Listed Derivatives Review

2022 Trading Volumes and Notable Trends

January 11, 2023

Liquidnet

Contents

2022 Exchange Activity Highlights

Listed Derivatives Post Record Volumes

Global listed derivative volumes tracked by Liquidnet in 2022 amounted to ~71.1 billion contracts, an increase of 47.7% versus 2021[1]. Total exchanged contract notional in global futures markets edged up 3.6% to USD 1.14 quadrillion equivalent. As ever, the detail behind the headlines reveals widely diverging stories as we move across asset classes and regions.

Volumes

2022 brought about a significant mode change as much of the world exited pandemic era restrictions and began to contend with the ensuing fiscal and inflationary fall-out. The year saw monetary tightening from every major central bank, led by a determined Fed who delivered seven target rate increases totaling 425bp in addition to beginning the process of shrinking its balance sheet. The rear was brought up by the Bank of Japan who, by an adjustment to their yield curve control mechanism in late December, raised the implicit cap on 10-year JGB yields by 25bp to 0.50%.

War in Ukraine and the associated disruptions in food and energy supply lines added another layer of complexity to other lingering pandemic effects such as extended restrictions in China. In aggregate these factors disrupted hopes for a base-effect driven inflation soft landing.

The imposition of sanctions on Russian venues in the Spring saw activity on the Moscow Exchange decimated. As a result the listed derivatives volumes that we track for the CEEC region were down over 50% versus 2021.

With all that said, it is important to take a quick look at India as a critical explanatory factor of global headline listed derivatives volume growth. As was the case last year, options trading on the NSE's NIFTY 50 and NIFTY Banks Indices accounted for a staggering proportion of global volume growth. These two contracts alone delivered 20.2 billion contracts of the absolute growth of 22.5 billion contracts exchanged globally in 2022. It is worth highlighting that global volume growth, ex-India, is therefore a more modest 7.0% for 2022 compared with 2021. Global futures volumes, ex-India, were down 4.2% overall for the year whilst options volumes, ex-India, were up a very healthy 29.3% versus 2021.

Figure 1
Listed Derivatives Growth: 2022 vs. 2021

Region	North America	LatAm	EMEA	CEEC	China	India	APAC	Totals
Rates and FX	19.05%	7.5%	23.81%	-26.8%	54.8%	47.0%	14.3%	18.5%
Commodities	-0.8%	11.7%	-17.7%	-81.9%	-12.7%	21.4%	14.4%	-16.1%
Eq. Index / ETF	49.2%	9.0%	13.3%	-44.9%	1.8%	152.2%	9.9%	74.1%
Totals	**31.9%**	**8.8%**	**9.3%**	**-50.4%**	**-10.0%**	**137.8%**	**10.6%**	**47.7%**

Source: Bloomberg, Liquidnet

Futures USD Notional Equivalent

Looking at the futures data in USD notional equivalent terms once again reveals the astonishing dominance of CME, ICE, and Eurex. Whilst the three 'majors' take an impressive 36 of the top 50 places in our global rankings, they represent an even greater, 89% of the traded notional in the top 50. In fact Liquidnet estimates that, at approximately USD 906 trillion, 81.5% of the entire value of global exchanged USD notional equivalent in 2022 was concentrated into these three exchange groups.

In a year that saw tremendous volatility in asset and foreign exchange prices, equity and commodity futures underwent substantial underlying price movement. This served to underline the importance of looking at exchanged notional as well as simply the number of contracts traded. An excellent example came in the European energy markets in 2022. ICE Endex Dutch TTF Natural Gas futures saw a volume decline of 5.3% on the year. However, Liquidnet's analysis highlights that the USD value of those contracts grew by almost 150% in 2022 versus 2021 bringing the contract into the Top 50 in the Liquidnet global ranking for the first time ever.

[1] Liquidnet tracks ~2,500 contracts across 75 exchanges. For the purposes of this report we exclude all single stock options.

Figure 2

2022 Global Top 50 Futures Contracts by Traded Notional in USD Equivalent[2]

Rank	Contract Name	Exchange	Volume (USD Notional)	Change (%)	Change (Rank)
1	3 MONTH SOFR FUT	Chicago Mercantile Exchange	105,995,487,019,856	1116.8%	↑ 29
2	S&P500 EMINI FUT	Chicago Mercantile Exchange	105,838,091,033,610	21.1%	→ 0
3	90DAY EURO$ FUTR	Chicago Mercantile Exchange	99,493,067,614,512	-37.0%	↓ -2
4	3MO EURO EURIBOR	ICE Futures Europe Financials	74,668,997,314,822	34.0%	→ 0
5	US 10YR NOTE (CBT)	Chicago Board of Trade	57,246,472,398,162	-11.1%	↓ -2
6	NASDAQ 100 E-MINI	Chicago Mercantile Exchange	46,569,946,080,888	11.9%	→ 0
7	US 5YR NOTE (CBT)	Chicago Board of Trade	38,274,283,479,429	6.4%	→ 0
8	US 2YR NOTE (CBT)	Chicago Board of Trade	37,130,483,720,240	41.4%	→ 0
9	FED FUND 30DAY	Chicago Board of Trade	35,414,859,422,429	194.1%	↑ 9
10	EURO-BUND FUTURE	Eurex	35,080,051,216,252	-16.3%	↓ -5
11	ICE 3MTH SONIA FU	ICE Futures Europe Financials	22,326,279,976,943	89.9%	↑ 11
12	BRENT CRUDE FUTR	ICE Futures Europe Commoditie	21,989,732,597,990	34.9%	↑ 7
13	EURO-BOBL FUTURE	Eurex	21,193,186,876,430	5.4%	↓ -3
14	WTI CRUDE FUTURE	New York Mercantile Exchange	20,105,017,773,330	15.7%	↓ -2
15	MINI BOVESPA FUT	B3 Derivatives	17,803,540,369,246	-11.8%	↓ -6
16	90-DAY BANK BILL	ASX Trade24	16,169,823,492,674	0.8%	↓ -2
17	EURO-SCHATZ FUT	Eurex	16,116,024,096,110	42.6%	↑ 3
18	US LONG BOND(CBT)	Chicago Board of Trade	13,303,570,001,360	-26.3%	↓ -7
19	ONE-DAY BANK DEP	B3 Derivatives	11,356,356,127,266	-10.5%	↓ -2
20	US 10yr Ultra Fut	Chicago Board of Trade	12,080,269,031,040	-11.8%	↓ -5
21	EURO STOXX 50	Eurex	11,258,991,843,114	5.3%	↑ 2
22	GOLD 100 OZ FUTR	Commodity Exchange, Inc.	10,676,457,431,740	-7.1%	↑ 2
23	1 MONTH SOFR FUT	Chicago Mercantile Exchange	9,377,314,161,437	290.5%	↑ 41
24	US ULTRA BOND CBT	Chicago Board of Trade	9,146,997,198,380	-16.9%	↓ -3
25	NASD100 MICRO EMIN	Chicago Mercantile Exchange	9,137,430,269,541	33.7%	↑ 11
26	LONG GILT FUTURE	ICE Futures Europe Financials	9,116,563,230,593	-30.7%	↓ -10
27	Mini Dollar Futur	B3 Derivatives	8,631,071,540,000	5.4%	↑ 4
28	EURO FX CURR FUT	Chicago Mercantile Exchange	8,267,634,048,614	-3.1%	↑ 1
29	DJIA MINI e-CBOT	Chicago Board of Trade	8,141,154,730,365	9.1%	↑ 4
30	JPN 10Y BOND(OSE)	Osaka Exchange	8,125,471,159,765	-21.1%	↓ -5
31	Euro-OAT Future	Eurex	7,864,682,532,109	-22.0%	↓ -5
32	NIKKEI 225 (OSE)	Osaka Exchange	7,218,802,783,625	-23.9%	↓ -5
33	SP500 MIC EMIN FUT	Chicago Mercantile Exchange	6,907,179,111,762	49.7%	↑ 13
34	DAX INDEX FUTURE	Eurex	6,607,081,682,271	-13.5%	↓ -2
35	NY Harb ULSD Fut	New York Mercantile Exchange	6,014,985,830,003	73.5%	↑ 20
36	NATURAL GAS FUTR	New York Mercantile Exchange	5,716,931,323,280	50.3%	↑ 15
37	E-Mini Russ 2000	Chicago Mercantile Exchange	5,597,963,484,020	-3.4%	↑ 1
38	Euro-BTP Future	Eurex	5,579,414,166,672	-20.2%	↑ -4
39	Crude Oil Futures	Shanghai Intl Energy Exchange	5,578,941,919,604	85.5%	↑ 18
40	GASOLINE RBOB FUT	New York Mercantile Exchange	5,369,177,930,025	24.0%	↑ 6
41	Low Su Gasoil G	ICE Futures Europe Commoditie	5,155,623,917,850	34.7%	↑ 2
42	NIKKEI 225 MINI	Osaka Exchange	5,132,798,322,947	-4.0%	↑ -1
43	CSI 300 IDX FUTUR	China Financial Futures Exch.	4,861,388,821,551	-29.3%	↓ -9
44	TOPIX INDX FUTR	Osaka Exchange	4,854,897,007,822	-11.1%	↓ -4
45	CSI500 IDX Future	China Financial Futures Exch.	4,783,946,050,830	2.4%	→ 0
46	HANG SENG IDX FUT	Hong Kong Futures Exchange	4,703,798,070,196	-20.7%	↓ -8
47	AUST 3YR BOND FUT	ASX Trade24	4,461,550,800,448	-6.4%	↓ -4
48	TAIEX FUTURES	Taiwan Futures Exchange	4,439,199,404,924	-14.5%	↓ -6
49	SOYBEAN FUTURE	Chicago Board of Trade	4,129,354,565,388	9.1%	↑ 5
50	TTF NAT GAS F	ICE Endex	4,033,736,978,329	144.1%	↑ 24

Source: Bloomberg, Liquidnet

[2] Rankings are calculated by Liquidnet according to an estimate of contract notional in USD equivalent at the point of trade defined as: the sum for the year of daily volume x daily notional value (based on daily settlement) x daily local currency adjustment versus USD (based on daily last FX price published by Bloomberg).

War, Inflation, and Disease: Central Banks Change Course

Bond markets began an epic sell-off in 2022. What started as concern around policy error soon developed into a more existential threat as consecutive events conspired to shake investors' belief in the omnipotence of Central Banks.

Although short end rates had jittered in Q4 of 2021, expressing concern at official commentary related to the transitory nature of elevated inflation, treasuries began a truly broad-based rout with the advent of 2022. The 10-Year note opening print of 1.53% on January 3 proved to be the low for the year with a high print of 4.34% recorded on October 21. Yet even this 280bp range for the year was dwarfed by the US 2-Year note which saw a high-low range of 405bp for the year.

Figure 3

In 2022 Benchmark Treasury Tenors saw their largest trading ranges in over 30 years

2-, 5-, 10- and 30-Year Treasuries High-Low Annual Range in basis points 1998 – 2022

Source: Bloomberg, Liquidnet

In aggregate CME Treasury futures volumes recorded growth of 7.9% for the year whilst the volume of Treasury options contracts traded jumped 15.4%. As would be expected in the context of an active Fed, the shorter tenor contracts were responsible for the majority of the year-on-year gains. 2-Year note futures and options volumes leapt by 48% and 5-Year note futures and options by 17.5%. Meanwhile 10s, Ultra 10s, Bonds, and Ultra Bonds recorded a combined flat performance versus 2021. The six active treasury contracts all make the top 25 of the Liquidnet global contract rankings estimate. In total they accounted for USD 160 trillion of exchanged notional in 2022.

Relative liquidity across contracts is changing as ranges expand

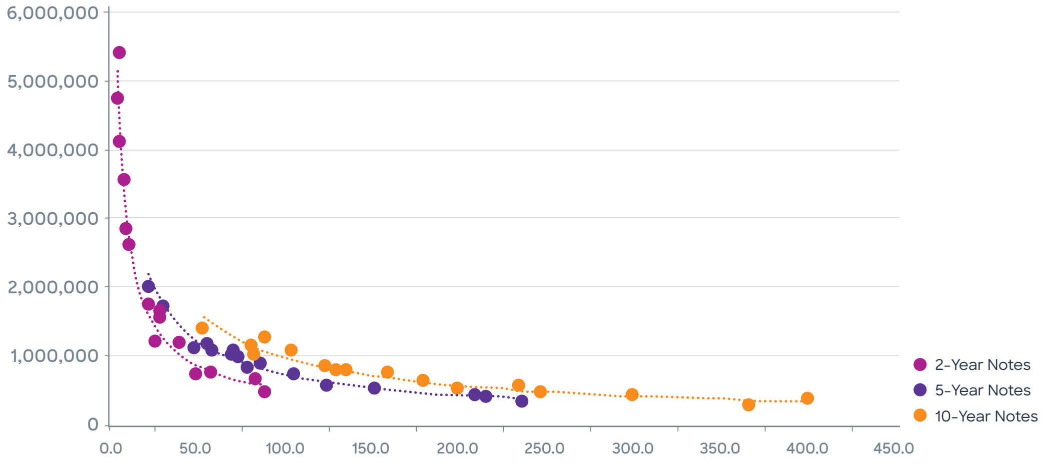
The growth in headline treasury futures volumes points clearly to the ongoing success of these contract but it is also worth pointing out that when trading ranges are expanding much more quickly than volumes, there are knock-on consequences for liquidity. One way to think about liquidity is to divide the volume traded in each period by the range of prices in that period. Intuitively, as the range expands for a given volume it must be trading fewer contracts at each price.

In the chart below we compare these volumes stretched across the range for each of the 16 quarters in the years 2019 – 2022. The decline in liquidity in 2-Year notes by this measure as the trading ranges increase is dramatic relative to the 5-Year and 10-Year notes.

Figure 4

A highly active Fed triggered much bigger relative declines in liquidity in 2-Year notes than the longer tenors

Scatter Plot of Quarterly Trading Range vs. Average Volume Traded at Each Price in that Range (2019 – 2022)



Source: Bloomberg, Liquidnet

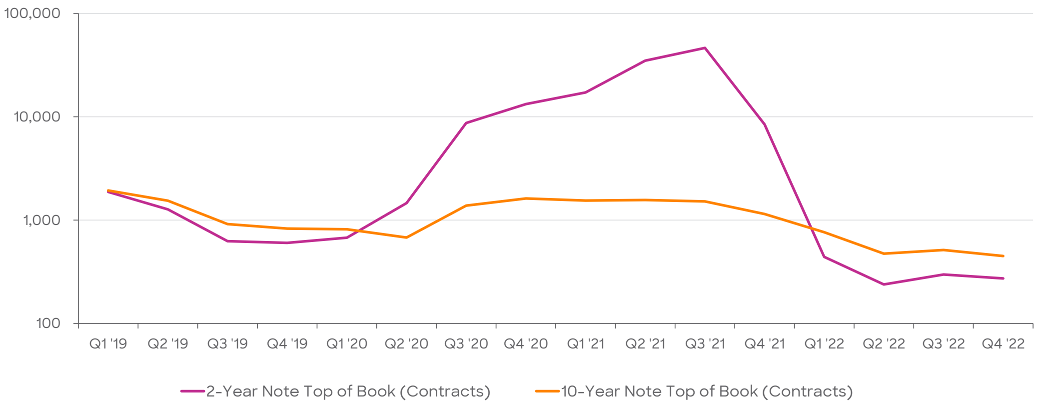
Top of Book Volume Declines

We can also think about liquidity from a "top of book" perspective. In the chart below we show the average top of book size ((bid size + ask size) / 2) for 2-Year Notes and 10-Year Notes for each of the 16 quarters from 2019 – 2022. The relative ascent and subsequent decline in 2-Year liquidity was very evident as we moved away from record low rates and the record tight trading range of just 13bp for the rolling year ended in September 2021.

Figure 5

Despite the precipitous decline in top of book orders in 2021 and notwithstanding the 47% jump in volumes for the year, average touch liquidity in 2-Year notes fell a further 38% through the course of 2022 from 441 contracts in Q1 to just 272 contracts in Q4.

CME US 2-Year Notes: 'Touch' or 'Top of Book' Liquidity 2019 – 2022



Source: BMLL Technologies, Liquidnet

ICE Financials Europe's Long Gilt futures suffered an ignominious 2022

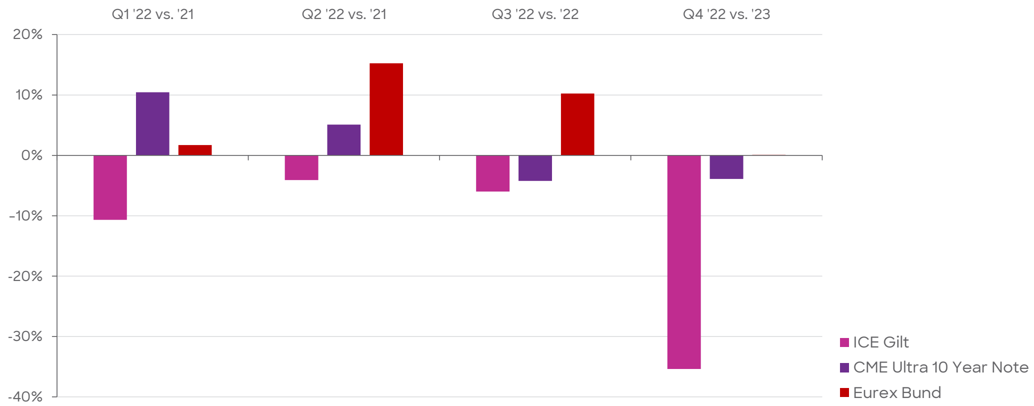
Whilst the general drop in touch liquidity in US bond markets was wholly explainable as a function of range and volatility, and did nothing to damage volumes, the Gilt market suffered a much more serious setback in 2022.

Gilt futures and options volumes fell 14.3% for the year. To highlight just how poor an outcome this was, we compare annual quarter-over-quarter volume growth in the closest equivalent US and European contracts, CME Ultra 10s (+2.2% in 2022) and Eurex Bunds (+6.3%). Q4 of 2022 marked a historic drop in volumes.

Figure 6

ICE Long Gilt futures saw consecutive quarterly volume declines vs. 2021

But Q4 saw the largest Quarterly YoY decline in Gilt volumes for 22 years



Source: Bloomberg, Liquidnet

The Bank of England continued to fumble its communications with the market in 2022 (recall the consecutive surprises in November and December 2021 that marked the inception of this poor run), yet it turned out to be a fiscal clanger that sealed the fate for the contract for the year. Britain's shortest serving prime minister ever, Liz Truss, initiated a series of unfunded spending measures and tax cuts that simply left markets aghast. With the BoE having hiked just 50bp on September 22 (the day after a more impressive Fed hike of 75bp) and a highly regarded Treasury civil servant having departed under criticism from the new PM as being overly "orthodox," the timing of these policy measures could not have been worse.

Friday, September 23, 2022 saw the ICE Long Gilt future record its largest ever one-day price drop of 3.15 big figures. With the government in disarray over the weekend, Gilts set yet another record fall on the Monday re-open of 3.25 big figures. By the close on September 27, Long Gilts had delivered a record three-day fall of 9.28 big figures and a record 10-day fall of 12.5 big figures.

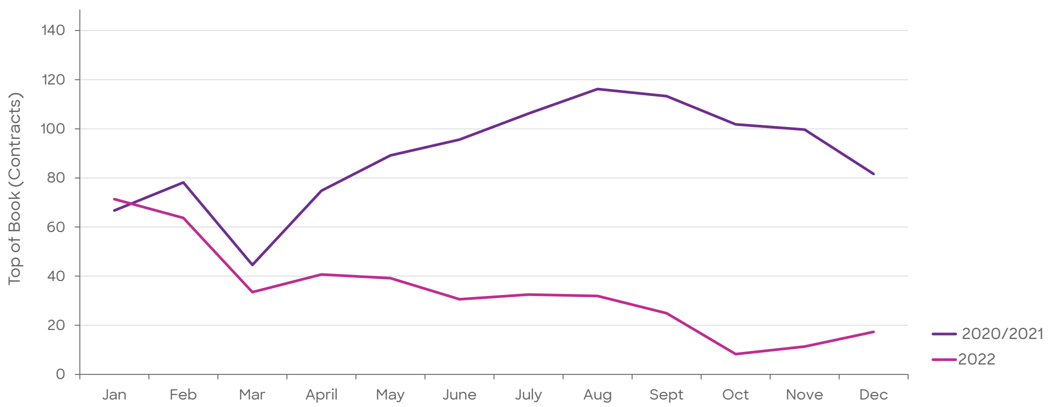
Whereas the CME 2-Year note experienced "good" volatility, the ICE Long Gilt had very definitely experienced "bad" volatility. September's record (non-roll month) volumes for the year came at massive cost as liquidity collapsed and Q4 volumes cratered by more than 35% versus the same quarter in 2021. The initial rout subsided on September 28 with intervention from the Bank following warnings that LDI selling could completely overwhelm the market and in turn create a catastrophic spiral of collateral driven unwinds.

These sobering events left a lasting imprint on liquidity.

Figure 7

ICE Long Gilt Average Touch Liquidity fell to a low of just 8.2 contracts in October 2022.

Monthly evolution of Top of Book order size in 2022



Source: BMLL Technologies, Liquidnet

European Bond Futures and Options

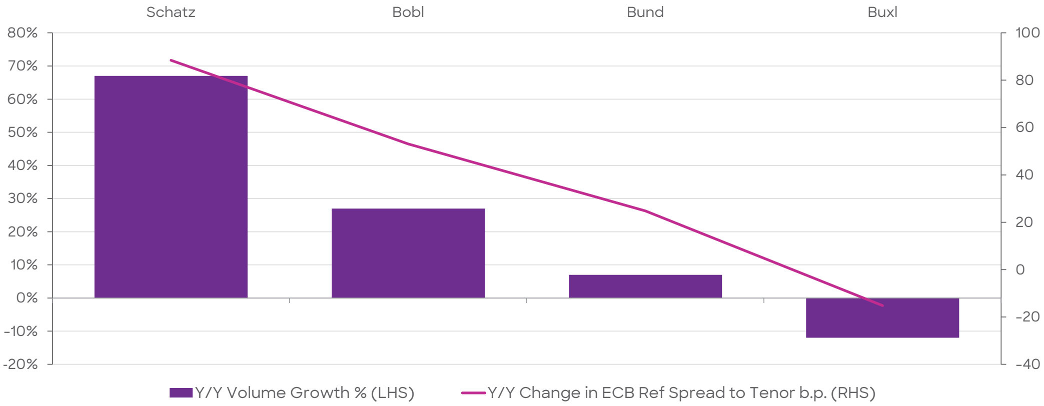
The uncertainty triggered by the February 24 invasion of Ukraine triggered a sharp move lower in Bund futures as investors sought safe repose in either shorter duration assets or US Treasuries. As a result, German 2s/10s began a steepening move that found further sustenance from ongoing dovish ECB commentary in the face of building global inflation pressures, a weakening Euro and a Fed that by contrast was preparing the market for its first rate hike of the cycle. A full three months after the first Fed hike in March, the ECB finally took action; raising rates in June for the first time in 11 years. This was a spectacular macro rates trading backdrop for active Eurex traders.

In aggregate, Bond futures and options volumes at Eurex grew 21%, generating an aggregate pick up of 125.6 million contracts versus 2021. As would be expected in an active ECB environment, the shorter Schatz and Bobl contracts delivered the lion's share of growth. It is worth noting that when participants are trading curve, the flat EUR 100,000 nominal across all Eurex bond futures requires more short contracts to be traded for any given quantity of longer contracts. For example, a buyer of Schatz versus Bunds would trade in a ratio of approximately 6 Schatz contracts to 1 Bund contract. Schatz futures volumes posted 66.7% growth versus 2021 compared with Bunds which managed a still impressive 6.3%. By logical extension, the very back end of the curve saw a decline, with Buxl volumes dropping 12.3%.

The globally aligned inflation theme meant that short end outperformance in terms of volume growth held true across bond futures on all developed market exchanges including Australia's ASX24, Korea's KFE, and Canada's Montreal Exchange. Bond futures and options globally added 235 million contracts to the 2021 tally, with tenors of five years and below the predominant driver of growth.

Figure 8

Eurex example: Volume growth by tenor a function of the respective shift in rate relative to the CB target rate



Source: Bloomberg, Liquidnet

STIR Markets Light Up But Growth Was Very Uneven

Uncertainty related to the rate re-referencing process took a step to the side as outright rates ripped higher

The tremors leading up to a very active 2022 became evident in the backend of 2021 with the Norges Bank rate hike in September 2021, the Bank of England's first hike in December 2021 and the Federal Reserve's change in its assessment of inflation risks and subsequent upward shift in the December 2021 "dots" release. The stage was thereby set for a stellar 2022 for STIR markets. Trading in STIR futures and options across the globe climbed by 24.7% to 2.41 billion contracts. The CME 3-Month SOFR contract leapt 29 places in the Liquidnet global rankings estimate to take the crown (by a tiny margin) as the largest futures contract in the world by USD Notional. However, the outstanding performance for 2022 goes to ICE Financials Euribor contract which racked up 51.4% futures volume growth, taking total lots to an all-time record of 282.7 million for the year. The Euribor options market also sputtered back to life, adding 52 million contracts for a 570% year-over-year jump.

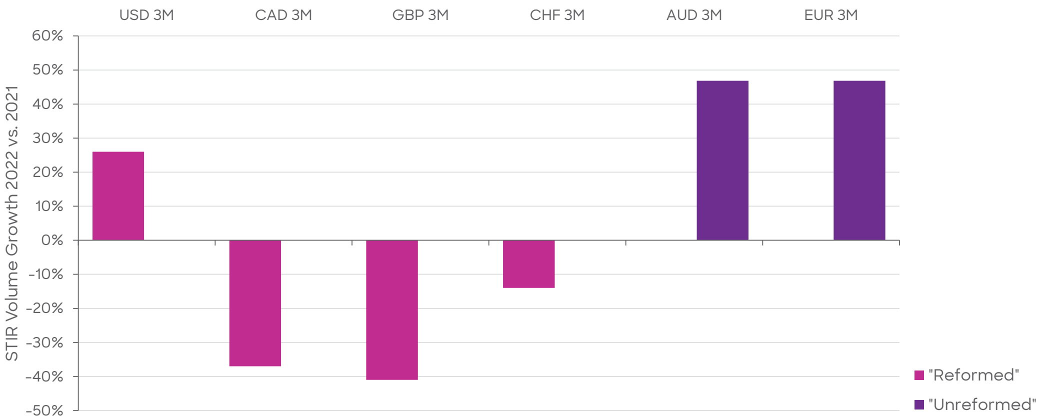
By the time the Fed delivered its first hike in March, it was also more than a year since the UK FCA's announcement on the loss of representativeness of LIBOR rates which had in turn triggered the determination of the fixed spread adjustments by which fallback rates would be calculated. As a result, CME 3M SOFR linked futures open interest was already well ahead of the legacy 3M Libor linked Eurodollar futures and with each IMM expiry in 2022 another tranche of legacy reference rate trading opportunity disappeared. Whilst the increasing concentration of activity in SOFR linked futures through the course of 2022 brought dominance for CME's 3-Month SOFR futures by year end, progress elsewhere was more rapid. The accelerated cessation calendar for CHF and GBP Libor had seen the retirement of ICE Financials Europe's Short Sterling and Euroswiss contracts at the end of 2021 meaning that 3-Month SONIA and 3-Month SARON futures were fully incumbent from the first day of 2022.

To try to make a meaningful like-for-like comparison between the pre and post re-referencing volumes, we aggregate 3-Month SFR and 3-Month Eurodollars as a single USD 3 Month STIR Block[3]. We then repeat the process for Short Sterling (adjusted)[4] and 3-Months SONIA Index for a single GBP 3-Month STIR block, Euroswiss and 3-Month SARON Index for a single 3-Month CHF block and finally Canadian BAX futures and 3M CORRA Futures for a single CAD 3-Month STIR block. The table restates 2022 growth based on the evolution of the aggregate volumes by currency.

Whilst a 26% year on year uptick for the USD 3-Month "block" measured in this way would normally be viewed as a strong outcome we'll admit to being slightly surprised that, as go-to instruments for the global macro inflation trade in 2022, it wasn't even better and that they underperformed Euribor and Aussie to the extent they did. One thing that sets Euribor and Aussie 90 Day Bills apart? They still reference "unreformed" benchmark, credit sensitive rates. It will be interesting to see the extent to which SFR volumes slow once the macro backdrop has stabilized. Alongside, SONIA, SARON, CORRA (and soon ESTR) linked listed derivatives, we may already be seeing the early clues as to the diminished utility of an RFR-based STIR contract.

Figure 9

Aggregated Year-over-Year Volume Growth in 2022 was notably higher in the "unreformed" STIR contracts



Source: Bloomberg, Liquidnet

The CME transition process from 3-Month Eurodollar Futures to 3-Month SOFR Index Futures will be complete with the expiry of the June '23 Eurodollar contract on June 19, 2023. Do note, however, that CME has amended its Eurodollar futures and options fallback rules to set the conversion date to April 14,2023 for contracts or options on contracts expiring into the September 2023 Eurodollar Contract and beyond[5]. Futures positions will be converted by adding the ISDA fallback spread of 26.161 bps to final Eurodollar futures settlement prices (at which the Eurodollar contract will also be closed out), creating an onset price for the new positions in 3-Month SOFR futures. Options will also be converted by adding the same fallback spread adjustment to create a nominal non-standard strike in SOFR, whilst moving the actual position to the SOFR strike that is 25 bps higher. A zero-sum-amongst-longs-and-shorts premium adjustment will then be made to establish the onset prices for the new positions.

[3] For the USD 3m block we also subtract the volume traded in the SFR-ED inter contract spread in 2021 and 2022.
[4] For the GBP 3m block the 2021 volumes in Short Sterling are halved; this recognizes the GBP500,000 contract size in Short Sterling compared with GBP1,000,000 for SONIA. The year over year change is therefore shown in SONIA contract equivalents.
[5] https://www.cmegroup.com/articles/files/2022/eurodollar-fallbacks-implementation-plan.pdf
[6] https://www.m-x.ca/en/resources/notices/advisory-notices?id=30

Euribor is still at the outset of its transition process, with the first step having been the transition from EONIA to the nominated RFR benchmark, ESTR. Whilst CME Group has already launched a 3-Month ESTR contract settling to the compounded daily rate in a similar manner to its SOFR futures, ICE has so far only announced a one-month contract based on the arithmetic average of the daily ESTR rates for the delivery month. In November, Eurex confirmed it would also launch a 3-Month ESTR contract starting January 23.

In Canada we are likely to see 3-Month Corra Futures volumes ramping up in H1 2023 as Canadian banks become subject to a requirement to benchmark to CORRA from January 9 for linear derivatives, and from March 27 for non-linear derivatives. To support the transition and contract growth, TMX Group (Montreal Exchange) have already announced the launch of market making incentive schemes. The exchange has also announced the launch of a new 1M CORRA contract based on the compounded daily CORRA for the respective delivery month on January 23[6].

Finally in Japan, in a potentially timely move given the recent need for the BoJ to release some pressure from its yield curve control band, TFX have announced the launch of a 3-Month TONAR contract for launch in March 2023. TFX is the venue for the incumbent, but now lifeless, 3-Month Euroyen contract so may have an edge in attracting activity in the new RFR contract. Nonetheless, the Osaka Exchange (home to the long successful 10-year JGB contract) has also announced it will launch a competing 3-Month TONA future that will list in May.

Australia remains confident in the integrity of the Bank Bill Swap Rate (BBSW) administered by ASX Benchmarks which is viewed compliant with IOSCO Principles for Financial Benchmarks. As such it seems unlikely that there will be any demand for an AONIA futures contract.

The Equity Retail Army Delivers (Again) in 2022

India and Brazil

The last three years have seen extraordinary growth in the retail trading theme. Perhaps nowhere has the surge in retail activity been more pronounced than in the prior-mentioned Nifty 50 and Nifty Banks Index options. We quoted Fortune India magazine last year who commented on a "SENSEX trading frenzy spawning Options Warriors"[7]. Even that level of hyperbole did not mark the end of the run, with the contracts growing 154% and 137% respectively in 2022. Brazil's B3 which led the retail charge in 2020 and to a lesser extent in 2021[8], finally saw a significant slowdown in volumes as the heavily retail-traded Mini Bovespa Index Future recorded a loss of 0.5 billion contracts for the year. The volume decline of 10.7% was somewhat neutralized at a USD notional equivalent level by the strengthening BRL in a busy Q1, but this effect was overwhelmed by the subsequent decline in the index meaning that B3 saw its sole member of the Liquidnet Top 10 drop out in 2022.

US

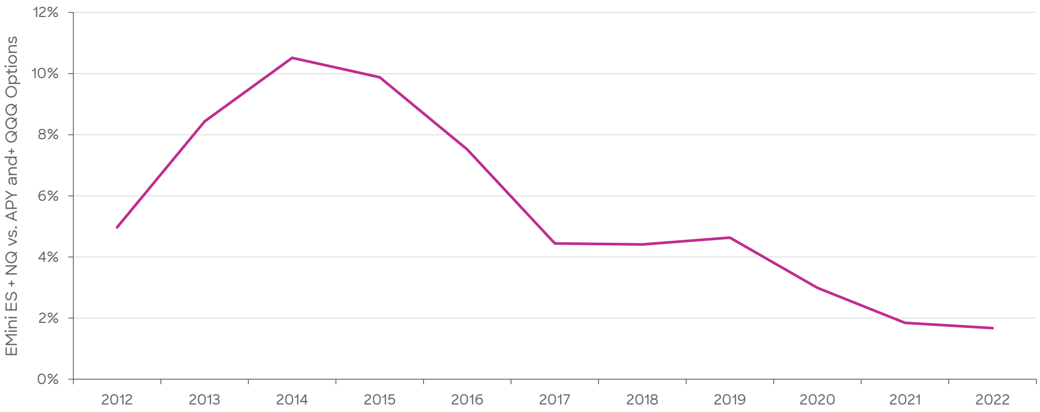
In developed markets the picture for US indices was strongly positive even accounting for the decline in contract values. CME's bellwether EMini S&P futures contact made a 503 million contract, 11 year high, growth of 24.9% versus 2021. EMini Nasdaq futures posted an equally impressive 26%. Options on EMini S&P and EMini Nasdaq futures notched up volume increases of 50% and 96% respectively but in aggregate lost ground to the their ETF (SPY and QQQ) option equivalents for the third year in a row. SPY Options smashed 2021's 1.13 billion contract record by 61% to make an all time record total of 1.82 billion contracts exchanged. QQQ ETF Options did even better, with a record 662 million contracts taking the year-over-year to 92%.

[7] Fortune India, September 6, 2021
[8] Gilson Finkelsztain, CEO B3 reported growth from 1.5 million to 4+ million retail accounts maintained at the exchange between 2019 and 2021. (WFE Interview, February 2022)

Figure 10

US Futures Index Options Grew in 2022 but continued to under-perform their ETF cousins

CME EMini and Emini Nasdaq Options as % of SPY and QQQ ETF Options Volumes



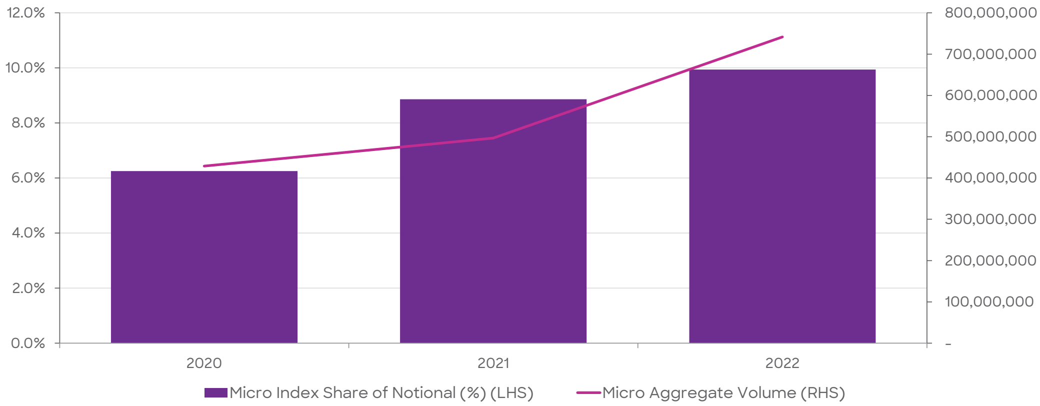
Source: Bloomberg, Liquidnet

Whilst out-performance by ETF options points to the ongoing robustness of retail activity in 2022, additional evidence also can be gleaned from the continued success of the CME's micro futures contracts. Micro Nasdaq, Micro S&P, and Micro Russell volumes, in aggregate, grew a remarkable 49.3% to 741.8 million contracts with yet another uptick in their share of the total CME USD notional in these indices (Micro EMini + EMini).

Figure 11

CME US Micro Index Futures Registered Record Volumes in 2022..

..and also gained another 1% share of CMEs total notional traded



Source: Bloomberg, Liquidnet

Figure 12

Global equity derivatives volumes performed strongly with obvious exceptions related to war and extended lockdowns

2022 vs. 2021 % Volume Growth by Equity Derivatives Class
(Single Stock Options are Excluded)

	North America	LatAm	EMEA	CEEC	China	India	APAC
Index Futures	38.7%	-10.7%	16.5%	-44.5%	2.5%	25.6%	15.4%
Index Futures Options	81.6%	217.4%	-13.4%	-60.5%			75.2%
Index Options	58.2%	14.7%	8.9%	-37.1%	4.4%	153.2%	4.5%
ETF Options	52.8%	27.7%	-12.5%		1.7%		6.6%
Totals	**49.2%**	**9.0%**	**13.3%**	**-44.9%**	**1.8%**	**152.2%**	**9.9%**

Elsewhere, as was the case for all derivatives markets, CEEC volumes across global equity derivatives classes were heavily impacted by sanctions related collapses in volumes on the Moscow Exchange. In China, whilst market volumes clearly lagged the global trend, equity derivatives generally did better than commodities. China's derivatives market in equities is dominated by ETF options (at least with respect to volumes) and as such it was testament to the resiliency of Chinese investors that the 10% decline in the largest ETF option, the China AMC SSE50 ETF was more than offset by the take-up in two new launches in 2022. EFund ChiNext and CSI500 Index ETF options between them added 46.8 million contracts to the China total. Whilst the 217% jump in LatAm Index Futures Options is eye-catching, note that the sector only accounts for three active contracts across Mexico, Brazil, and Argentina, that in aggregate account for just 38k contracts.

Commodities and ESG

Commodities: A mono-thematic macro backdrop drove very specific outcomes by region

Global commodities had a roller coaster ride in 2022. The mechanics of a commodities futures contract meant that there were dramatic swings in contract values as the war in Ukraine added to the ongoing re-wiring of global supply chains. Related markets for shipping and storage moved dramatically, particularly in energy, as balkanized pricing emerged as a result of sanctions. Evidence of the disruption in established trading routes showed up in futures volumes data.

At a headline level, volumes in commodity-based futures and options fell 13.3% versus 2021. In absolute terms that equated to global exchange losses of an aggregate 1.2 billion contracts. Again, it is worth noting the impact of the (sanctions hit) Moscow Exchange whose Brent Crude contract alone dropped 492 million contracts—almost a third of the losses in global commodity futures volumes. In China, the growth slowdown, sharply higher volatility and associated margin increases conspired to hit the heavily retail oriented commodities contracts on Dalian Commodity Exchange, Shanghai Futures Exchange, and Zhengzhou Commodity Exchange. Between them they accounted for another 797 million contracts lost from the global aggregate.

Stripping out China and Russia from the global total of 7.7 billion contracts takes commodities volumes down to a more modest 2.2 billion contracts but leaves a cleaner picture of the overall activity. Ex China and Russia, volumes grew 8% globally; futures by 4% and options by 47%.

Possibly the most interesting theme reflected in the volume data was in energy markets. The war in Ukraine saw significant changes in hedging patterns as well as changes to the contracts of choice for macro and proprietary trading accounts. A good example came in Crude Oil. Total futures and options volumes in ICE Futures Europe Brent Crude closed the year at 251.6 million contracts versus CME's NYMEX WTI tally of 234.5 million. This was the first time since 2014 that Brent Crude listed derivatives volumes traded in London had surpassed their New York relative; ICE Europe's Brent Crude became the largest commodity future in the world measured by exchanged notional value in USD.

With the premium that built up in Brent Crude following the outbreak of war in February 2022, and the heavy volumes transacted at these elevated levels in Brent, the USD Notional value of contracts exchanged on ICE Europe leapt ˜35% versus 2021. This compared with an ˜18% gain in the USD notional value exchanged in CME NYMEX WTI. In both instances, however, total futures and options volumes registered declines for the year (Brent -2.0% and WTI -15.1%).

By far the most impressive gains were delivered by the Shanghai International Energy Exchange's Crude Oil futures which saw 25.6% growth in volumes. There are institutionally sized, Yuan denominated, physically delivered oil contracts. These volumes equated to an ˜85% jump in the USD equivalent notional value exchanged, boosting the contract 18 places in our global rankings estimate—sufficient to give the benchmark Chinese Crude Futures contract a first Top 50 appearance. This achievement is all the more remarkable given that Shanghai Crude contract was only launched in April 2018.

The US/Europe theme was repeated in Natural Gas markets. Futures volumes in both CME NYMEX Henry Hub NatGas and ICE Endex Dutch TTF NatGas registered volume declines (-12.0% and -5.6% respectively). As a result of the massive price gains in gas markets, the decline in futures volumes masks the huge gains in the value of the underlying contracts. CME NYMEX NatGas saw a ~50% jump in the USD value of notional exchanged whilst the ICE Endex NatGas contract leapt by ~150% in terms of notional exchanged. (*Note: In the case of ICE Endex NatGas, our calculation of estimated USD notional equivalent may be less accurate than for the NYMEX contract. This is related to the extreme level of price spreads between the near contracts and far contracts in 2022 compared with 2021.*)

Figure 13

ESG Index Futures Volumes Stalled Relative to Broader Indices in 2022

Aggregate USD notional of the 10 largest contracts grew just 4.8%

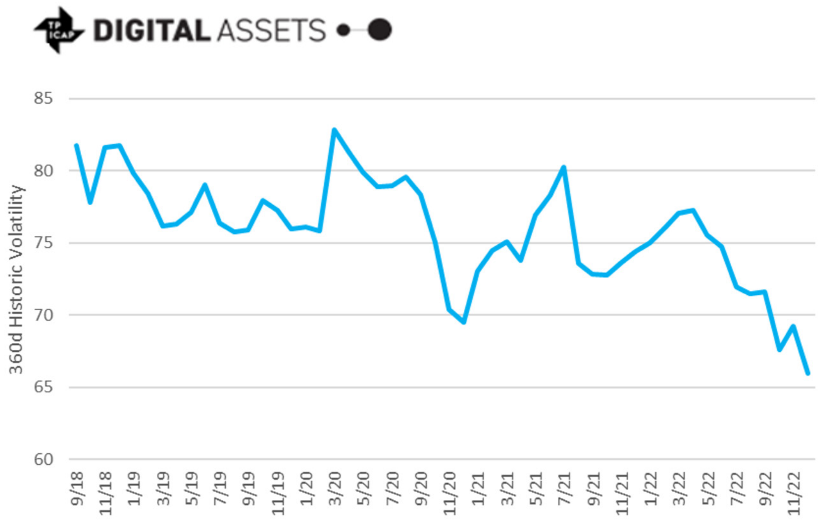
Rank	Exchange	Contract	Volume (USD Not. Equiv.)	Change (%)	Change (Rank)	Volume (Contracts)
1	Chicago Mercantile Exchange	E-mini S&P 500 ESG Index	$70,924,426,620	49.0%	→ 0	398,298
2	Eurex	Euro STOXX 600 ESG Index	$34,652,695,166	-15.8%	→ 0	2,029,792
3	OMX Nordic Exchange Stockholm	OMXS30 ESG Responsible Index	$29,558,305,293	-19.7%	→ 0	1,508,418
4	Eurex	MSCI USA ESG Screened USD NTR	$6,576,600,272	-8.6%	→ 0	169,676
5	Eurex	STOXX Europe ESG Leaders Select 30	$6,298,763,833	156.6%	↑ 4	478,346
6	ICE Futures US Indices	MSCI World ESG Leaders NTR Index	$3,722,369,160	7.0%	↑ 2	83,544
7	ICE Futures US Indices	MSCI EM ESG Leaders NTR Index	$3,382,240,002	-8.7%	→ 0	75,933
8	Eurex	MSCI EM ESG Screened USD NTR	$3,065,954,178	-45.5%	↓ -3	202,974
9	Eurex	EURO STOXX 50 ESG	$2,160,534,700	-57.1%	↓ -3	134,559
10	ICE Futures US Indices	MSCI USA ESG Leaders GTR Index	$574,291,940	33.5%	↑ 1	12,656
Totals			**$160,916,181,164**	**4.8%**		**5,094,196**

Crypto Futures are Growing Up..

Having scaled all-time highs in Q4 2021, Bitcoin recorded a 66% price decline through the course of 2022. The crypto narrative has always been heavily retail oriented and with the news flow in 2022 you'd be forgiven for thinking that the non-institutional sector of the market was all that mattered. The boom and bust in NFTs, "meme-coins," TikTok Crypto Influencers and various retail venues got plenty of airtime. However, what really stood out in the futures data from 2022, was growing evidence of the institutional activity in the "benchmark" CME Bitcoin Futures Contract.

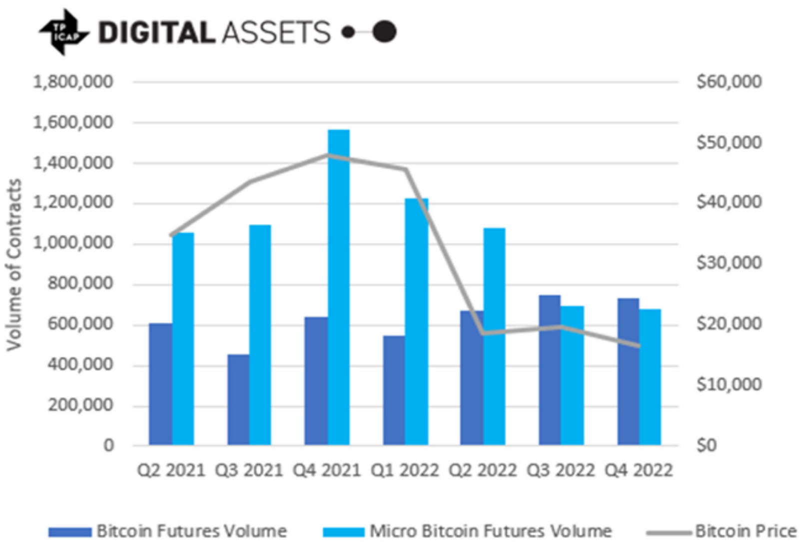
Data compiled by TP ICAP Digital Assets, points to three important features. Firstly, the ongoing decline in volatility in the CME contract. Secondly, the ongoing growth in Bitcoin futures volumes and the stark contrast of that trend relative to the retail sized CME Micro Bitcoin Futures Contract. Finally, the ongoing growth in the proportion of total volume that is transacted via exchange blocks.

Figure 14
CME Bitcoin Futures Historic Volatility has been in trend decline since inception



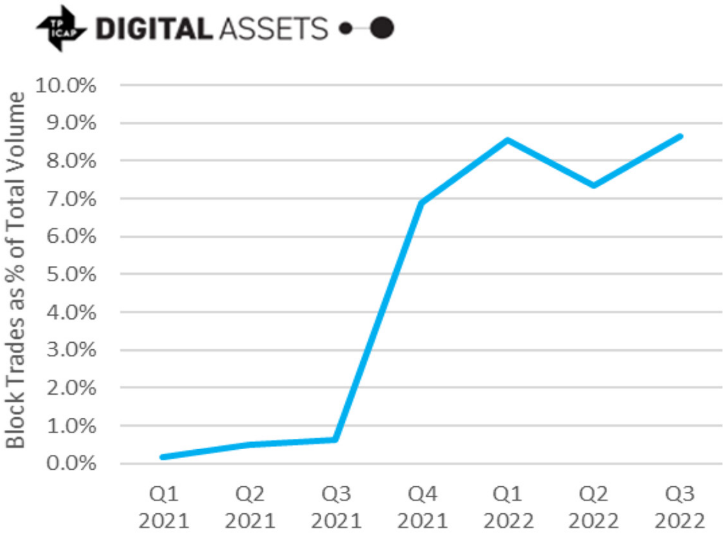
Source: Bloomberg, TP ICAP Digital Assets

Figure 15
Bitcoin Futures volumes growth contrasts starkly with the decline in Micro Bitcoin Futures contract volumes



Source: Bloomberg, TP ICAP Digital Assets

Figure 16
Block Trading is growing as a proportion of Bitcoin Futures Volumes



Source: Bloomberg, TP ICAP Digital Assets

The FTX bankruptcy filing was a critical reminder to market participants that with any fiat collateralized or custody based market infrastructure, trust is absolutely critical. The example of CME Bitcoin Futures ably demonstrates that as the crypto asset class evolves, venues that are regulated, reputable and supported by proven clearing and custodian infrastructure will become the dominant providers. In addition Bitcoin has proved to be an excellent 'sandbox' for the acquisition of institutional knowledge in the managing of the fundamental components of a digital asset.

Questions? Wondering why we are emailing you about Listed Derivatives?
For more information, please contact us.

Mike du Plessis
mduplessis@liquidnet.com