Market Commentary on the Q2'2023 Results Season:

Navigating Through More Economic Uncertainty

Amidst first encouraging data points on **inflation reaching its peak level in Europe and North America**, the latest PMI survey pointed to **worsening economic conditions in the eurozone** at the start of the third quarter, with a sharper than expected slowdown in services and a steeper decline in manufacturing in July.[i] This is similar to the **US, where employment and wage growth had remained significant drivers of inflation** so far, particularly in the services sector, with wage growth up by 4.4 per cent year-on-year in June (compared with 5 per cent in the eurozone in Q1'2023).[ii] These latest macro-economic developments reignited the debate about central bank rate setting policy enhancing the **risk of a deep recession and further bank distress**.[iii] As the economy needs time to adjust to the seismic shifts in monetary conditions, **businesses will have to refinance at higher rates** and households will feel the full impact of higher borrowing costs once cash reserves built up during the pandemic have been reduced.[iv]

Being half-way through the Q2'2023 reporting season, the **most frequent words used by senior executives** (of those companies we had followed closely in Europe, Asia and the US) to describe the current business environment were **"uncertainty" and "headwinds"**.[v] There is a broad consensus that high inflation and the economic slowdown combined with geopolitical risk have resulted in **more "customer caution"** (David Solomon, CEO of Goldman Sachs),[vi] leading to **lower order intakes, further inventory adjustments** and, in a number of cases, spectacular profit warnings in June and July.[vii] The **sudden slowdown in orders from North America** was frequently noted (Ericsson, Nokia, Richemont),[viii] implying **"changing order patterns" towards shorter lead times** and project business becoming "more bumpy" (Peter Nilsson, CEO of Trelleborg). In turn, the **reopening of China has not resulted in stronger demand** (AkzoNobel, TSMC), although some companies maintain that there will be a recovery in H2'2023 (SGS Group).[ix] Given significant uncertainty, consistently higher costs and customer caution,[x] the **recovery is now projected for 2024**, although the "slope of recovery remains uncertain" (Peter Wennink, CEO of ASML).

With this in mind, we begin our market analysis by taking a top-down view first and look at the evolving **new world order, China's economic reset** and the current investor debate on **energy transition**. This is followed by a **case study on car manufacturers** due to this sector being not only an excellent example of a rapidly changing business model (from hardware to software, from dealerships to direct online sales), but also bearing all the hallmarks for fierce competition in China and energy transition. Whereas ChatGPT was launched in November 2022, **investor enthusiasm about artificial intelligence (AI)** really took off in Q2'2023, following the release of Nvidia's Q1'FY2024 results on 24 May and resulting in another equity bull market by the end of June.[xi] As it is beyond the scope of this study to discuss all the regulatory and ethical implications of AI,[xii] we will focus predominantly on specific investor interest and also look at **cyber security issues**. Finally, with **first signs of M&A recovery**,[xiii] we investigate the current landscape under the fast changing institutional and interest rate environment.

NEW WORLD ORDER

When talking about economic uncertainty, geopolitics and the evolving multi-polar world has become a major focus point for investors - as they have to get to terms with lower returns and higher volatility – and often to make a choice whether to invest in US or Chinese technological and/or economic advantage.[xiv] Russia's military aggression in Ukraine, China's threat of Taiwanese sovereignty as well as growing populism in the Global South have forced Western companies to search for alternative supply chains as well as reliable sources of energy and raw materials, with investors having to "switch their mindset away from simply chasing asset appreciation in a world of easy money".[xv] At the corporate level, Western companies have responded in very different ways, with some even stepping up their investments in China (BASF, Siemens, Volkswagen),[xvi] while others remained more cautious and started to build alternative supply chains elsewhere.[xvii]

In this context, it is worthwhile highlighting a broader debate about the revival of manufacturing in advanced economies – driven by decarbonisation, deglobalisation and remilitarisation – leading to a global race for more near and/or on-shore manufacturing supported by extensive industrial policy, including green subsidies and sweeteners to attract leading-edge technologies and business investments.[xviii] Whereas analysts and investors have frequently enquired about the impact of the US Inflation Reduction Act and Chips and Science Act as well as the EU Green Deal, they have struggled to build this into their models so far while senior management has largely refrained from providing greater detail yet (Intel, TSMC, Holcim).[xix] From an investor's perspective, the other interesting debate is the changing (multi-polar) currency world,[xx] with the US dollar still dominating the global debt market but trade invoicing increasingly done in euro and renminbi, the latter partly as a result of Russia trying to evade sanctions but also other countries in the Global South seeking alternatives including digital currencies.[xxi]

CHINA'S ECONOMIC RESET

Since the full re-opening of the Chinese market (post-Covid restrictions) in February 2023, hopes for a fast economic recovery have disappointed investors and Western senior executives alike,[xxii] as not only a lower GDP growth target of 5 per cent per annum has been set but also no other major stimulus package has been announced.[xxiii] While there has been much debate about the reason for this more modest policy response, pointing not only to the limitations of the previous debt-laden growth model but also to structural issues such as a high consumer debt burden, urban youth unemployment and lower productivity growth given the demographic decline,[xxiv] the implications for Western companies selling their products and services in China are clear as this will be more of a "spontaneous (and not stimulus-driven)" recovery,[xxv] with the biggest impact on services and consumption (and less on investment).[xxvi]

In terms of asset managers' portfolios, geopolitical tension and sub-par growth in China have reportedly led to more client demand for Asian investment products that exclude China – similar to previous "Asia ex-Japan" portfolios three decades ago – to tap into the region's growth while concentrating exposure in countries with strong ties to the US.[xxvii] While this may be a fairly controversial investment strategy, there is also recognition that investors can get more exposure to China through other markets like Australia, Japan and South Korea. While there is still much speculation about a potential rebound of the Chinese equity market, with some investors pinning their hopes on another stimulus package,[xxviii] evidence on the ground shows that the "ecosystems between the Western and Eastern world are separating" (Oliver Blume, CEO of Volkswagen).[xxix]

ENERGY TRANSITION

As we have frequently written on the evolving investor debate about energy transition before, the last few months have not only added new insights, but also sharpened the investor focus on the costs and timing of the energy transition as well as the returns of renewables compared with fossil fuel. The fact that major energy companies such as Shell and bp have extended their investment programmes for oil and gas has not only been met with consternation by climate activists, policy makers and ESG-focused investors alike,[xxx] but also resulted in an unusual alliance of proxy advisors and climate activists at this year's AGM season.[xxxi]

While there is much data-driven improvement in the resources required to reduce CO2 emission,[xxxii] the latest heatwaves, floods and droughts across the world have reminded investors and the wider public about some key challenges: a) whether supply of minerals such as copper and lithium is growing fast enough to meet the rapidly increasing demand; b) new developments for mining, refining and battery production can have adverse local environmental effects; and c) there is a need for more diverse supply chains as China reportedly accounts for 74 per cent of refined lithium, Indonesia for 48 per cent of nickel and the DRC for 70 per cent of cobalt.[xxxiii]

In addition, there remains an active debate about the actual investment returns from renewables compared with traditional oil and gas – best illustrated during the Q2'2023 results season by the latest German offshore wind auction – and whether the higher profits generated after the Russian military invasion of Ukraine should be spent on renewables or shareholder return.[xxxiv]

CASE STUDY: CAR MANUFACTURERS

We have closely followed the global car manufacturing industry since autumn last year, as it not only represents a great example of a fast-changing business model (from hardware to software, from dealerships to direct online sales), but also vividly illustrates some of the general themes on China and the energy transition discussed above. With the race for global market leadership in battery electric vehicles (BEVs) being accelerated both by the entry of new Chinese low-cost manufacturers and Tesla's decision to lower prices in January,[xxxv] there is a wide recognition among corporate decision makers that the early BEV adoption is over and that there is now a need for a mass market including the provision of charging infrastructure (Ola Källenius, CEO of Mercedes Benz Group).[xxxvi]

Fierce competition in China and from Chinese OEMs in Europe – occasionally labelled as the "Chinese invasion of Europe" (Carlos Tavares, CEO of Stellantis)[xxxvii] – has not only led to a major review of Western car manufacturers' market strategy in China[xxxviii] but also, in conjunction with the energy transition, caused a significant revamp of the entire industrial operating system to become less complex, more agile and more cost competitive.[xxxix] As the global car manufacturing industry currently goes through two technological transitions – the e-drive train and the digital interface to customers (Ola Källenius, CEO of Mercedes Benz Group) – the size of the battery and cost competitiveness in terms of weight and energy usage have become crucial,[xl] with some OEMs opting not only for their own battery production, but also sourcing and refining of rare metals .[xli]

In terms of BEV profitability and structurally lower margins, there is much hope for major step ups both from digital/direct sales and software upgrades,[xlii] while the key ambition over the long term remains "solving autonomy" (Tesla), as training the autonomous driving system still poses a "fundamental challenge".[xliii]

ARTIFICIAL INTELLIGENCE

While the success of the launch of ChatGPT in November 2022 may have surprised even its own developers, both in terms of its fast global uptake as well as the massive potential of generative AI,[xliv] the publication of Nvidia's Q1'FY2024 results on 24 May has boosted investor enthusiasm as the scale of demand – "moving fast from lab to industrial application" (Jensen Huang, CEO of Nvidia) - became clear. Applications of these generative AI models are seemingly limitless, ranging from cancer research to legal documents, from gaming to music, and hence the race by big tech companies to not only host and deliver AI services, but also to control all parts of AI's new computing stack, starting from data needed to train AI models at the bottom to large-scale language and vision models as a base level of intelligence and, on the top, applications and services to shape the technology for specific markets and end uses.[xlv]

At the same time, there was an extensive debate about the potential abuse, both among AI pioneers and fund managers,[xlvi] raising concerns about manipulation not only by applying social bias into AI training models but also generating disinformation and other criminal activity.[xlvii] From our perspective, it was interesting to follow various companies over the current results season, with Mercedes Benz Group reporting that they have started a data test for ChatGPT in cars in the US through their Cloud layer,[xlviii] Philips applying AI for patient care, imaging and monitoring,[xlix] and Vodafone even hiring a new CFO from SAP to "focus more strongly on AI"[l] - to provide examples from three very different industries. In the wake of the previous crypto hype, there is still a feeling of unease among investors pouring huge amounts of money into AI start-ups,[li] although the jury is still out whether only big tech companies will win the generative AI race.[lii]

CYBER SECURITY

With the exponentially growing frequency and scale of cyber attacks in recent years, cyber resilience has firmly arrived at executive boardrooms' agenda – not only from a financial risk perspective, but also at a more strategic and operational level including possible supply chain attacks, reputational damage through the usage of customer data and intellectual property theft.[liii] The impact can be huge - from shutdowns of pipelines and electricity networks to derivatives trading and semiconductor supply shortages.[liv] Despite a difficult year for crypto businesses in 2022, crypto transactions to extract ransomware still appear to be mainstream, accounting reportedly for almost half a billion US dollars last year.[lv]

From an investor's perspective, there appear to be two main lines of enquiries: a) to what extent can cyber insurance help to mitigate cyber risk; and b) to what extent can the law enforcement authorities step up the battle against malicious attacks from hostile regimes in Russia, China, Iran and North Korea. As to the former, there is a growing concern that existing cyber insurance policies are falling short of the coverage required, notably when state-backed attacks are involved, following Lloyd's of London's decision to include exemptions in this respect,[lvi] which industry experts consider being an "unviable product".[lvii] As to the latter, we might get sporadic press coverage on Western authorities disrupting Russian and Chinese malware, but the scope of the issue is certainly systemic and has a large scale,[lviii] which makes it difficult to assess risks at individual company level unless the company discloses it itself.[lix] Among these state-backed hackers, some have evolved from ransomware extraction by sending malware-laced emails to more sophisticated methods of targeting flaws in company's software supply chain.[lx]

M&A LANDSCAPE

Following increasing enquiries from analysts and investors about companies' outlook for M&A during the Q2'2023 results season, we have looked at some of the statistics and players involved to draw a new starting line. The global M&A slowdown started in 2022, mainly as a result of sharp interest rate increases following rising inflation and the Russian invasion into Ukraine[lxi]. In turn, continued weak M&A activity in the first half of 2023 was mainly due to high economic uncertainty fueled by the US banking crisis in March and increased financing costs, which made it difficult for buyers and sellers to agree on suitable valuations for targets[lxii].

According to Refinitiv, the first half of 2023 was the "slowest first half-year period for deal making since 2020", with global M&A activity at USD$1.3 trillion (down by 37% year-on-year), albeit still above the pre-pandemic level of 2019. The second quarter of 2023, however, was the strongest in twelve months, with healthcare, energy & power and technology leading the sector mix totaling 42% of overall M&A value, equally split between each sector[lxiii]. Private equity buy-outs at 21% of M&A activity were down from a comparable 26% a year ago. Mega deals (larger than US $10 billion) decreased by 53% year on year, reflecting reduced capacity for buyers to finance larger acquisitions given rising rates, with mid-size transactions showing more resilience[lxiv]. European M&A was down by 49% year on year, followed by US M&A at 40% down. Cross-border M&A has also declined compared to a year ago and had its slowest pace since 2013[lxv].

M&A specialists, however, are more optimistic about H2'2023 due to multiple reasons, which was largely confirmed by those US and European banks we had followed over the last three weeks:

a) Market participants are likely to get more clarity on the direction of the global economy and interest rates;
b) Although the number of sponsor M&A exits has decreased by 46% during H1'2023, given weaker financing and lower valuations, private equity firms are likely to aim for more exits due to fundraising challenges in the past year to date;[lxvi]
c) Portfolio reviews and divestitures will create deal flow, as both companies and private equity firms will proactively review their portfolios due to increased capital constraints.[lxvii]

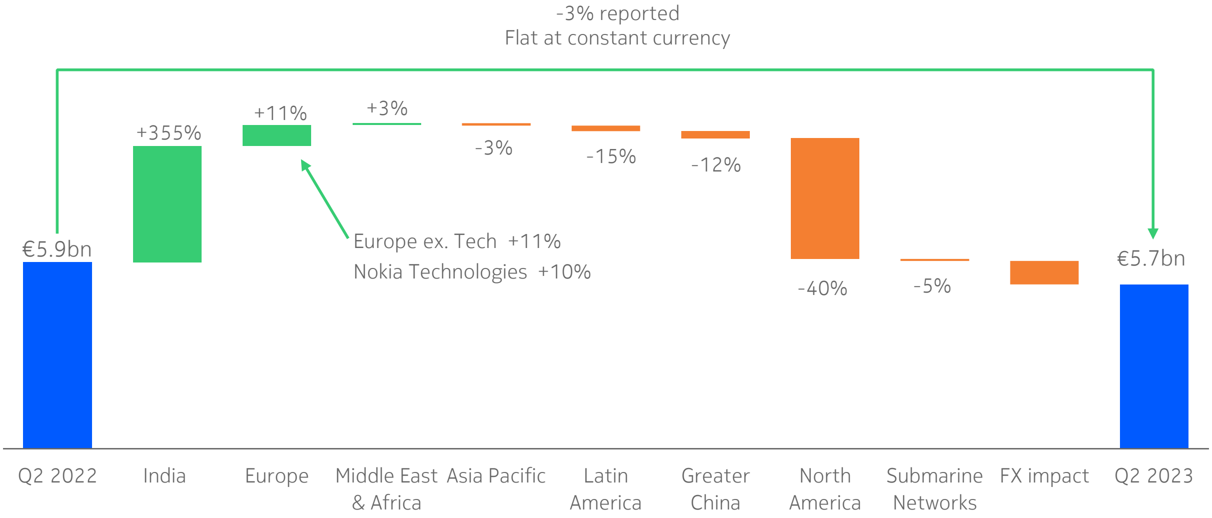
One other strong argument in favour of more M&A – in line with our previous discussion – is the strong AI boom forcing companies to build, partner or buy new technologies and innovations.[lxviii]

Peter and Irina Kirkow
31 July 2023

APPENDIX

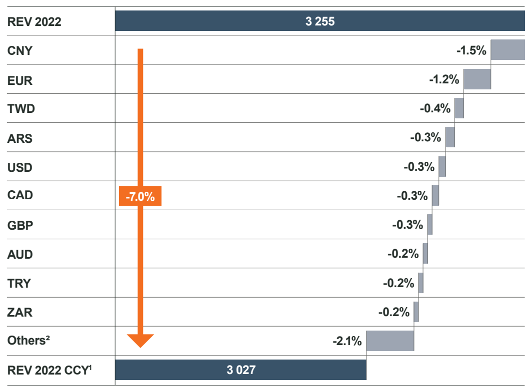
India and Europe strength continue to offset North America

Year-on-year at constant currency

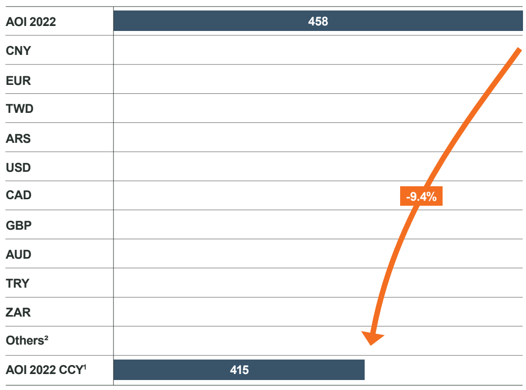


A material H1 FX headwind, especially at AOI

Currency impact on revenue (%)



Currency impact on AOI (%)



1. Constant currency (CCY)*.
2. Others is composed of all other currencies.
* Alternative Performance Measures (APM), refer to the '2023 half year results'.

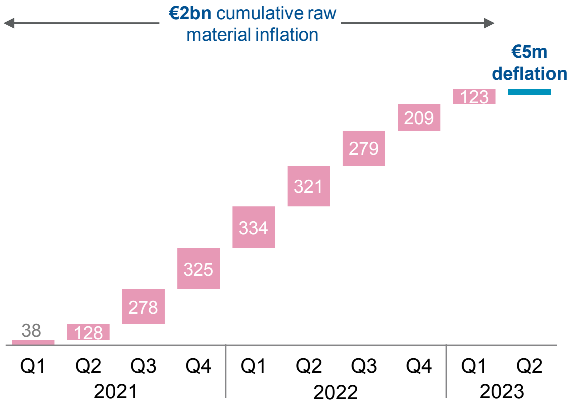
Pricing vs raw materials and freight costs

AkzoNobel

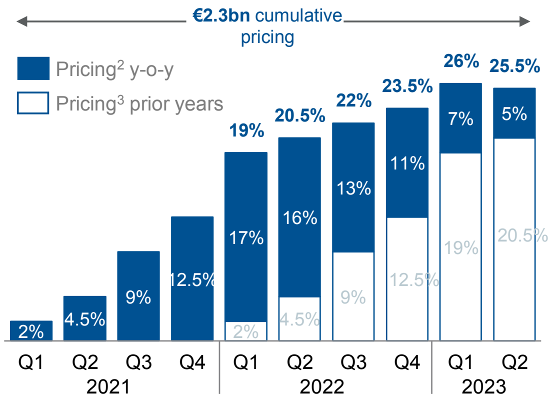
First benefits of raw material deflation at group level

Raw material and freight inflation[1]

Quarterly adj. OPI impact y-o-y, €m



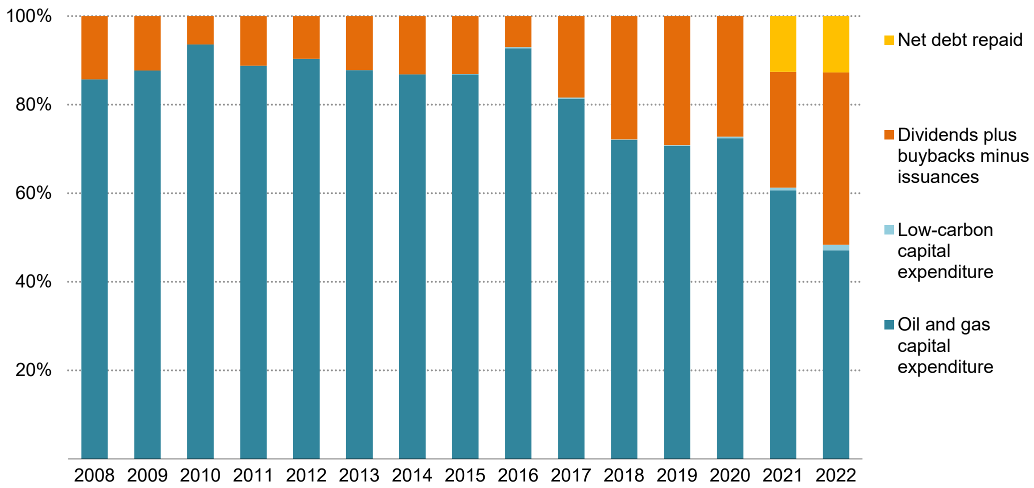
Pricing



1. Raw material and other variable cost euro value includes freight value from Q1 2022 onwards.
2. Price only and excluding mix.
3. Includes two prior years for 2023.

Less than half of the oil and gas industry's unprecedented cash flow from the energy crisis is going back into traditional supply and only a small fraction to clean technologies

Distribution of cash spending by the oil and gas industry, 2008-2022



Source: IEA analysis based on data from S&P Capital IQ.

ENDNOTES

[i] Martin Arnold, *"Eurozone economic downturn deepened in July, business survey indicates"*, Financial Times, 24 July 2023. The PMI Index dropped further below the 50-mark, which separates economic expansion from contraction, falling to 48.9 from 49.9 in the previous month. While the eurozone's services sector remained in growth territory, it still implied a six-months' low of 51.1. In turn, the manufacturing sector declined further to 42.7, with wholesale prices falling sharply and hiring being in contraction for the second month in a row.
[ii] Nicholas Megaw, *"US hiring slows more than expected in June"*, Financial Times, 7 July 2023. Jobs growth in the US had slowed more than expected in June, adding 209,000 new non-farm jobs, which was below the consensus forecast of 225,00, with hiring particularly strong in leisure/hospitality (up by 6% month-on-month), education/health services (3.9%) and construction (3.6%), while only retail services were down by 1.6% compared with May.
[iii] Sheila Bair, *"The Federal Reserve needs to stay put on rates"*, Financial Times, 24 July 2023. There is no doubt that the US Fed's massive rate hikes over the last 15 months, combined with a significant reduction in money supply M2, have helped to reduce inflation meaningfully, with the consumer price index rising to a mere 3 per cent in June (down from a peak of 9.1 per cent in June 2022) and the rate of producer price increases slowing even faster. For a different view on the Fed's decision to skip a further rate hike in June, see: Mohamed El-Erian, *"The framing of the Fed call on rates is too narrow"*, Financial Times, 12 June 2023. It is beyond the scope of this market analysis to go into greater detail of this debate, notably on the risk for smaller banks from the "yield curve inversion" given the Fed's primary focus on raising short-term rates.
[iv] In late July, both the US Federal Reserve and the European Central Bank increased rates by another quarter percentage point each but, at the same time, they signalled - despite conceding that "inflation remained elevated" - that a) they are more positive about being able to avoid a recession; and b) that they might be "not so far away from the destination", implying that further rate hikes should not follow automatically in September. For a discussion of the situation in the US, see: Colby Smith and Kate Duguid, *"Federal Reserve raises US interest rates to highest level in 22 years"*, Financial Times, 27 July 2023, and in Europe, see: Martin Arnold and George Steer, *"ECB raises interest rates back to record high"*, Financial Times, 27 July 2023. While officials from both central banks kept ambiguity about their future rate hiking intentions, there was a large contingent of professional investors who interpreted the latest policy steps as reaching peak level, see: Martin Arnold, "*Central banks leave investors in the dark as they near peak rates"*, Financial Times, 28 July 2023. In this context, one interesting observation was that rising stocks and falling bond yields resulted in looser financial conditions, neutralising the impact of rate rises and supporting a more benign fundraising environment. For some of the arguments from institutional investors, see: Harriet Clarfelt, Kate Duguid and Nicholas Megaw, *"Booming markets neutralise impact of rate rises on US corporate fundraising"*, Financial Times, 28 July 2023.
[v] The CEO of JPMorgan Chase, Jamie Dimon, maintained that "headwinds are substantial" due to the war in the Ukraine, high interest rates and inflation as well as recessionary fears (JPMorgan Chase Q2'2023 analyst call, 14 July 2023) while the CEO of Citigroup, Jane Fraser, stated that the "current environment of uncertainty is the new normal" (Citigroup Q2'2023 analyst call, 14 July 2023). Others, however, observed that "improved market conditions in June shifted client sentiment" (Sheron Yeshaya, CFO of Morgan Stanley, at the Q2'2023 analyst call on 18 July 2023) and that we are "getting close to the end of the rate hiking cycle" (Evie Kostakis, CFO of Julius Baer, at the H1'2023 analyst call on 24 July 2023). For industrial companies, the new CFO of Stellantis, Nathalie Knight, summarised major headwinds for H2'2023 in terms of mix normalisation, cost inflation and production risks (Stellantis H1'2023 analyst call on 26 July 2023). The CEO of TSMC, C.C. Wei, provided a more downbeat outlook for the semiconductor industry by saying that "our macro view is less optimistic, and China has been weaker than expected" (TSMC Q2'2023 analyst call on 20 July 2023).
[vi] In the words of the CEO of TSMC, C.C. Wei, "customers have become more cautious, and they want to take more control of their inventory" (TSMC Q2'2023 analyst call on 20 July 2023). Similarly, the CFO of Philips, Abhjit Bhattacharya, outlined that the comparable order intake had declined by 8% in H1'2023 due to "cautious buying behaviour" and noted that "the order intake remains lumpy for the rest of the year" (Philips Q2'2023 analyst call on 24 July 2023).
[vii] In this respect, the German specialty chemicals industry was probably most indicative, with Lanxess making massive adjustments to its full-year profit guidance in June despite confirming their dividend policy only a month earlier, which followed the profit warnings from Evonik and Covestro earlier in March. While senior management of BASF had been much more outspoken about the limited attractiveness of investing in Europe and announced the downsizing of its operation in Germany back in 2022, Covestro was approached by Abu Dhabi's National Oil Company Adnoc but

reportedly rebuffed the EUR 13 billion offer in June (Arash Massoudi, Ivan Levingston, Patricia Nilsson and Simeon Kerr, *"German chemical group Covestro rejects €13bn Abu Dhabi approach"*, Financial Times, 23 June 2023). For details and the scope of the Lanxess profit warning in June, see: https://lanxess.com/en/Investors/News-and-Events/News/2023/06/19/16/32/LANXESS-Results-for-Q2-and-FY-2023-estimated-below-market-expectations. At the beginning of the Q2'2023 reporting season, Ericsson and Nokia surprised the market on the downside, with Ericsson lowering its FY2023 guidance due to a "slowdown in 5G build-out, notably in North America", "lower capex spend" and "inventory adjustments working through the system" (Börje Ekholm, CEO of Ericsson, at the Q2'2023 analyst call on 14 July 2023). Similarly, Nokia noted that North American customers have re-evaluated their spending plans while currently going through an "inventory digestion", with the company postponing its assumption for recovery to Q4'2023 (Marco Wiren, CFO of Nokia, at the Q2'2023 analyst call on 20 July 2023).

[viii] However, the CEO of Nokia, Pekka Lundmark, believes that the "slowdown in investment in North America is temporary" (Q2'2023 analyst call, 20 July 2023).

[ix] Even with the latest promises for more stimulus from the Communist party's ruling politburo to spur consumer spending, tackle unemployment and support the ailing property sector, senior executives maintain that the "recovery in China has not occurred yet" (Björn Rosengren, CEO of ABB, at the Q2'2023 analyst call on 20 July 2023). In the long term, however, China will be a "sweet spot" due to strategic investments in line with megatrends (Peter Wennink, CEO of ASML, at the Q2'2023 analyst call on 19 July), offering still a "land grab" as major Western companies increasingly compete for market share in second and third-tier cities (Gregoire Poux-Guillaume, CEO of AkzoNobel, at the Q2'2023 analyst call on 25 July 2023). For a more extensive discussion of the meeting of the China politburo on 24 July, see: Joe Leahy, Ryan McMorrow and Sun Yu, *"China politburo vows support for economy but gives few details"*, Financial Times, 24 July 2023.

[x] There was much talk about consistently higher costs this quarter, including raw materials such as steel (Airbus, Boeing) and rare metals (VolvoCars, Mercedes Benz), as well as bottlenecks in logistics (Volkswagen, Palfinger), and what efforts companies made towards more operational efficiency, automation, simplification and capacity utilisation (Tesla, TSMC, Telenor). With limits for further price increases and a normalisation in volumes (Lonza, AkzoNobel), senior management keeps focusing on "things we can control" (Zach Kirkhorn, CFO of Tesla, at the Q2'2023 analyst call on 19 July 2023), notably cost control and working capital management.

[xi] By the end of June, the Nasdaq was up by 38.8% year-to-date, the S&P 500 by 15.9% and the MSCI World index by 14%. In turn, the Chinese Hang Seng index was down by 4.4% over the same period. Nvidia's sales forecasts for the three months ending in July came in more than 50% ahead of market consensus, with shares being up by 25% in pre-market trading after the Q1'FY2024 results release, see: Tim Bradshaw, *"Nvidia races towards $1tn club as AI frenzy drives chip stocks higher"*, Financial Times, 25 May 2023. At Nvidia's Q1'FY2024 analyst call on 24 May 2023, its CEO, Jensen Huang, maintained that we are currently going through two major transitions (generative AI and accelerated computing), with a "steep increase in demand" and generative AI "moving fast from lab to industrial application". In his words, accelerated computing helps to reduce energy costs for data centres significantly, while "data centre architecture, expertise and utilisation have become crucial".

[xii] For a good recent discussion on the interaction of human intelligence with generative AI, see: Anne-Marie Slaughter, *"The rise of AI forces us to reinterpret our human intelligence"*, Financial Times, 24 July 2023. Following the publication of Q2'2023 results by the likes of Microsoft, Alphabet and Meta in late July, it became clear that a race has started not only to incorporate machine learning into their operations but also to make sure that generative AI would not disrupt their own business model, see: Richard Waters, *"Big Tech races to give generative AI a central place"*, Financial Times, 28 July 2023. On earlier relevant academic and business research, see: Stuart Russell, *Human Compatible. Artificial Intelligence and the Problem of Control*, Penguin Random House, New York, 2019; Gary Marcus and Ernest Davis, *Rebooting AI. Building Artificial Intelligence We Can Trust*, Penguin Random House, New York, 2019 and Martin Ford, *Architects of Intelligence. The Truth About AI from the People Building It*, Packt Publishing, Birmingham, UK, 2018. In terms of the implications for the future workplace, see among others: Daniel Susskind, *A World Without Work. Technology, Automation and How We Should Respond*, Penguin Random House, London, 2019. For more critical work on technology and data, see: Carl Benedikt Frey, *The Technology Trap. Capital, Labor, and Power in the Age of Automation*, Princeton University Press, 2019, and Nick Couldry and Ulises A. Mejias, *The Costs of Connection. How Data is Colonizing Human Life and Appropriating it for Capitalism*, Stanford University Press, 2019.

[xiii] Against the backdrop of frequent analyst questions on current M&A activity, senior management of major Western banks remained cautious in their outlook, with the CFO of JPMorgan Chase, Jeremy Barnum, pointing out that "year-to-date M&A is significantly down and remains a headwind for the rest of the year" (Q2'2023 analyst call on 14 July

2023). In turn, the CFO of Morgan Stanley, Sheron Yeshaya, was saying that the "M&A backlog is building, and discussions continue but a lag remains" (Q2'2023 analyst call on 18 July 2023) while the CEO of Goldman Sachs, David Solomon, took a more positive view: "There is more M&A dialogue and client sentiment is getting better" (Q2'2023 analyst call on 19 July 2023).

[xiv] Diana Choyleva, "*Investors face a stark choice: are they on the side of the US or of China?"*, Financial Times, 14 June 2023. Companies in the semiconductor industry facing US-led export control seem still to be more benign about the Chinese market, outlining a "strong demand for mature chips in China, so-called mid-critical notes" as the country goes through electrification and infrastructure modernisation (Peter Wennink, CEO of ASML, at the Q2'2023 analyst call on 19 July 2023). In turn, major Western car manufacturers had to revise their China strategy within a short period of time (Ford, Nissan, BMW Group), not only implying more local contents and customer preferences for latest technology and entertainment – essentially "producing in China for China" (Oliver Blume, CEO of Volkswagen Group) – but also looking for more regional reach, trying to speed up time to market and entering new strategic partnerships with local players (Volkswagen Group H1'2023 analyst call, 27 July 2023).

[xv] Sonja Laud, *"Investors need to adapt to the new multipolar world"*, Financial Times, 6 December 2022. Building alternative supply chains often implies significantly higher costs as TSMC outlined when discussing their new fab in Arizona as they faced "insufficiently qualified labour" and had to send about 500 engineers from Taiwan to train their US colleagues. The Chairman of TSMC, Mark Liu, described labour costs overseas a "little higher than we expected" (TSMC Q2'2023 analyst call, 20 July 2023). In turn, the CEO of ASML, Peter Wennink, noted that "construction skills to build a $20 billion fab are crucial" and highlighted Taiwan and South Korea for standing out in this respect (ASML Q2'2023 analyst call, 19 July 2023).

[xvi] Mercedes Ruehl and Patricia Nilsson, *"Siemens unveils big investments in China and Singapore factories"*, Financial Times, 15 June 2023. While some senior executives were more outspoken like the CEO of Boeing, David Calhoun, saying that "we will be the free trade beacon in China with regards to our administration" (Boeing Q2'2023 analyst call on 26 July 2023), others simply outlined the size and/or growth potential of the Chinese market, for example, the CEO of ABB, Björn Rosengren, pointing to the fact that "China is 50 per cent of the robotics' market today", i.e. there is no way one would want to miss out on this market (ABB Q2'2023 analyst call on 20 July 2023).

[xvii] This has been frequently observed by international airlines, with the CEO of Lufthansa Group, Carsten Spohr, pointing to alternative routes taken by corporate passengers from German small and medium-sized companies to Asia and Latin America (Lufthansa FY2022 analyst call on 3 March 2023).

[xviii] Andy Haldane, *"The global industrial arms race is just what we need"*, Financial Times, 26 June 2023.

[xix] For various interpretations of Western industrial policy as a new form of protectionism, see: Janan Ganesh, *"The West will rue its embrace of protectionism"*, Financial Times, 24 January 2023, and Gideon Rachman, "*How America is reshaping the global economy"*, Financial Times, 6 June 2023. In turn, for a divergence between the deglobalisation discourse and actual economic data, see: Adam Tooze, *"Three ways to read the 'deglobalisation' debate"*, Financial Times, 30 January 2023. For an overview of how the German government is spending billions in trying to subsidise its semiconductor industry, see: Guy Chazan, *"Germany's new chip factories: a bet on the future or waste of money?"*, Financial Times, 12 May 2023.

[xx] In fact, weakening currencies in major emerging markets such as Turkey, Argentina and China have often offset operational improvements through cost control and working capital management during the Q2'2023 results season (Maarten de Vries, CFO of AkzoNobel, at the Q2'2023 analyst call on 25 July 2023).

[xxi] Gillian Tett, *"Prepare for a multipolar currency world"*, Financial Times, 31 March 2023 and Zoltan Pozsar, *"Great power conflict puts the dollar's exorbitant privilege under threat"*, Financial Times, 20 January 2023.

[xxii] For a discussion of this kind of corporate disappointment by the CEO of the world's largest container shipping company AP Moller-Maersk, Vincent Clerc, see: Joe Leahy, *"China's economic rebound weaker than expected, warns Maersk"*, Financial Times, 27 March 2023.

[xxiii] Ruchir Sharma, "*'Boomy' talk about the Chinese economy is a charade"*, Financial Times, 22 May 2023, and Tao Wang, *"A spending injection alone is not the cure for China's ailing economic recovery"*, Financial Times, 21 June 2023.

[xxiv] On lower consumer spending, see: Joe Leahy and Greg McMillan, *"China on brink of consumer deflation"*, Financial Times, 10 July 2023, and on youth unemployment, see: George Magnus, "*China cannot allow jobless young to 'lie flat'"*, Financial Times, 22 July 2023. For an excellent academic analysis of the falling productivity growth in China, see: Eswar S. Prasad, "*Has China's Growth Gone from Miracle to Malady?"*, NBER Working Paper 31151, Cambridge, MA, April 2023

[xxv] David Lubin, *"China's recovery might be a bit less than meets the eye"*, Financial Times, 3 February 2023.

[xxvi] The recent clamp-down on Western professional services and consultancies operating in China might obviously have its own impact, see: Joe Leahy, Ryan McMorrow and Edward White, *"'The full treatment': China sends a message with raid on consultancy"*, Financial Times, 10 May 2023.
[xxvii] Hudson Lockett and Leo Lewis, *"Demand grows for Asian investment products that exclude China"*, Financial Times, 13 June 2023. According to Goldman Sachs data quoted in this article from the FT, hedge funds' allocation to Chinese equity has decreased from 13 per cent in January to 9 per cent at the end of May, while emerging Asia ex-China stocks and bonds have snapped up $38 billion by late May, with $22.4 billion in May alone, according to ANZ bank. This is very different from the investor enthusiasm back in January when the Chinese economy had opened, see: Jonathan Wheatley, *"Investors pour money into emerging markets at near-record rate"*, Financial Times, 27 January 2023.
[xxviii] Hudson Lockett and Cheng Leng, *"What equity markets got wrong about China"*, Financial Times, 4 July 2023.
[xxix] Volkswagen Group Q2'2023 analyst call, 27 July 2023.
[xxx] Pilita Clark, *"The fossil fuel industry will not lead us out of the climate crisis"*, Financial Times, 19 July 2023.
[xxxi] For pressure from major institutional investors aligned with demands from influential climate activists at the 2023 AGM of TotalEnergies, see: Sarah White, *"Proxy adviser backs activists' climate resolution at Total"*, Financial Times, 15 May 2023. Another investor debate is how comfortable senior executives manage to meet their bonus targets for CO2 emission reduction, see: Attracta Money, *"European bosses hit easy targets for 'green' bonuses, pay report shows"*, Financial Times, 1 March 2023, referring to a joint study of Europe's 50 largest companies from PwC and LSE.
[xxxii] Major statistical sources used in this analysis include the *bp Energy Outlook: 2023 edition*, January 2023, *The Statistical Review of World Energy: 72nd edition*, Energy Institute, June 2023 and the *IEA World Energy Investment 2023* report, International Energy Agency, May 2023.
[xxxiii] Adair Turner, *"Myths are clouding the reality of our sustainable energy future"*, Financial Times, 20 July 2023. In this context, there is no surprise that major global car manufacturers talk about "deep sourcing" to lock up the supply of raw materials for many years (Ola Källenius, CEO of Mercedes Benz Group, at the Q2'2023 analyst call on 27 July 2023). Similarly, Tesla spoke about their efforts to gain a price advantage for nickel, cobalt and lithium (Elon Musk, CEO of Tesla, at the Q2'2023 analyst call on 19 July 2023).
[xxxiv] The new CEO of Shell, Wael Sawan, conceded at the Q2'2023 analyst call that they had taken part in the German offshore wind auction but were not prepared to up their bid as this would not have met Shell's ROI target of 8 per cent (Shell Q2'2023 analyst call on 27 July 2023). In turn, the CEO of TotalEnergies, Patrick Pouyanne, maintained that they were successful because they could offer all their project management skills from the traditional oil and gas business (TotalEnergies Q2'2023 analyst call on 27 July 2023). For the current US debate on a potential ESG backlash, see: Patrick Temple-West and Brooke Masters, *"Wall Street titans confront ESG backlash as new financial risk"*, Financial Times, 1 March 2023. In the Appendix, we show a chart from the IEA World Energy Investment 2023 report how the cash spending of oil and gas companies has changed since 2008, with a much higher share allocated for shareholder return and net debt reduction in 2021-22, while the share for low-carbon capital expenditure remains relatively low.
[xxxv] Tesla's business proposition is essentially to give hardware away but generate regular income through software subscription using remote software updates (along the lines of mobile phones). The other argument by its CEO, Elon Musk, is that BEVs should be widely available for the middle-income population and not just be offered to premium customers (Tesla 2023 Investor Day, 1 March 2023). This has been fiercely debated by other car manufacturers, who maintained that prices should not be below the residual value of a car (CFO of Renault, Thierry Pieton, at the Renault Software Defined Vehicle Deep Dive, 24 April 2023) and that "pricing power is not about freezing prices" (CEO of Stellantis, Carlos Tavares, at the Stellantis H1'2023 analyst call on 26 July 2023). While some car makers like Mercedes Benz Group have opted to target only premium customers and follow Tesla's example to produce a "super computer-like performance in every Mercedes vehicle" (Ola Källenius, CEO of Mercedes Benz Group, at the Mercedes Benz Operating System 2023 Investor Day in Silicon Valley, 22 February 2023), others observed in their recent BEV sales strategy a "higher reluctance from customers" given less discount offers and lower purchasing power (Oliver Blume, CEO of Volkswagen Group, at the H1'2023 analyst call on 27 July 2023).
[xxxvi] Ola Källenius, CEO of Mercedes Benz Group, at the Q2'2023 analyst call on 27 July 2023. At the Volkswagen 2023 Capital Markets Day on 21 June 2023, the CEO Oliver Blume emphasised that "automotive has become a technology game" and that the "software game has changed our industry completely". In the words of the CEO of Ford, Jim Farley, the software transition is "how to connect the vehicle to the customer's digital life", with Ford's software focus being on connection, productivity, safety/security and autonomy (Ford Capital Markets Day 2023, 22 May 2023). In

this respect, the key question is about who owns the critical software – and various car manufacturers have opted for different partnerships – and what kind of services could be provided beyond the vehicle (prognostics, predictive failure, safety/security). In this context, the starting price for affordable BEVs is largely defined at EUR 25,000 (VolvoCars, Stellantis, Volkswagen) but the challenge remains for BEV margins to compete with those from traditional internal combustion engine (ICE) cars, e.g. VolvoCars claiming that BEV margins of 15-20 per cent should be possible despite current price actions in Europe (Jim Rowan, CEO of VolvoCars, at the Q2'2023 analyst call on 20 July 2023). E-power price parity is a big issue in analyst and investor discussions, with Nissan conceding that this would only be possible in 2026 (Makoto Uchida, CEO of Nissan, at the FY2022 analyst call on 11 May 2023).

[xxxvii] Carlos Tavares, CEO of Stellantis, at the H1'2023 analyst call on 26 July 2023. On this threat from Chinese BEV manufacturers, see: Gloria Li and Edward White, *"Only 10 carmakers will survive global EV battle, says Tesla rival Xpeng"*, Financial Times, 25 April 2023.

[xxxviii] For some OEMs, this strategic review has resulted in the exit from the Chinese BEV market (Ford) while others have maintained that they are "carefully and organically building their BEV position in China" (Ola Källenius, CEO of Mercedes Benz Group, at the Q2'2023 analyst call on 27 July 2023). While Nissan claimed to have sold 60 per cent of new EVs in China in FY2022, they equally conceded that "we have to balance between price and volume in China" as a result of the Covid lockdown, semiconductor shortages, rapid digitalisation and competition (Makato Uchida, CEO of Nissan, at the FY2022 analyst call on 11 May 2023). For extensive coverage in the financial media, see: Wang Xueqiao, Edward White and Gloria Li, *"Foreign carmakers confront 'moment of truth' in China"*, Financial Times, 21 April 2023, and Edward White, *"China's car market has become a Darwinian battleground"*, Financial Times, 26 May 2023.

[xxxix] Both Ford and VolvoCars have probably gone through the most extensive industrial restructuring and cost cutting programmes in recent months, although even Tesla devoted a large part of their 2023 Investor Day on 1 March 2023 to their efforts in rethinking the manufacturing process by improving space time efficiency and operating density while further reducing costs through structural sub-assembly. In turn, Ford reported their transformation through a "complete overhaul of the industrial system", adopting a lean operating system and a strong cost focus on manufacturing and supply chains/procurement (Jim Farley, CEO of Ford Motor Co., at the FY2022 analyst call on 2 February 2023). See also, Peter Campbell, *"To invest or cut loose: western carmakers' China conundrum"*, Financial Times, 19 May 2023.

[xl] Jim Farley, CEO of Ford Motor Co., at the Ford 2023 Capital Markets Day on 22 May 2023, and Carlos Tavares, CEO of Stellantis, at the H1'2023 analyst call on 26 July 2023.

[xli] On the discussion about the need for more battery cost competitiveness, see: Stellantis H1'2023 analyst call on 26 July 2023 and Tesla's effort on commodity refining and energy storage in batteries, see: Tesla Q1'2023 analyst call on 19 April 2023. On lithium prices going up and down, see: Harry Dempsey and Gloria Li, *"Chinese lithium prices fall 30% as demand for electric vehicles weakens"*, Financial Times, 22 February 2023. On Tesla's effort to expand and improve its battery production, see: June Yoon, "*Tesla is disrupting the car battery industry"*, Financial Times, 5 April 2023.

[xlii] At its Mercedes Benz Operating System 2023 Investor Day on 22 February 2023, the CEO Ola Källenius announced their strategic vision to decouple hardware from software and switch from a "rules based to a machine-learning approach", essentially "learning on the road" and "upgrading over the air", as a result of which "the product can never get old". In turn, according to Tesla's CEO, Elon Musk, the company's share of global wafer capacity will reach 0.5% in 2023 and this is planned to be expanded to 5% in future (Tesla 2023 Investor Day, 1 March 2023).

[xliii] At the Tesla Q2'2023 analyst call on 19 July 2023, its CEO, Elon Musk, reiterated that "the value of a car increases dramatically when it is autonomous", maintaining the strong belief that "profits will increase over time through autonomy" but Tesla's data advantage and training capabilities need to be further developed (Tesla Q1'2023 analyst call on 19 April 2023).

[xliv] Madhumita Murgia, *"ChatGPT maker OpenAI unveils new model GPT-4"*, Financial Times, 15 March 2023. For the new capabilities of GPT-4, see: John Thornhill, *"GPT-4 is astonishing as it is unnerving"*, Financial Times, 17 March 2023.

[xlv] Richard Waters, *"Big Tech is racing to claim its share of the generative AI market"*, Financial Times, 21 April 2023.

[xlvi] Kenzy Bryan, *"Asset managers pressure tech companies over possible AI misuse"*, Financial Times, 20 June 2023. For more than 1,000 researchers and corporate executives signing an open letter to halt the AI arms race, see: Tim Bradshaw and Ian Johnston, *"Elon Musk and other tech experts call for 'pause' on advanced AI systems"*, Financial Times, 29 March 2023. Musk had already voiced his concern earlier at Tesla's 2023 Investor Day on 1 March 2023, when he called for more regulatory involvement and considered the current situation as being "dangerous".

[xlvii] Anjana Ahuja, *"Generative AI is sowing the seeds of doubt in serious science"*, Financial Times, 1 March 2023. On

this topic, see also: John Thornhill, *"Multiple red flags are not yet slowing the generative AI train"*, Financial Times, 30 March 2023.

[xlviii] Ola Källenius, CEO of Mercedes Benz Group, at the Q2'2023 analyst call on 27 July 2023.

[xlix] Roy Jakobs, CEO of Philips, at the Q2'2023 analyst call on 24 July 2023.

[l] Margherita della Valle, CEO of Vodafone Group, at the Q1'FY2024 Trading Update on 24 July 2023.

[li] George Hammond, *"Sceptical investors worry whether advances in AI will make money"*, Financial Times, 7 March 2023.

[lii] For a number of small AI start-ups having the potential to make a significant impact, see: John Thornhill, *"The likely winners of the generative AI gold rush"*, Financial Times, 11 May 2023.

[liii] Andrew Hill, *"'Attackers only have to get it right once': how cyber security burst into the boardroom"*, Financial Times, 25 May 2023.

[liv] A ransomware attack on US-based MKS Instruments in early February 2023 led to supply constraints in the global semiconductor industry, see: Tim Bradshaw and Mehul Srivastava, *"MKS Instruments warns disruption from ransomware attack will last 'weeks'"*, Financial Times, 28 February 2023. On the impact of a cyber attack on financial data group Ion Markets on global derivatives trading in late January 2023, see: Nikou Asgari, Harry Dempsey, Stephen Morris and Nicholas Megaw, *"Cyber attack at financial data group Ion affects derivatives trading"*, Financial Times, 2 February 2023.

[lv] Jemima Kelly, *"Using crypto for crime is not a bug – it's an industry feature"*, Financial Times, 28 April 2023.

[lvi] Ian Smith, *"Lloyd's of London battles insurers over 'state-backed' cyber attacks"*, Financial Times, 31 March 2023.

[lvii] Ian Smith, *"Risk managers warn cyber insurance could become 'unviable product'"*, Financial Times, 9 May 2023.

[lviii] Earlier this year, US authorities reportedly disrupted malicious software deployed by the Russian Federal Security Service for two decades to misappropriate material from hundreds of computer systems in at least 50 countries linked to journalists and NATO member states, see: Stefania Palma and Mehul Srivastava, *"US says it disrupted malware used by Russian spies to steal documents"*, Financial Times, 10 May 2023. For an extensive coverage of Russia's cyber war strategy, see also: *"Sandwurm und Schlange"*, DER SPIEGEL, 1 April 2023. On the attempt by the Chinese state-sponsored hacking group 'Volt Typhoon' to compromise critical infrastructure in the US, which was revealed by Microsoft in May 2023, see: Tabby Kinder, *"China hits back after Microsoft says state-sponsored group hacked critical US infrastructure"*, Financial Times, 25 May 2023.

[lix] For the closely followed ransomware attack on the UK's Royal Mail, see: Mehul Srivastava and Oliver Telling, *"How Royal Mail's hacker became the world's most prolific ransomware group"*, Financial Times, 18 January 2023, and Mehul Srivastava and Oliver Telling, *"Royal Mail hackers demanded GBP65mn ransom"*, Financial Times, 15 February 2023.

[lx] In this respect, the Russian hacker group Clop is fairly representative, after having attacked companies like British Airways, Heidelberger Druckmaschinen, Putnam Investments and Leggett & Platt, see: Mehul Srivastava, *"Hacker gang Clop deploys extortion tactics against global companies"*, Financial Times, 16 June 2023.

[lxi] Ivan Levingston, Ortenca Aliaj and Kaye Wiggins, *"Sharp fall in global dealmaking brings pandemic-era frenzy to a halt",* Financial Times, 29 December 2022

[lxii] *Mid-Year 2023 Outlook – Light at the End of the Tunnel?*, RWBaird, 6 July 2023

[lxiii] Global Mergers & Acquisitions Review, First Half 2023, Refinitiv

[lxiv] Ivan Levingston, James Fontanella-Khan and Ortenca Aliaj, "*Dealmaking at 10-year low in first quarter as bank crisis hits confidence",* Financial Times, 31 March 2023

[lxv] Global Mergers & Acquisitions Review, First Half 2023, Refinitiv

[lxvi] *Mid-Year 2023 Outlook – Light at the End of the Tunnel?*, RWBaird, 6 July 2023

[lxvii] *"Global M&A Industry Trends: 2023 Mid-Year Update",* https://www.pwc.com/gx/en/services/deals/trends.html

[lxviii] Richard Waters, *"AI boom forces tech companies to make M&A choice"*, Financial Times, 30 June 2023.