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Market Structure

Liquidity Landscape

Q4 2023

Review + Reform for 2024

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Review + Reform for 2024

European markets accelerated upwards into the close of year, with leading indices across the continent achieving record highs. Yet overall market volumes remained light, with the share of volume on lit primary markets excluding the auctions continuing to remain low at 34% on average. This means the challenges market participants face sourcing liquidity across volatile and fragmented markets are more salient than ever.

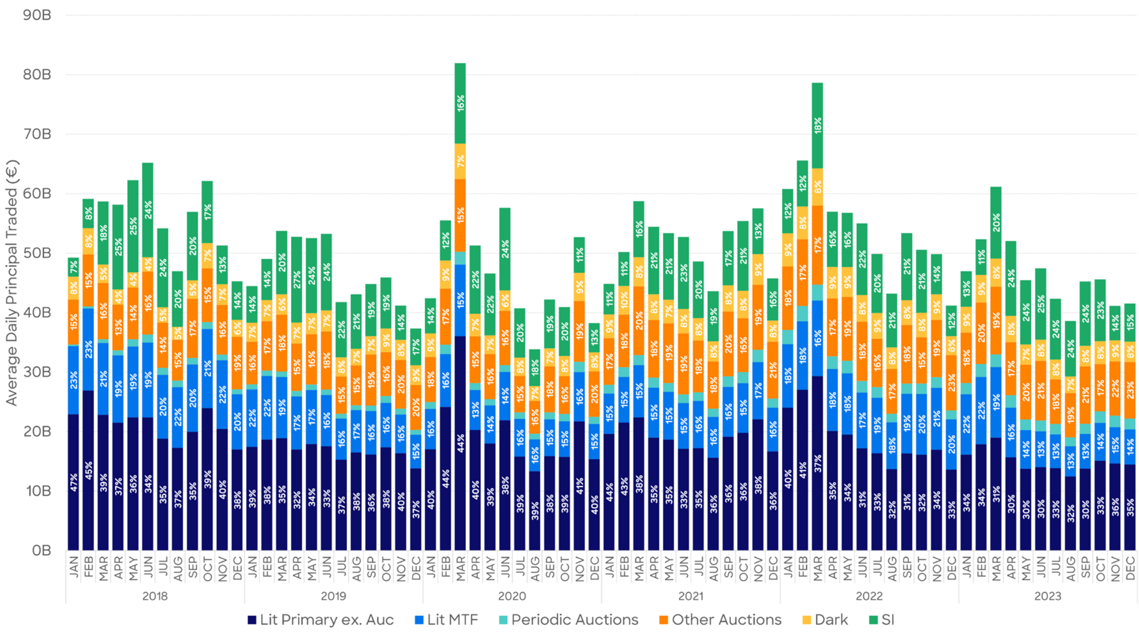
Despite the ongoing geopolitical risk of broader conflict in the Middle East, perceived declining inflation coupled with resilient economic fundamentals appears to have fuelled a shift in investor sentiment. In both Europe and the United States, the prospect of a softer landing has become more probability than possibility, with central bankers increasingly signalling the prospect of rate cuts in 2024. This stands in contrast to the technology and AI-led narratives that fuelled price action throughout the first half of 2023. Regardless of this optimism, 2024 has a number of significant headwinds from key elections globally, rising global public debt and further geopolitical risks including disruptions in shipping and supply chains that risk reigniting the inflationary spark.

What this means for European Markets

In the fourth quarter European equity market averaged €42.8B in daily value transacted, up 2% over the third quarter's average of €42.1B, but the lowest value of any fourth quarter since 2019 when looking at historic volumes.

Exhibit 1

EMEA Flow Breakdown[1]



Source: Cboe and Bloomberg, January 2018 to December 2023

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[1] All data in this report has been sourced from Liquidnet internal analysis and Cboe and Bloomberg market data.

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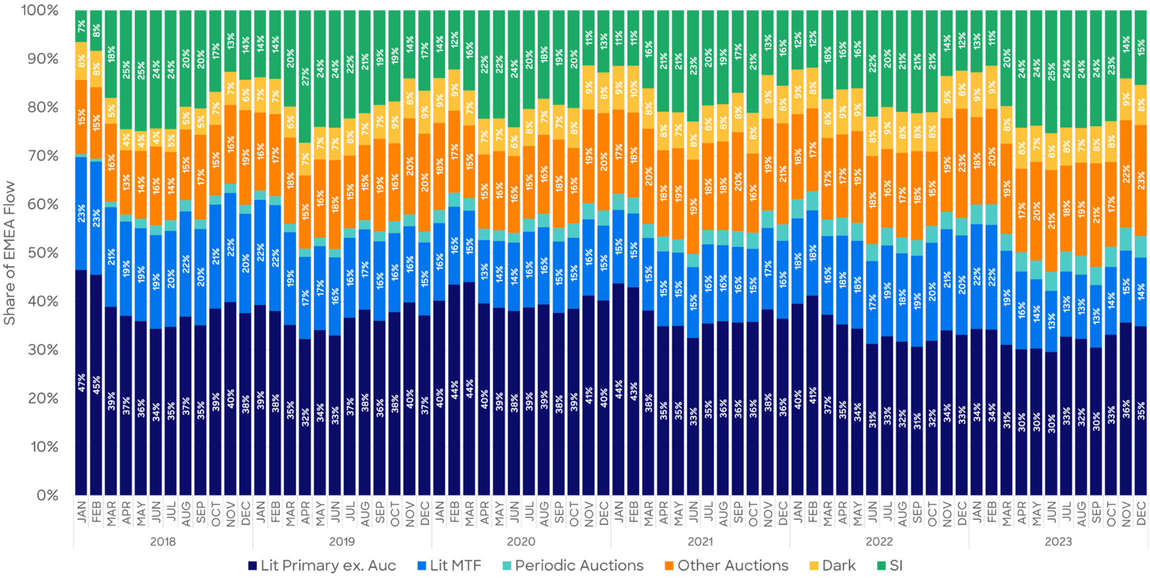
Exhibit 2

EMEA Flow Breakdown (%)



Source: Cboe and Bloomberg, January 2018 to December 2023

The shift away from the lit continuous sessions has been the dominant theme in European equity market structure post-MiFID II. During the quarter, lit continuous volumes ticked up from the third quarter's record lows, as aggregate lit primary and MTF market share reapproached 50% of overall activity.

Lit MTF activity remained muted with a 14.3% market share, well below its 2018 to 2022 average of 17.5%. The share of flow in the continuous lit primary session increased by nearly 10% from the third quarter's average of 31.8% to a monthly average of 34.6%. Despite this, lit primary volumes in Q4 remained down 23.1% from 2022's average and down 22.7% from 2021's levels.

SI volumes traditionally decline into the close of year as bank risk books deplete and lit primary market share benefits as a result. This will be one to watch as the EU Parliament has now signed off on proposed amendments to MiFID/R for ESMA to develop Technical Standards. In the proposed text there are further constraints for Systematic Internalisers to trade below current thresholds or to trade at mid to support greater price formation on Lit continuous markets. While a removal of the Volume Cap in Europe to mirror the UK would be welcome by market participants, the Parliament instead proposed to limit the use of the Reference Price Waiver and Negotiated Trade Waiver. Firms can still fulfil the STO by using the NTW and reporting the trade to a trading venue but the operational uncertainty of how NTW can be used could lead to some organisations choosing to opt out of being an SI.

The additional factor here is the rapid growth of Periodic auctions which have doubled over the last few years to represent now 6% of lit market share. With proposed changes to SI trading capability, it will be interesting to see just how much periodic auction market share will increase.

Post-Brexit this has further ramifications given that non-EU market participants represent significant market share in EU activity. Given the focus from the UK Wholesale Markets review, the question is whether this will lead to the formation of alternative pools of liquidity in the UK, leaving EU market participants forced to trade on EU venues only. The intention to further strengthen UK Capital Markets competitiveness would weaken the attractiveness of EU continuous lit markets price formation, in turn damaging support for Capital Markets Union (CMU) desired by European policy makers and regulators.

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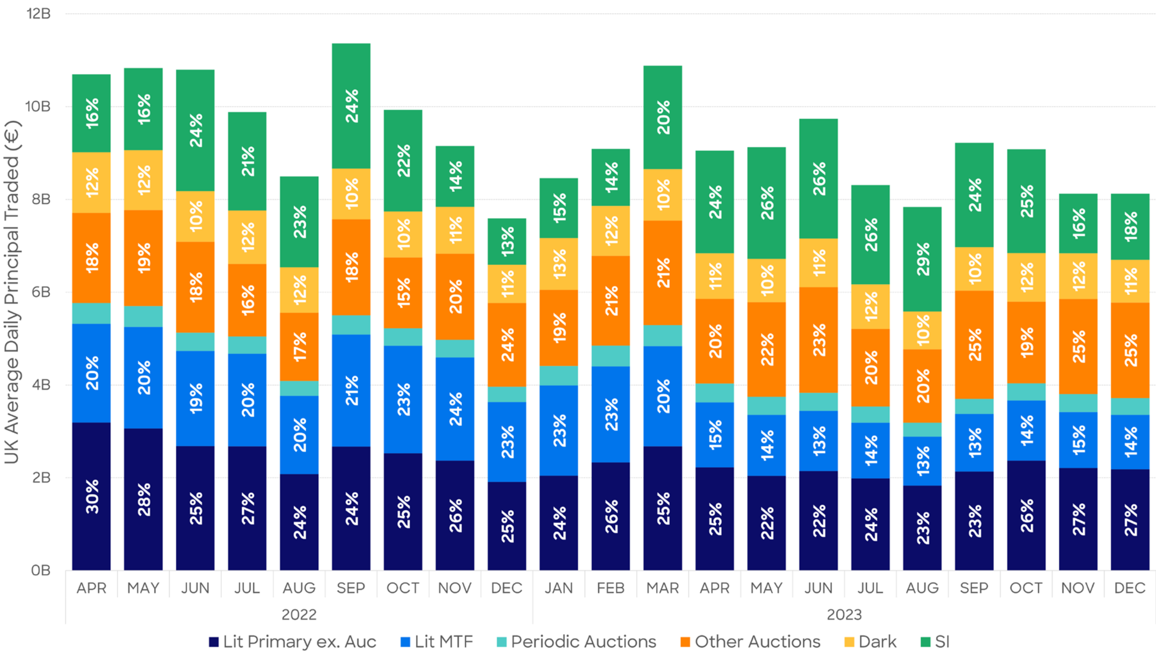
[3] All data in this report has been sourced from Liquidnet internal analysis and Cboe and Bloomberg market data

Exhibit 3

UK primary volumes stay consistent despite outages

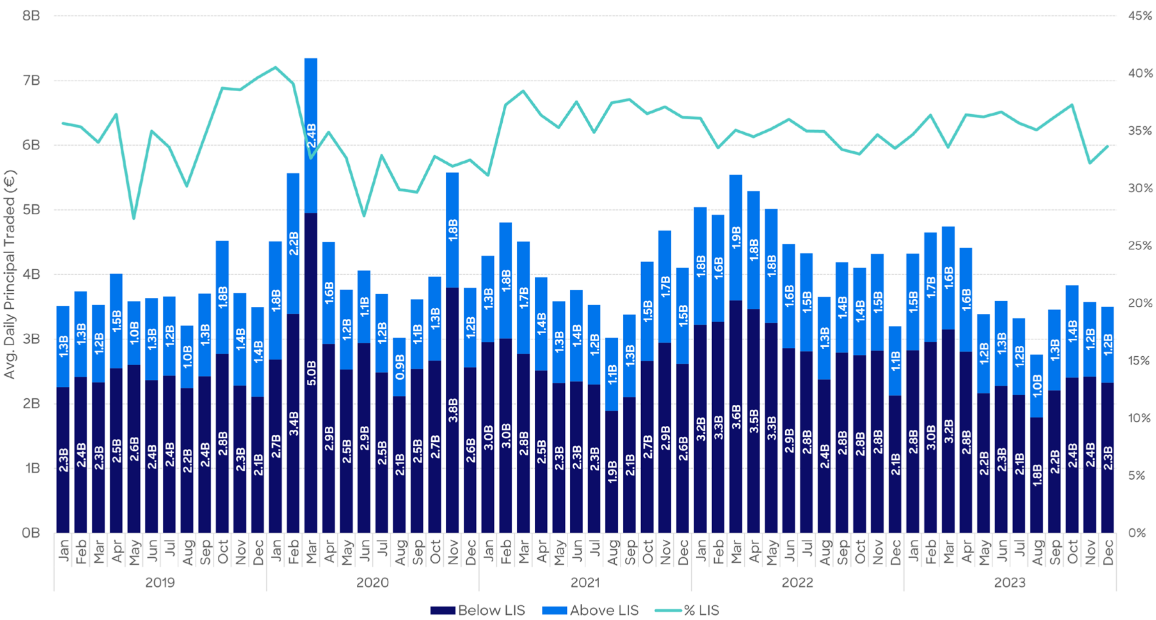


Source: Bloomberg, April 2022 to December 2023

Several outages on the LSE during the quarter impacted the availability of primary exchange liquidity and price formation. Despite this, UK Lit MTF and primary exchange market shares ticked upwards, broadly aligning with the general trend in EMEA, indicating limited sustained impact from the outages on market activity.

Exhibit 4

LIS market share reaches its highest level since 2021



Source: Cboe and Bloomberg, January 2019 to December 2023

Daily dark volumes averaged €3.6B during the quarter, up 13.2% from the third quarter's daily average of €3.2B. The Large in Scale segment of the dark market saw its share remain consistent, at a monthly average of 34.4% of the overall dark market. In October, the LIS market was 37.2% of the dark market, its highest share since September of 2021.

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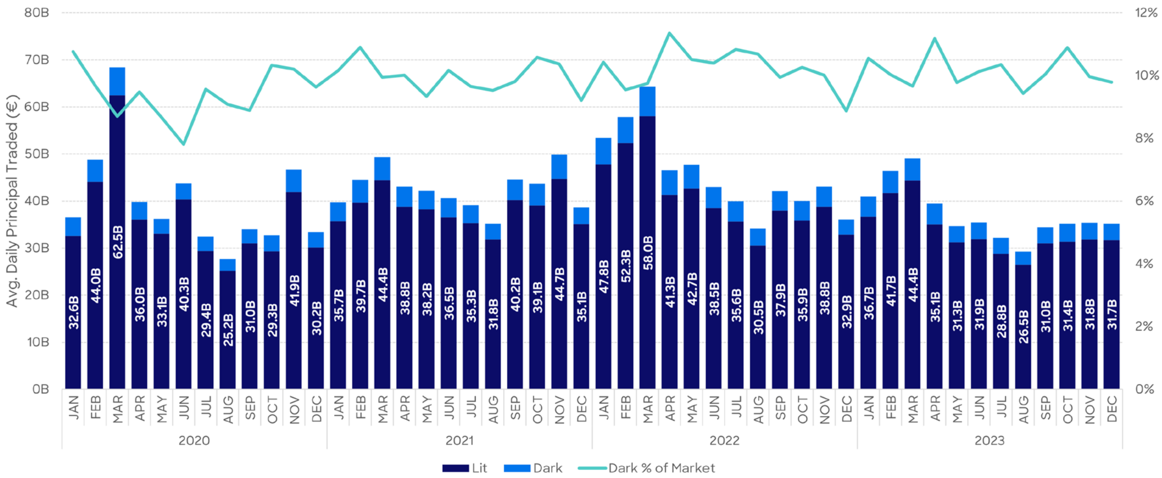
Exhibit 5

The dark market overall remains stable

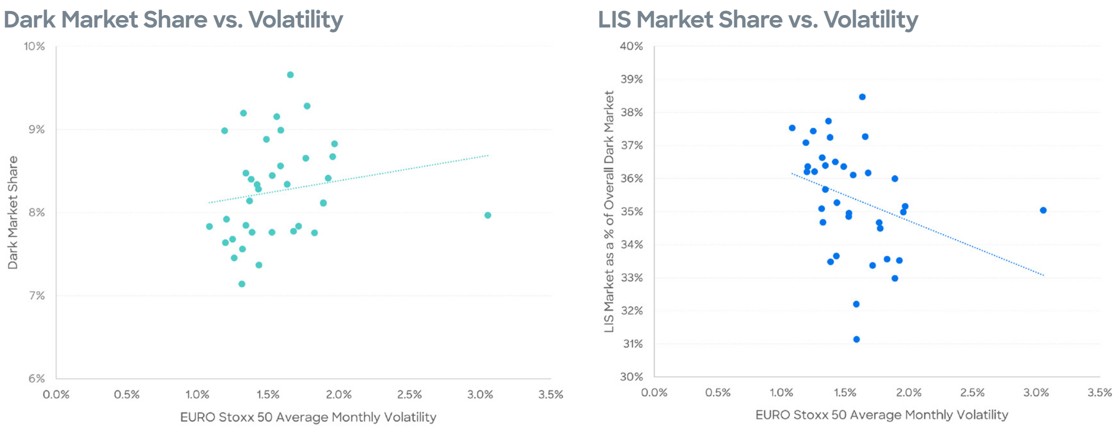


Source: Cboe and Bloomberg, January 2020 to December 2023

Dark market volumes again oscillated within their historic range of 9 – 11% of overall market activity, reaffirming the long-term stability of dark market share. It is notable that this relative stability has occurred against the backdrop of significant market volatility and several major geopolitical events over the past few years. Liquidnet analysed the relationship between dark market share and the average monthly volatility of the EURO STOXX 50 from 2021 through the end of 2023. There is a small but weak positive relationship between dark market share and increasing volatility. Each 10 bps of additional volatility correlated with a 2.8 bps increase in dark market share.[2] Within the dark market, greater volatility is correlated with a larger LIS market size in absolute terms, but smaller LIS market share.[3] This suggests that in periods of stress the dark market can function more as a general liquidity source in competition with lit venues, in addition to minimizing information leakage via block seeking in the LIS market.

Exhibits 6a and 6b

The impact of volatility on dark market share



Source: Cboe and Bloomberg, January 2020 to December 2023

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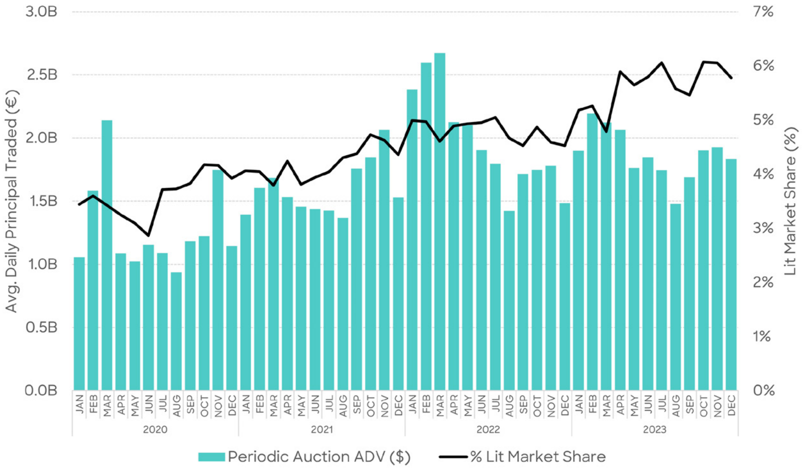
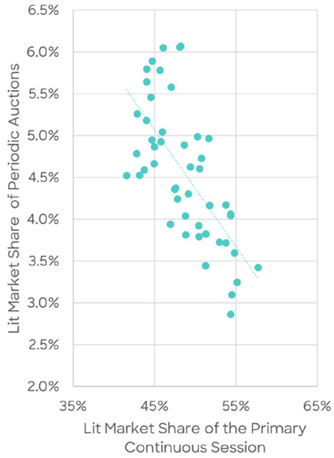
[2] Liquidnet Analysis of Cboe and Bloomberg market data, January 2021 to December 2023.
Linear regression: D_Share = .2876 * (Vol) + .0781 with an R-squared of .0284.
[3] Liquidnet Analysis of Cboe and Bloomberg market data, January 2021 to December 2023.
Linear regression: LIS_Share = -1.5609 * (Vol) + .3749 with an R-squared of .1099.

Exhibits 7a and 7b

Periodic auctions show consistent growth with record market share





Source: Cboe and Bloomberg, January 2020 to December 2023

Periodic auctions now represent nearly 6% of overall lit volumes. The continued steady and consistent growth in market share compared to the stagnant lit market volumes illustrate market participants still need trading strategies with protection when trading in the lit. Considering the overall decline in secondary market activity, the periodic market share growth appears set to continue. Comparing periodic auction market share against primary continuous market share shows a correlation between declining activity in the primary continuous session and growing periodic auction volumes[4] (see *Figure 7b* above). With the LIS market remaining steady but with periodic market share growing, market participants will require more innovative tools and technology with which to navigate market fragmentation and rising volatility—making the trader's toolkit more important than ever.

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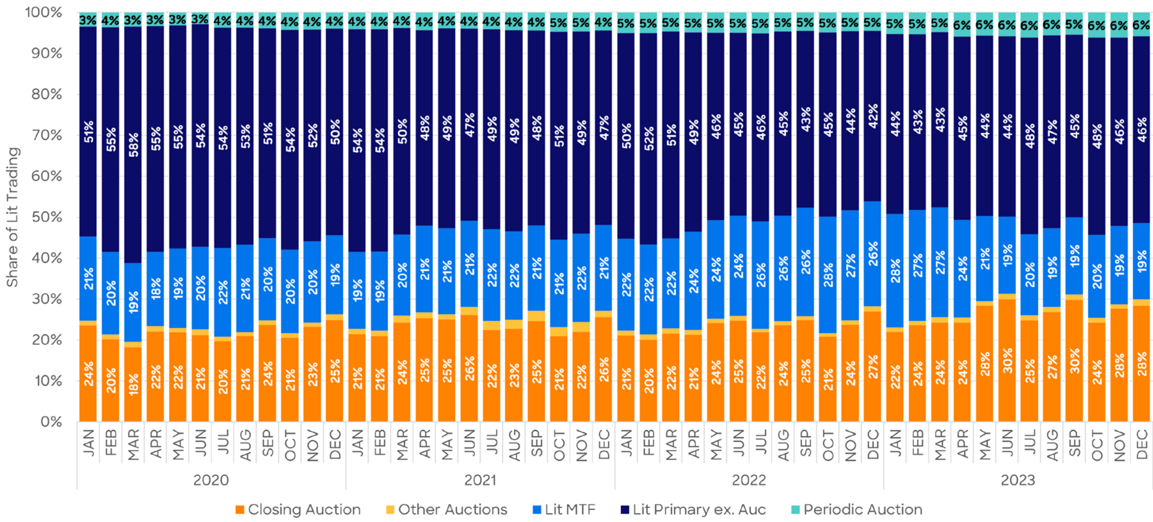
[4] Liquidnet Analysis of Cboe and Bloomberg market data, January 2020 to December 2023. Linear regression: PA_Share = -.1395 * (LPC_Share) + .1134 with an R-squared of .4659.

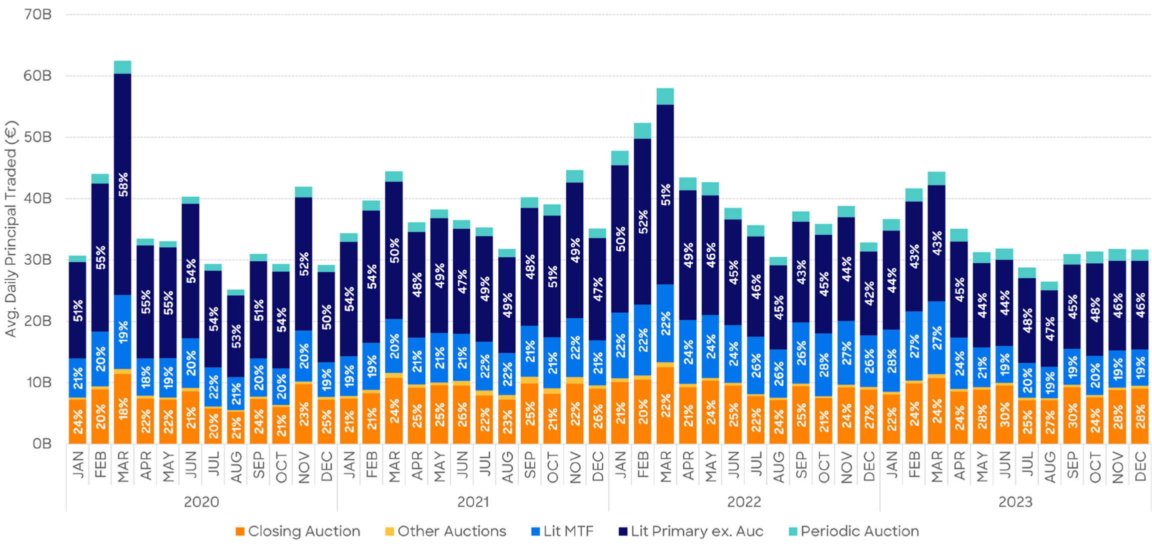
Exhibit 8

Lit volumes plateau across the continuous session and the close



Source: Cboe and Bloomberg, January 2020 to December 2023

Exhibit 9



Source: Cboe and Bloomberg, January 2020 to December 2023

Overall lit market volumes across the continuous sessions and auction formats stabilized at an average daily activity level of €31.6B. The importance of the closing auction did not abate, finishing the quarter with an average market share of 26.8%. This was down slightly from the second (27.5%) and third (27.2%) quarter's levels, yet still represents the third highest average quarterly market share since 2018.

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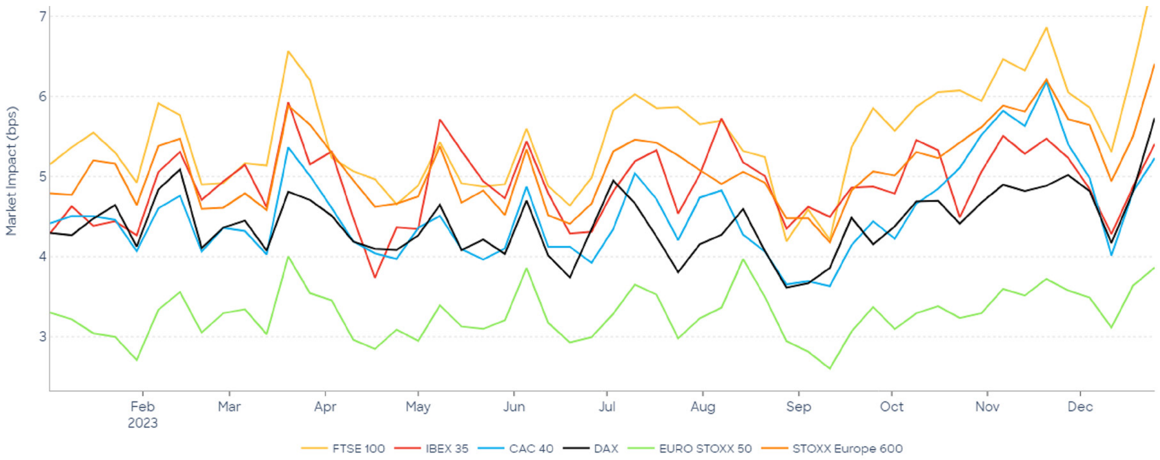
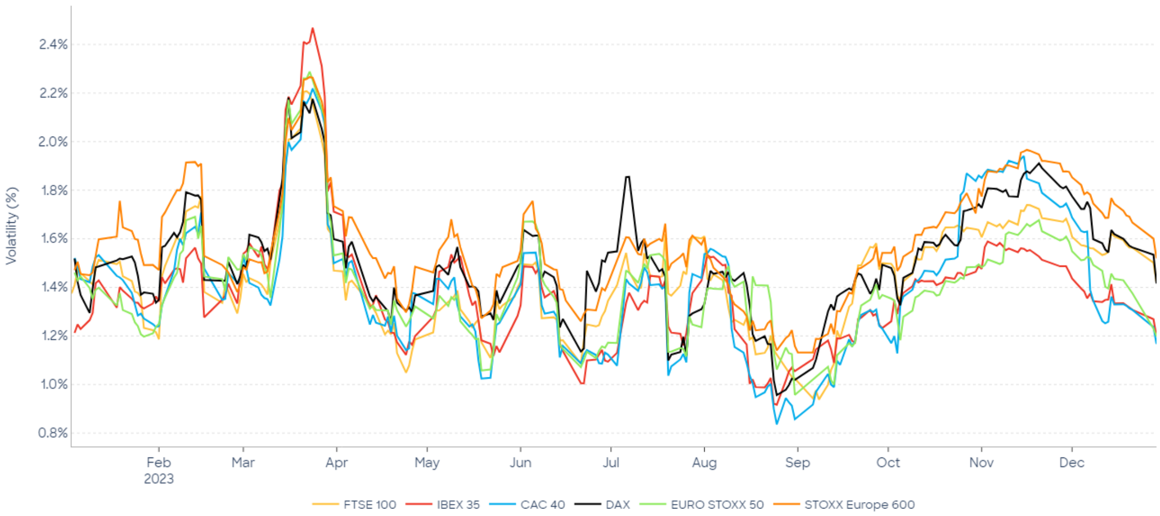
Exhibits 10a and 10b

Volatility rises and drives trading costs higher

Average Market Impact Cost by Index



Average Volatility by Index



Source: Bloomberg, January 2023 to December 2023

Coming off record lows in September, volatility rose among most major European indices, reaching a peak in mid-November before declining to end of the year, driving higher trading costs for the fourth quarter overall. Although the rise in volatility was more muted and gradual than the spike seen around the banking crises of mid-March, Q4 trading costs increased not just from higher volatility, but further spiked as the depressed volumes of the holiday period elevated the cost of sourcing liquidity. The exception was the EURO Stoxx 50, with trading costs remaining less volatile and more range bound than the other indices, particularly in comparison with the FTSE 100 and broad market STOXX Europe 600. This suggests some bifurcation between the impact of volatility on liquidity cost across Europe's largest and most liquid equities and the remainder of the market, reinforcing the need for even greater attention to be paid to small, mid, and even lower-end large cap liquidity.

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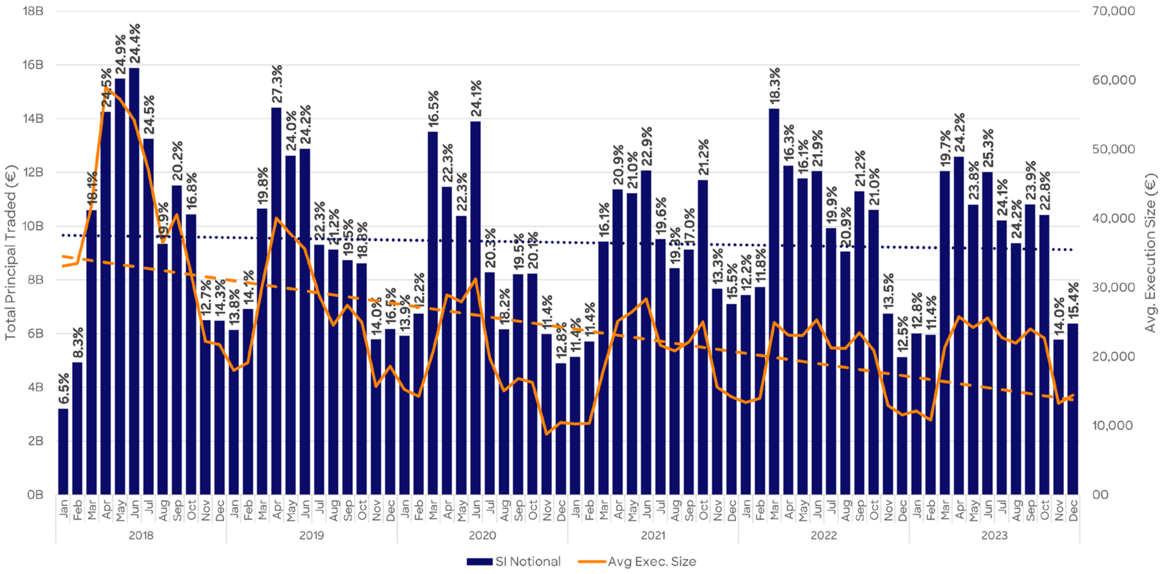
[4] https://bills.parliament.uk/bills/3326
[5] https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/capital-markets-union_en

Exhibit 11

Systematic Internalisers experience their seasonal decline



Source: Cboe and Bloomberg, January 2018 to December 2023

SI volumes declined seasonally as usual to close out the year. Overall SI market share remained higher than in 2022 and in line with 2021 levels as market participants appear to value the certainty of execution and immediacy of SI interaction for segments of their flow. Bank and ELP risk capital remains an important liquidity source, with its place in the market structure affirmed by the lack of liquidity elsewhere, despite the best efforts of regulators to curtail bank risk provision. (Note earlier reference to the proposed changes to MiFID/MiFIR.)

Regulatory Developments

2024 has begun with a flurry of questions—not just on the future of equity market structure but the future of capital markets itself is back in the spotlight. The arrival of the spot Bitcoin ETF[5] may not be replicated in the UK any time soon, but it sets an interesting new precedent for the future of regulation for three reasons:

1. Chair Gensler's perceived defeat in the long-standing battle against crypto currency entering the mainstream raises **questions on how capital markets jurisdiction will operate going forward**.The SEC's refusal to grant a spot Bitcoin ETF due to investor protection concerns was contested by the US Court of Appeals over the perceived inconsistent treatment of bitcoin-related ETPs given the SEC approval of more complex futures-based ETFs two years earlier.[6] SEC Commissioner Mark T Uyeda highlighted his concern over the shift in approach towards the approval process and its future implications claiming, "*the flawed reasoning in the Approval Order could reverberate for years to come*."[7] Commissioner Hester Pierce claimed the decisions would harm the SEC's reputation "*far beyond crypto*."[8]

2. The challenge also emphasises the **rising conflict between technological and product innovation versus investor protection and education** which is only likely to intensify.

3. Thirdly, it is not the Bitcoin ETF itself which is interesting but **what this is likely to herald for asset investment, fund tokenisation and ultimately real-time settlement** going forward for all asset classes as digital platforms and data continue to dominate capital markets.

Continued on next page

[5] https://www.sec.gov/news/statement/gensler-statement-spot-bitcoin-011023
[6] Ibid
[7] https://www.sec.gov/news/statement/uyeda-statement-spot-bitcoin-011023
[8] https://www.sec.gov/news/statement/peirce-statement-spot-bitcoin-011023

The Future Technological Transformation of Financial Assets

BlackRock CEO Larry Fink continues to highlight the future of markets as tokenisation, with every stock, every bond digitally identified on a general ledger.[9] His view is that tokenization will improve the ability to better customise strategies for investors as well as eliminate Illicit activity through instantaneous settlement and better identification of asset ownership. Regulators across the globe are also rapidly working towards greater tokenisation of assets citing the benefits from improving reconciliations and risk management, automation of smart contracts improving data disclosure and transparency, to a reduction in costs, faster settlement times reducing funding and improving liquidity and transferability.

The question is what will be the outcome for investment of existing assets and markets?

1. **Fund Tokenisation is small but growing rapidly and every country is involved from the US, to Europe, to Singapore**. The $800M market in tokenised bonds in Europe today is estimated to grow to a combined digital version of mainstream assets of $5T by 2030.[10] Demonstrating the international collaboration of this initiative, MAS announced a partnership with Schroders and Calastone on a tokenised investment vehicle in November[11] along with the FCA and IA publishing a blueprint model for tokenisation the same month.[12] The initial UK phase will cover authorised funds holding only traditional assets. The ability to improve liquidity in the underlying asset classes is not clear given that settlement in the units of the fund would be carried out as they are today—off-chain, with no use of digital money, and on traditional timescales of a UK fund (i.e., T+2/3) with all the issues this represents for fund subscription and redemption.

2. **Broader mainstream adoption of crypto now appears to be a matter of time, extending DeFI FinReg requirements.** In December, Flow Traders announced the formation of AllUnity, a new partnership between DWS, Flow Traders and Galaxy regulated by BaFin.[13] AllUnity will include an € denominated stablecoin and will focus on accelerating mass market adoption of digital assets and tokenization. On-chain money from reputable providers is a key remaining piece in crypto maturing and becoming further integrated within traditional finance.

3. **Mainstream adoption will extend regulatory co-ordination and reach.** The prevalence of scams and frauds in the cryptoassets sector will continue to focus regulatory scrutiny on anti-money laundering rules, Know Your Customer (KYC) and Source Of Wealth (SOW). Regulators have also highlighted the need to look at consumer duty and digital promotions to ensure advertising falls under the appropriate financial advice regardless of whether this is an advert on TikTok or traditional fund marketing material.[14] The SEC focus for 2024 includes a review of Emerging Financial Technology: broker-dealers and advisers offering new products and services related to crypto assets and emerging technologies, addressing compliance, risk management, and custody requirements.[15] The UK launched its Digital Securities Sandbox (DSS)[16] where firms can test running securities market infrastructure on blockchain or DLT technology. This follows the European equivalent, the EU Pilot Regime, which launched back in March 2023.[17]

4. **With regulators now focussing on digitalisation of assets, discussions over the move to follow the US from T+2 to T+1 settlement now seem to becoming somewhat of a moot point.** The UK have identified plans to leverage the Bank of England's work on Synchronisation to enable wider industry access to Real-time Gross Settlement service and enable funds settlement in digital central bank money within a two-year period.[18] ESMA recently suggested a move to T+0 rather than following the SEC move to T+1.[19] While the industry is clearly not yet ready for such a shift, it clearly illustrates the direction of travel. Both the UK DSS and the EU Pilot Regime are expected to have applicants with a T+0 settlement or quicker (real-time) as standard.[20]

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[9] https://www.forbes.com/sites/davidbirch/2023/03/01/larry-fink-says-tokens-are-the-next-generation-for-markets/
[10] https://www.theia.org/sites/default/files/2023-11/UK%20Fund%20Tokenisation%20-%20A%20Blueprint%20for%20Implementation.pdf
[11] https://www.mas.gov.sg/news/media-releases/2023/mas-partners-financial-industry-to-expand-asset-tokenisation-initiatives
[12] https://www.theia.org/sites/default/files/2023-11/UK%20Fund%20Tokenisation%20-%20A%20Blueprint%20for%20Implementation.pdf
[13] https://www.flowtraders.com/news/dws-flow-traders-and-galaxy-announce-the-intention-to-launch-allunity/
[14] https://digital-strategy.ec.europa.eu/en/policies/media-and-digital-culture
[15] https://www.sec.gov/files/2024-exam-priorities.pdf
[16] https://assets.publishing.service.gov.uk/media/655c893ed03a8d001207fda1/M8298_Draft_response_to_DSS_consultation_final.pdf
[17] https://www.esma.europa.eu/press-news/esma-news/esma-publishes-report-dlt-pilot-regime
[18] https://www.theia.org/sites/default/files/2023-11/UK%20Fund%20Tokenisation%20-%20A%20Blueprint%20for%20Implementation.pdf
[19] https://www.esma.europa.eu/press-news/consultations/call-evidence-shortening-settlement-cycle
[20] https://www.theia.org/sites/default/files/2023-11/UK%20Fund%20Tokenisation%20-%20A%20Blueprint%20for%20Implementation.pdf
[21] https://www.sec.gov/files/2024-exam-priorities.pdf

2024: The Year of Regulatory Reviews

The SEC priorities read as a review of most market participants compliance with regulatory obligations, from National Securities Exchanges to Clearing Houses and Transfer Agents.[21] The SEC is reviewing FINRA's implementation of investor protection initiatives and the Municipal Securities Rulemaking Board (MSRB) regulation of broker-dealers and municipal advisors and Security-Based Swap Dealers—again covering accurate reporting, and adherence to capital, margin, and segregation requirements.[22]

Along with the latest changes proposed to MiFID and MiFIR,[23] the European review is moving onto the enforcers of participants, with ESMA reviewing Member State National Competent Authorities[24] Christine Lagarde is advocating giving the European regulator the same powers as the US SEC[25] to focus on market and risk monitoring and improving investor protection as capital markets undergo the digital and sustainability transitions under MiCA[26] and the Digital Operational Resilience Act (DORA).[27] Sustainable Finance remains at the fore with new European Green Bond Regulation[28] and ESMA's final report on proposals to tackle greenwashing.[29] Non-financial as well as financial data will be brought into scope under new technical standards for the European Single Access Point (ESAP)[30] along with the introduction of a Consolidated Tape for Equities and ETFs[31] (finally!). There will be reviews of the Alternative Investment Fund Managers (AIFMD), Undertakings for Collective Investment in Transferable Securities (UCITS) Directives, and the Central Securities Depositories Regulation (CSDR).[32] Ongoing reviews of the European Market Infrastructure Regulation (EMIR) as well as the new Listing Act may also lead to further mandates for ESMA in 2024.[33] To top all of this is the focus on CMU.3 to enhance retail involvement in the European recovery.[34] Meeting this level of regulation will be challenging further still given the new Parliament[35] and Commission following elections in June.[36]

The UK FCA remains heavily focussed on improving UK Capital Markets post-Brexit. The Wholesale Markets Review and Edinburgh Reforms will remain front and centre through 2024 to ensure enhanced consumer protection, promotion of the integrity of the UK financial system and UK Capital Markets as a global leader.

For market participants, the key areas to watch are:

1. US T+1 moving from a settlements debate to one of funding, fund structure and cash management

2. Market outages and market resiliency

3. The rising impact from use of technology - particularly testing, controls, and the potential for systemic risk from AI innovation.

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1. **T+1**

   The debate of the move to T+1 in the US has focussed—rightly—on better trade automation and the interconnectedness of global markets within a shorter timeframe. Some firms have opted to move trading and settlement to the US which resolves part of the issue—but doesn't solve for all the challenges. **2024 will be when firms recognise the US move to T+1 is as much related to the funding of an investment as one of settling a trade.** Improvements will need to be made across the full investment life cycle. This will cover standardisation of allocations, confirmations, and affirmations for all asset classes; the ability to access accurate reference data instantly; management of multiple market settlement and cash management cycles; Fund subscription, allocation, and redemption; and automation of asset servicing—securities lending and repo, corporate actions, and income distribution. This is not just a question of moving settlements forward 24 hours, but one which will require a sea-change in how markets operate from retail fund and subscription to central bank settlement. Verena Ross recently posed the question as to whether it is now time for fund subscription and redemptions to be aligned with the markets in which they operate.[37]

[21] https://www.sec.gov/files/2024-exam-priorities.pdf
[22] https://www.sec.gov/files/2024-exam-priorities.pdf
[23] https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733546/EPRS_BRI(2022)733546_EN.pdf
[24] https://www.esma.europa.eu/sites/default/files/2023-09/ESMA22-50751485-1368_-_2024_Annual_Work_Programme.pdf
[25] https://www.ft.com/content/acfc67d9-7f2a-4199-9c79-405fef9cb195
[26] https://www.esma.europa.eu/esmas-activities/digital-finance-and-innovation/markets-crypto-assets-regulation-mica
[27] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0595
[28] https://www.consilium.europa.eu/en/press/press-releases/2023/10/24/european-green-bonds-council-adopts-new-regulation-to-promote-sustainable-finance/
[29] https://www.esma.europa.eu/sites/default/files/2023-12/ESMA50-524821-3072_TRV_Article_The_financial_impact_of_greenwashing_controversies.pdf
[30] https://www.esma.europa.eu/press-news/consultations/consultation-implementing-technical-standards-ESAP
[31] https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733546/EPRS_BRI(2022)733546_EN.pdf
[32] https://www.europarl.europa.eu/legislative-train/spotlight-JD21/file-aifmd-and-ucitsd-amendments
[33] https://www.esma.europa.eu/sites/default/files/2023-09/ESMA22-50751485-1368_-_2024_Annual_Work_Programme.pdf
[34] https://www.consilium.europa.eu/en/policies/capital-markets-union/
[35] https://multimedia.europarl.europa.eu/en/topic/european-elections-2024_23001
[36] https://elections.europa.eu/en/
[37] https://www.esma.europa.eu/sites/default/files/2023-11/ESMA34-44599010-313_Verena_Ross_speech_EFAMA_Investment_Management_Forum.pdf

2. **Market Outages and Resiliency**
   All regulators are focused on the prevention of market disruptions and need to protect investor information but with the UK primary exchange experiencing a second outage,[38] the urgency in addressing this issue is highlighted. The rise in reliance on third party firms and cloud technology, together with greater automation across all asset classes adds to the scope of individual firms' collective responsibility. The industry is only as strong as its weakest link. **2024 will not only represent greater regulatory scrutiny of compliance, risks, and controls as well as technology interoperability, but individual responsibility in making the eco-system function optimally**. Rising awareness of cyber-attacks and the threat of consumer data being compromised will highlight fiduciary duty and anti-money laundering considerations. With all regulators hiring data analytics, scientists, and synthetic data experts to support the shift towards being data-led, the industry can expect greater scrutiny in how data is used, what is reported and how.

3. **AI in trading becoming reality.**
   The recent report of an AI bot opting to trade knowingly using unlawful insider trading[39] has led to concerns regarding widespread use of a yet unknown capability in capital markets. But there are important considerations to consider in how AI is being used in practice—what is reality vs. what is marketing hype, along with what individual firms' responsibilities are when both using new technology and what they share with their customers. This covers:

   - Execution of algos in the market with market microstructure and data requirements; and
   - Overseer level of inventory and risk exposure - where in areas of higher risk, AI could prevent trading.

In the first instance this will lead to **greater regulatory oversight on algo controls and usage** (RTS 6 and 7[40] in particular) but it will also highlight key distinctions in previous regulation as to **where the decision to execute has been made by an individual vs. technology** (Stock selection, Investment Guidance, Trading Venue Perimeter). Then the risks of market manipulation, misinformation through deepfakes, convergence of third-party AI models and the amplification of flash crashes or market disruptions. The industry can anticipate nearly all regulation having to be reconsidered post the introduction of AI. Regulatory focus is not just on secondary markets but all the important question of how to invigorate capital markets: CMU.3 in Europe: the UK's new listings regime and return to rebundling; along with asset managers continued shift into private listings. As individuals are required to take greater ownership of their financial futures, all regulators will continue to consult on proposals for improvements to investment advice for mass market consumers who may not yet have the financial knowledge needed for today's markets. Particularly not those powered by AI.

As so often with significant change, the start of change slips by relatively unnoticed. Regulatory reviews and the US move to T+1 will dominate the agenda in the immediate term. But the longer-term shift to digital assets is emerging with greater clarity. The digitalisation of financial services brings with it a host of issues which require solutions to tackle perceived harms and to strengthen oversight and control. Managing the digital transformation will be a delicate balance between national security considerations, the influence of tech companies and the need to deliver for domestic consumers. With the largest number of world citizens voting in the history of democracy in 2024[41]—geopolitics will undoubtedly influence the outcome. What will that mean for equity market structure only time will tell, but for more thoughts on what we can expect this year, watch this.

[38] https://www.ft.com/content/4ae3a7f0-e181-47af-8f86-b6200781f141
[39] https://www.bbc.com/news/technology-67302788
[40] https://www.esma.europa.eu/sites/default/files/2023-09/ESMA22-50751485-1368_-_2024_Annual_Work_Programme.pdf
[41] https://www.economist.com/interactive/the-world-ahead/2023/11/13/2024-is-the-biggest-election-year-in-history

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