers impacted more than enterprise. However, how much of the devaluation has been related to fundamentals? The Goldman Sachs US Expensive Basket, which consists of US growth software stocks with the highest enterprise value (EV)/sales multiples in the group was down 56.8% over the course of 2022. The median stock in the basket has become less expensive today at 8.73 EV/sales, while comparing median sales today at 886.74 versus prior (see table below), we can imply EV drove the valuation change. Our core thesis is that truly disruptive names grow through downturns, of which we have seen earnings per share revised up throughout 2022.

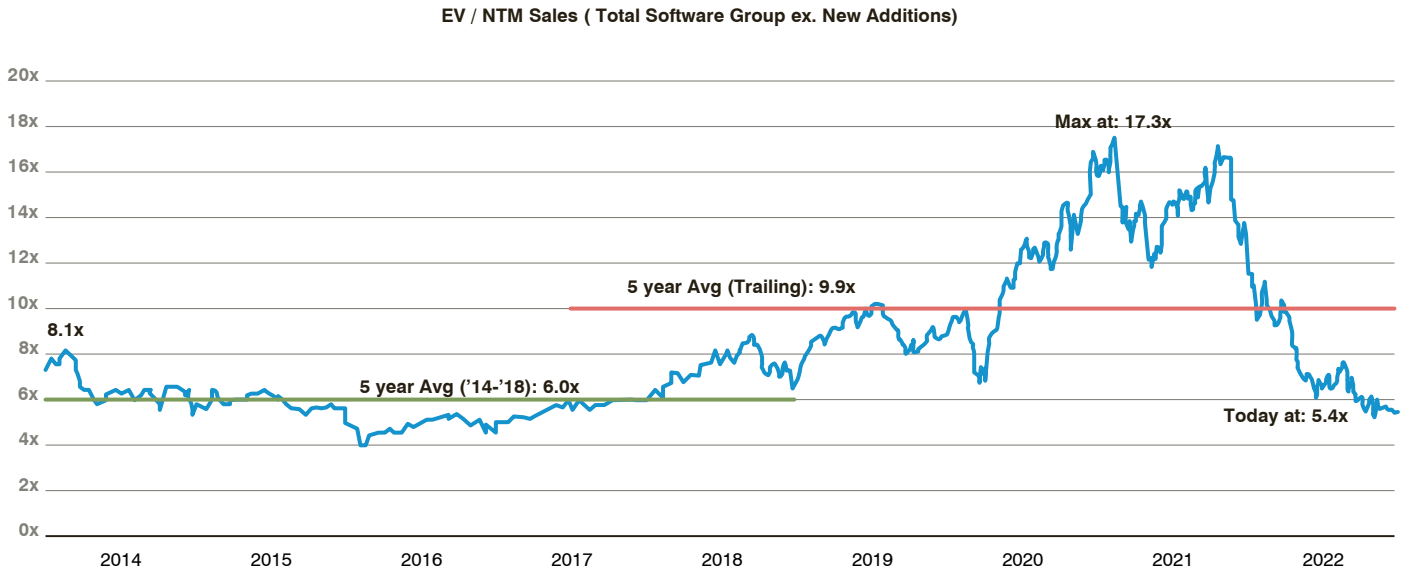
End of Year	EV/Sales Multiple	Median Sales
2020	16.92	132.96
2021	15.73	900.28
2022	8.73	886.74

Source: Goldman Sachs

Figure 4 below from Morgan Stanley aids visualising the enterprise value / next 12 months sales change for the wider total software group. The multiple now stands at 5.4x – currently 46% below the trailing five-year average.



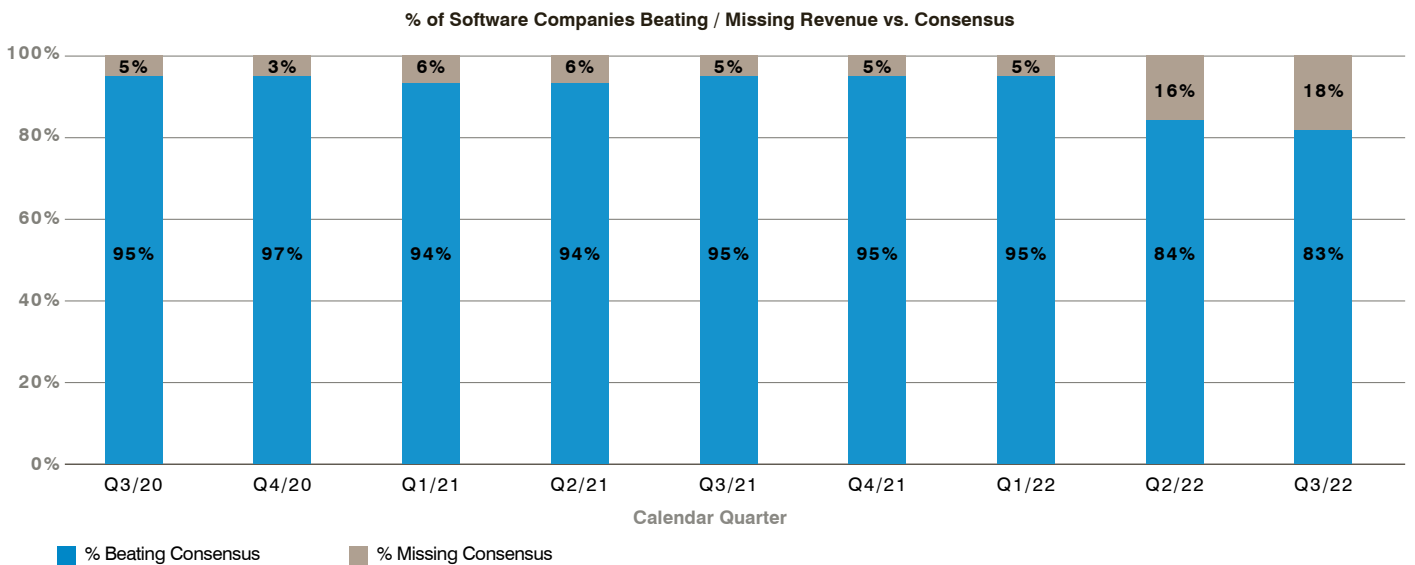
**Figure 4: Overall Software Coverage Group Trading at 46% Below the Trailing 5-Year Average**



Source: Morgan Stanley. Past performance is not an indicator of future performance and current or future trends.

Figure 5 below shows that we are still seeing 83% of software companies beating consensus in earnings, albeit reducing from prior quarters and at smaller magnitude beats with 2.1% in the third quarter of 2022 versus the peak in the dataset of 4.8% in the second quarter of 2021.

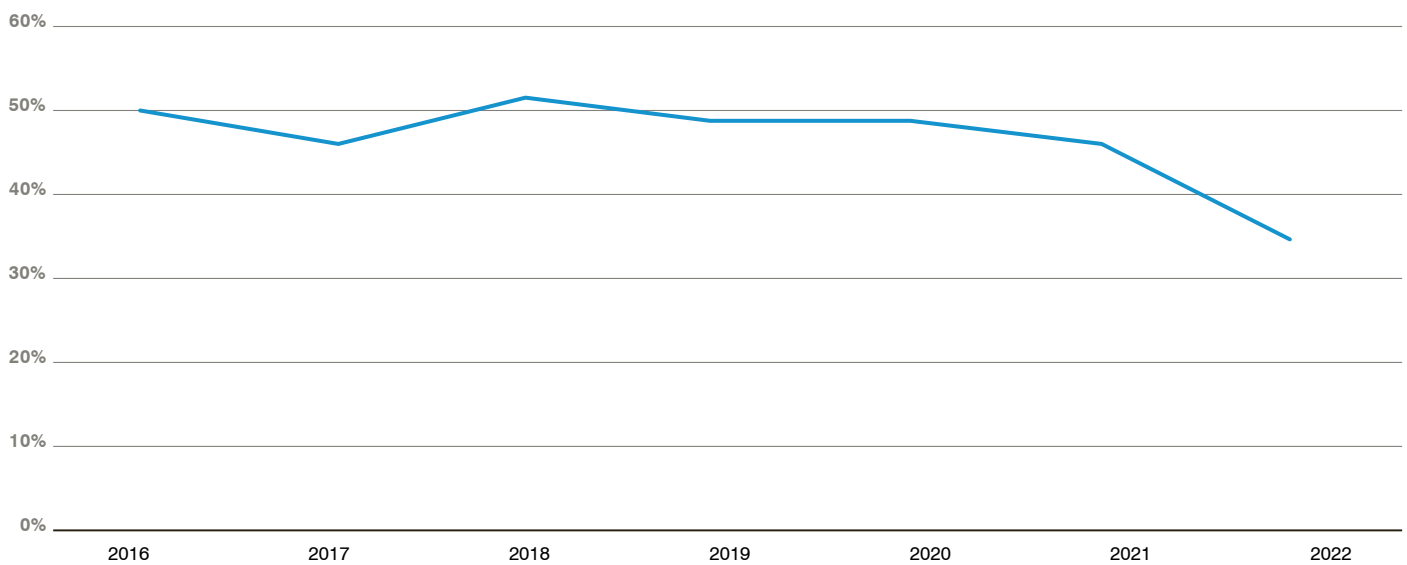
**Figure 5: % of Software Companies Beating / Missing Revenue versus Consensus**



Source: Morgan Stanley Research, VisibleAlpha, company data. Past performance is not an indicator of future performance and current or future trends.

From an operating margin perspective, SaaS businesses have the ability to deliver best-in-class numbers. Of the main costs, high growth names are concentrating on cost of goods sold (COGS), research and development (R&D) and general and administrative (G&A). Larger later-stage SaaS names have also been reducing their workforce by including sales and marketing (S&M) too, with the difference being fewer opportunities for the high growth names to lower headcount as they balance growth and profitability. However, we are beginning to see a more measured approach to S&M hiring for the high growth names, as they start to hit the point where a marginal dollar of S&M spend is less efficient in the level of revenue output. This can be seen by the recent decline in Rule of 40 below.

**Figure 6: Rule of 40 = Revenue Growth + FCF Margin.**



Source: FactSet, Company data, Goldman Sachs Global Investment Research. Past performance is not an indicator of future performance and current or future trends.

With current valuations, software multiples continue to see support at these levels, an example being the M&A activity via private equity. Q4 continued the trend of private equity backed software transactions with 11 large deals announced year-to-date. With one of the largest tech-focused buyout fund raisings occurring in the quarter, we should expect announcements to continue. Targets are likely to continue within the cybersecurity and enterprise resource planning space, with companies having meaningful opportunity for free cash flow (FCF) and operating margin expansion. We could also see relatively higher leveraged deals, given the durability of growth in the software names.

With SaaS names' continued growth and taking a higher disciplined approach to running their respective businesses, fundamentally we are seeing large upside to the companies we believe are disrupters in their space. Chief information officers are expecting IT budgets to continue to grow over the next few years as a percentage of revenue and we see the secular growth trends are still intact.



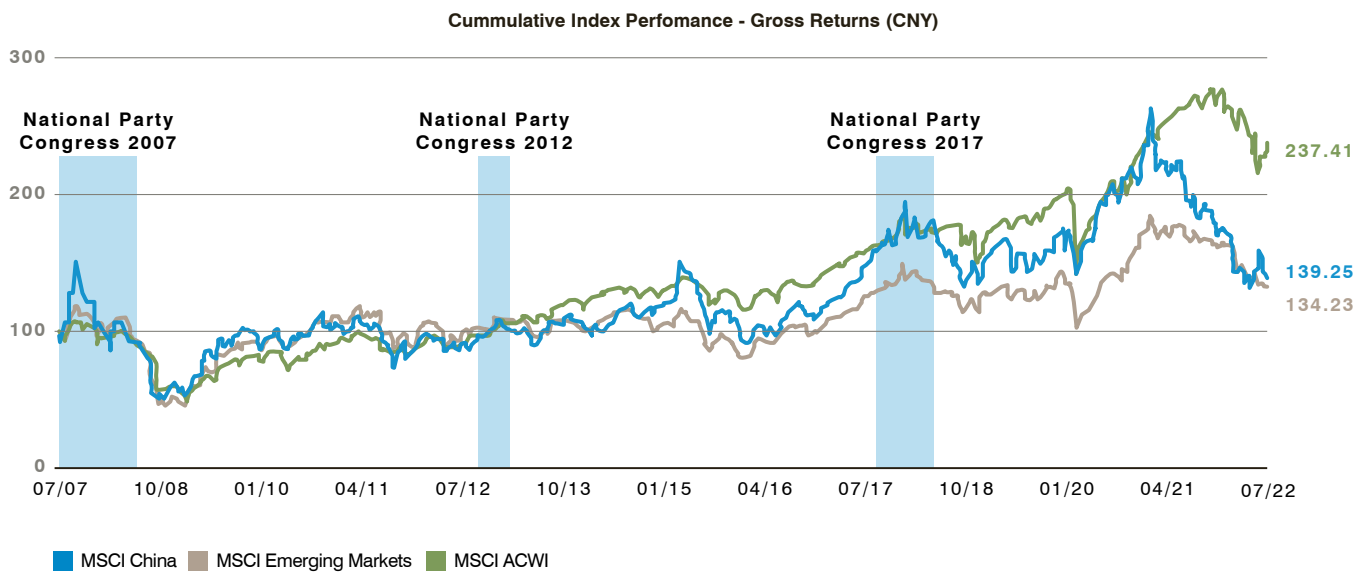
## The great comeback of Chinese equities in 2022

Wendy Chen

The experience of trading Chinese equities in 2022 resembles that of trying extreme sports: while the space saw notable volatility with two all-time-lows (mid-March and late October), followed by robust rebounds, the market headed into 2023 on a high note with an outperformance scorecard for full-year 2022. The MSCI China index and KWEB (a proxy for China internet stocks listed in the US) were down 23% and 17%, respectively, in 2022 while the NASDAQ and ARKK were down 33% and 67%.

2022 started on a muted tone for China following a 22% and 50% dive, respectively, for the MSCI China index and KWEB during the regulation tightening cycle in 2021. Amid mounting concerns about the country's stance amid the Russian-Ukraine war, China indices hit an all-time-low, though this was quickly followed by the highest trading volume and price rebound for one day following the encouraging speech from Vice Premier Liu He. Trading in the second quarter was dominated by reopening excitement as Shanghai stepped out of lockdown in June, though the third quarter saw positive sentiment fade as pandemic restrictions resurged. Negativity peaked at the commencement of the National Party Congress (NPC) in October with another all-time-low for the market. Yet the historic V-shape trading day repeated itself as the market's initial negative reaction towards President Xi's sweeping victory was quickly overtaken by optimism about a policy easing cycle to boost economic growth under the new leadership. This pattern of outperformance also coincided with our historical observation of Chinese equities' relative strength following the Party Congresses.

Figure 7: China equity performance (July 2007-July 2022)



Source: MSCI. Past performance is not an indicator of future performance and current or future trends.

### The fourth quarter marked the inflection point

China surprised the street with an early conclusion of its three-year Covid-zero policy, with a full domestic relaxation of Covid restrictions on 7 December and international travel restrictions dropped from 8 January 2023. Such a drastic U-turn before the end of winter was beyond the market's best expectations, as even the positive consensus predicted an easing of domestic Covid restrictions around April 2023 (following the 2023 National People's Congress) and a broad reopening to the rest of the world expected only in the second half of 2023. In addition, most expected a zig-zag exit out of Covid zero to accommodate vaccination progress and medical resource building, hence such an abrupt reversal raised questions about the foundation of Covid policy decision making. In our view, the successful succession of top leadership paved way for a renewed policy cycle, while the expedited timing was likely boosted by both the sloping macroeconomic reality and unprecedented civil movements.

**Trading China's reopening in 2023**

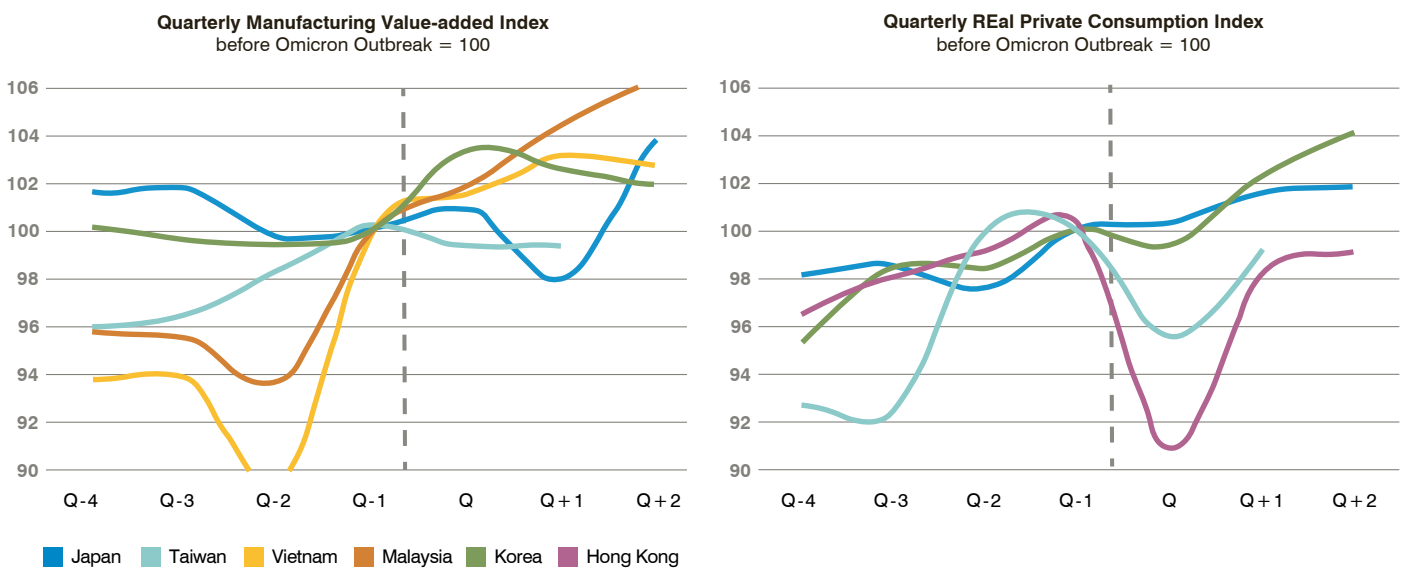
**Initial hiccup from reopening: lessons from Asian neighbours**

Markets welcomed the long-awaited exit from Covid-zero policy, with a robust boost to Chinese equities beginning in early December - the MSCI China index and KWEB index rallied 23% and 43%, respectively, in just over a month. As the Covid-zero and property deleveraging have arguably been the two major hurdles facing the Chinese economy and hampering investability, the one-step removal of Covid restrictions and gradual loosening of property restrictions have no doubt reshuffled investment sentiment into 2023.

Such drastic removal of all Covid-related restrictions amid the winter flu season and less-than-satisfactory vaccination led to mounting Covid cases across the country along with worries about a hospital run. Yet the peaking of Covid infections in China seems to be happening faster than most expected: most major Chinese cities are likely to reach the infection peak by 20 January, before the Chinese New Year season, according to data scientists' models, backtested with Taiwan and Hong Kong data.

Despite the temporal impact on mobility and consumption from rallying infections, we find most investors are looking beyond the fourth quarter with a well-expected weak November and December. Looking at the reopening experience in other Asian countries, recovery from the consumption hiccup caused by surging cases is likely to occur within a quarter's time (see charts below).

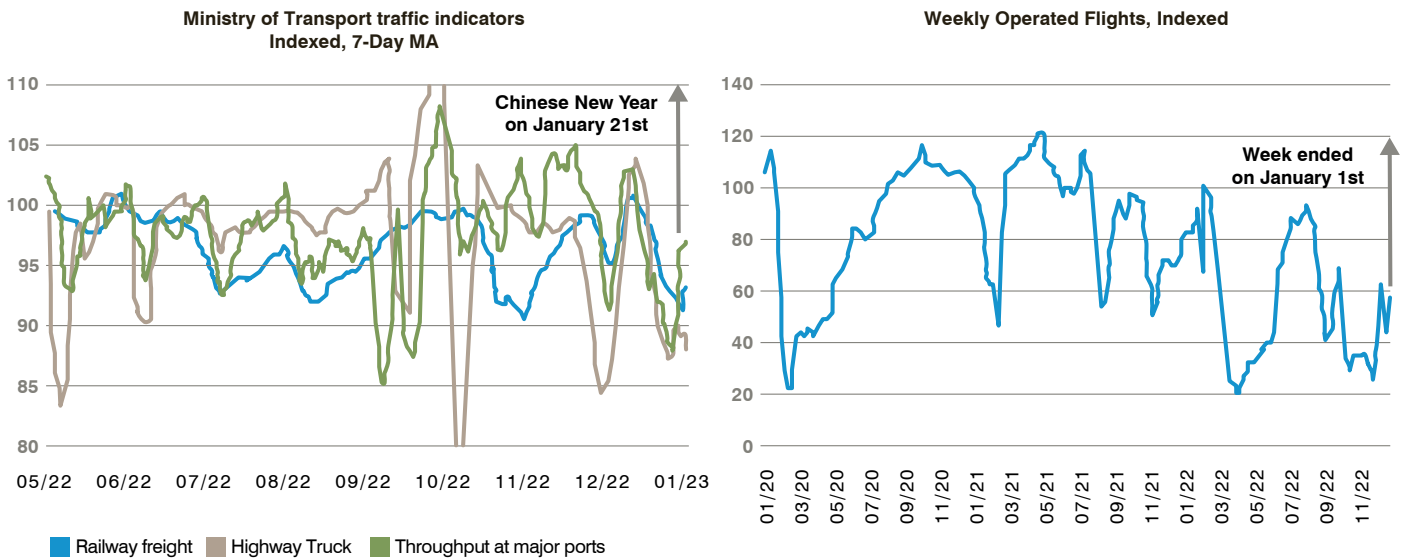
**Figure 8: Reopening experience from Asia peers suggests smooth recovery on supply chains, while recovery from the initial hiccups on consumption amid rising cases is likely to occur within a quarter**



Source: Morgan Stanley

Moreover, the initial impact on supply chains, which is a greater concern for China and global trade, is not particularly visible from Asian neighbours' experience. We expect the reopening to benefit logistics first as the traffic bottleneck is removed, followed by the resumption of the manufacturing industry as workers recover from infection, and then a revival of consumption and tourism as consumer mobility resumes, paired with an earlier kick-off of Chinese New Year promotions in late January. Although surging Covid cases and an earlier 2023 Chinese New Year than usual could affect consumption sentiment in the first quarter, mobility and logistics indices of major cities are rebounding swiftly, indicating a recovery is on track and leading to improved guidance for the second quarter (see charts below).

**Figure 9: Heading into 2023, Chinese mobility started to rebound and is likely to exceed its previous height with the first unrestricted Chinese New Year**



Source: CEIC, Morgan Stanley. Past performance is not an indicator of future performance and current or future trends.

**Return of consumerism: bottom-up driven**

We see this round of consumption recovery upon China reopening to be more organic than stimulus-driven. Arguably, the past three years of mass Covid testing and restrictions on business activities have exhausted room for fiscal policy, which means a lower likelihood of dispatching consumption vouchers, as we witnessed in Hong Kong. While the real estate stimulus policy is gradually being rolled out by central government, the consumption boosting missions are likely to be handled at a local level, with local authorities no longer needing to waste fiscal capacity on meeting Covid related KPIs. The People’s Bank of China may remain accommodative in the early stage of reopening, but is likely to gradually become more mindful of reflation risks.

The return of China’s growth story is likely to keep its interest rates and stock earnings up and support the currency, the RMB. The repair of investor sentiment seems to be underway, with HK and China equities having leaped significantly since early December. The feast is not just for Chinese equities: even before China officially announced its reopening, global stocks that are exposed to Chinese consumers and tourists, namely Hong Kong consumption, Macau gaming, ASEAN tourism and Japan tourism, already saw the trough and rally pattern in November before the Chinese market did, anticipating the boost from one of the world’s largest consumer groups being unleashed after three years of border closure.

## Thoughts and observations from Japan

**Kevin Kruczynski**

Regular readers will be aware that Industry 4.0 is an area of interest for us and given that Japan has long been a major player on the global industrial landscape, it is no surprise that several Japanese companies have emerged as leaders in areas such as automation, machine vision, sensors, and robotics, which feeds directly into this theme. We visited Tokyo in November to meet with companies, consultants, and experts in this field, and attended the Japan International Machine Tool Fair (JIMTOF), a biannual event which is a showcase for new manufacturing technologies.

### Catching up on Digital Change?

Japanese companies have been reluctant to shift from legacy systems, as shown by Japan's lagging cloud penetration numbers, but the tone from many of our meetings suggests that this is starting to change. Management teams are finally embracing digital change, and many mentioned investments in new customer relationship management (CRM), enterprise resource planning (ERP), product lifecycle management (PLM), and computer-aided design (CAD) systems as key elements in helping achieve mid-term profit and efficiency targets. Digital change has also been embraced by the wider population where cashless digital payments have made significant inroads over the last three years. For example, PayPay's QR code payment App was launched at the end of 2018 and now has over 51 million users and is accepted by 3.9 million merchants, an astounding achievement in a famously cash driven economy.

### Energy efficiency

Decarbonisation and environmental considerations are top of mind for most companies, and energy efficiency is a key source of differentiation among product offerings right across the value chain, from suppliers of components such as bearings and valves, to system integrators – all were keen to highlight their environmental credentials, the incremental productivity gains from increased precision and the lower payback periods of switching to more energy efficient products and components in the current energy price environment.

### Deglobalisation is leading to reshoring and changing production patterns

China is still an important manufacturing base, but equipment suppliers are clearly reporting a surge in orders from the US and other countries such as Vietnam and India, suggesting that manufacturers are responding to geopolitical tensions and government incentives by broadening their manufacturing footprints.

### Order books remain elevated, but a slowdown is expected

A combination of short-term supply chain bottlenecks and long-term secular trends have helped fill order books more than usual. Indeed, many companies we spoke to have the highest backlogs in their history. Although most participants expect some degree of slowdown over the next few quarters, as demand for certain underlying products, such as personal electronics and smartphones, continues to weaken. Many companies also acknowledge there has probably been a degree of double ordering. Some suggest this could account for up to 30% of their order books, but even after accounting for this, it still leaves a healthy order book to work through which should provide a cushion during a cyclical pullback.

### Collaborative robots have unlocked new use cases

The automotive and electronics industries have been an early adopters of advanced manufacturing technologies, which were easily placed on well organised and static production lines. With the onset of smaller and cheaper collaborative robots, designed to share workspace with humans, automation has now been embraced by a much wider array of industries such as pharmaceuticals, food processing, and logistics.

### Robots are getting smarter, unlocking more use cases

Improvements in AI, machine vision, and sensor technology are making robots smarter and unlocking further use cases. We saw demonstrations of robots with various combinations of sensors and other hardware attached being able to carry out more sophisticated tasks. We even noticed several examples where legacy non-automated machine tools were operated by a robot. One company estimated that about half of the machine tools sold today in Japan are operated with a robot, compared to about 20% in 2018.

### Industrial Internet of Things fuelling greater data insight and efficiency

Fanuc demonstrated its FIELD system, which is an Internet of Things (IoT) platform that allows users to connect production machines from different manufacturers and generations, enabling data collection and analysis along the entire production process. This helps with predictive maintenance, decreasing equipment downtime and improving operational efficiency. Globally Fanuc now has over 30,000 robots connected and using its Zero Downtime system, which monitors mechanical, process and system health – this equates to 4% of its installed base, so has plenty of room to grow.

### 3D Printing / Additive Manufacturing still not ready for mass production

The range of applications we saw was quite underwhelming and suggests that additive manufacturing is still more suitable for small production runs, rather than part of a mass production system.

We have long thought that smart manufacturing with more efficient, intelligent factories is the future for manufacturing, and we received a comprehensive insight into the component technologies that are making this possible. In contrast to the pessimism in financial markets, the mood from the ground was buoyant. Companies are not oblivious to a decelerating macroeconomic backdrop but feel the impact of a slowdown can be managed. Order books are elevated as labour shortages and high energy prices are driving the need for investment in efficiency. This dynamic coupled with factors such as the switch to electric vehicles, Covid exposed supply chain bottlenecks, and geopolitical tensions which have highlighted the need to rethink and reconfigure global production footprints, have all combined to create a capex cycle that is somewhat detached from normal economically sensitive production trends.

## Outlook

### Mark Hawtin

It feels like something of a broken record as we reach the outlook section of this latest newsletter. Duration equities have been punished hard for their high growth and often loss-making characteristics. This punishment has not abated as valuations seemingly reach cheap and then yet cheaper levels. Much of this can be ascribed to the macro trends in play where uncertainty in the path of inflation and interest rates remained very unclear throughout the year. The sell equity duration trade became a macro call regardless of any fundamentals and so the year ended with many names looking very attractively valued, in our view.

We have a strong conviction that the valuation piece of the jigsaw remains intact and that the correctly chosen disruptive businesses will grow through any downturn or recession. In the section above on disruption – valuation versus fundamentals, it can be seen that, for now at least, eight out of 10 software businesses have received positive earnings revisions. We expect this to remain the case, with companies able to self-manage any softness in short-term demand through cost cutting low hanging fruit after years of easy excess.

The waters are muddied, we believe, by the fortunes of the platform winners: the dominant companies that prevailed and grew during the last 10-15 years. Their sheer size has made them economically sensitive in many cases. The combined sales of Apple, Microsoft, Google, Meta, Amazon and Tesla were USD 1.538 trillion for 2022. At the end of 2021, sales for that group were forecast by the Bloomberg consensus of analysts at USD 1.776 trillion, a rise of 15%. At the end of 2022 that expectation had fallen, leaving revenues expected to grow by just 7% in 2023. For such a large part of the growth universe by market capitalisation, that is significant and highlights the concerns held by investors. Indeed it is quite reasonable to believe that this expectation may fall further. But that misses the point. These are the winners of the last generational shift – the shift to the platform economy. The next 10 years will be about Digital 4.0 – the connectivity of everything and the benefits derived by traditional businesses in healthcare, industrials, transportation and financials; here the most disruptive companies should grow through the downturn, much as Salesforce and Amazon did in the last (2008/09).

Goldman Sachs estimates that entering 2023, S&P earnings will increase by 3% for the full year<sup>6</sup>. That is the lowest level of expectation on record and is half the next worst year, 2009, where expected earnings growth at the start of 2009 was +6%. In short, pessimism runs high and concerns run deep. It remains our contention that we are close to the bottom for duration assets. Exact timing is hard to predict but one potential catalyst may well be a reset event around the Q4 earnings and 2023 guidance cycle running from the end of January through to the end of the first quarter. We remain vigilant and look for any clear signs to take advantage of attractive valuations.

<sup>6</sup>Source: [US Stocks are Forecast to Have Less Pain but No Gain in 2023](https://www.goldmansachs.com/insights/articles/US-Stocks-are-Forecast-to-Have-Less-Pain-but-No-Gain-in-2023) (goldmansachs.com)

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