

# WFE Derivatives Report 2021

**April 2022**

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*While every effort has been made to ensure that the information in this survey is accurate at the time of printing, the WFE Office accepts no responsibility for errors or omissions.*

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## I THE WFE DERIVATIVES SURVEY 2021

The World Federation of Exchanges conducts an annual survey of the derivatives markets operated by its members, affiliates, and other exchanges that voluntarily submit data to us, with the aim of providing an update about the derivatives market for the past calendar year. This report is based on data collected from 50 derivatives exchanges (the full list can be found in Annex 1), 40 of which responded to this year's survey by providing also the contract names and sizes (Annex 2).

### Key findings

- *In 2021 derivatives volumes continued its positive trend, increasing 33% on 2020, but at a slower pace than the previous year (44.5%), confirming that last year was an outlier and that the uncertainty brought by the Covid-19 pandemic has decreased.*

The increase in volumes was shared across all regions: the Americas (27%), APAC (49.2%) and the EMEA region (5.1%). To put this in perspective, last year the Americas grew by 42%, APAC by 43.4%, and EMEA by 29.7%. Each region in 2021 witnessed its peak in derivatives trading volumes since at least 2005.
- *The large increase in volumes was observed both in options and in futures contracts. The share of options trading has surpassed the share of futures trading for the first time in 10 years.*

The total volume of options increased 51.5% to 38.88 billion, while that of futures by 16.6%, to 29.35 billion. This compares to respective increases of 44.1% and 37.5% in 2020.
- *All underlying asset classes (equity, ETF, interest rate, commodity and currency derivatives) witnessed increases in contract volumes, but only equity derivatives' share of the total volume increased. STIR futures traded at a significantly higher volume than last year, probably in anticipation of the Federal Reserve raising interest rates.*

Among interest rate derivatives, only short-term interest rate (STIR) options volumes registered a downtick on 2020, while STIR futures, long-term interest rate (LTIR) options and LTIR futures recorded double digit increases.
- *Equity derivative contracts increased 49.2% (compared to 56.5% in 2020), with all equity derivatives classes recording double digit increases.*

At the end of 2021 volumes amounted to 39.12 billion contracts. Single stock options volumes increased 40.9% (compared to 56.0% in 2020), single stock futures by 41.9% (compared to 99.6% in 2020), stock index options by 80.7% (compared to 42.7% in 2020) and stock index futures by 18.7% (compared to 60.4% in 2020).
- *Commodity derivatives saw an increase of 11.5% (compared to 34.1% in 2020), but the increase was not recorded across all commodity types. Energy, precious and non-precious metals declined 6.2%, 10.6% and 3.2%, respectively, while agriculture, index commodities and 'other' commodities went up 4.9%, 201.5% and 66.2%, respectively.*

Options and futures volumes followed the trend from the previous year, with both going up 35.7% and 10.6%, respectively (in 2020 they increased 26.2% and 34.4%, respectively). MIA Exchange Group entered the agriculture commodities segment in 2021.

- *Currency derivatives recorded a 20.3% increase (compared to 30.9% in 2020). We notice a significant increase in market share for APAC region from 43.3% in 2020 to 52.2%, while the Americas and the EMEA markets lost market share from 29.7% to 24.1%, and from 26.9% to 23.6%, respectively.*

The increase in currency derivatives trading was driven mostly by APAC (which increased 45.2% year on year) and, to a lesser extent, by EMEA (5.6% increase). This is consistent with the fact that trade in the APAC region grew faster than the global average in 2021 despite Covid-19 restrictions and supply chain disruptions.<sup>1</sup> Both options and futures recorded increases of 78.6% (compared to 16.6% in 2020) and 3.4% respectively (compared to 35.7% in 2020).

- *ETF derivatives increased 8.9%, which confirms last year's spike of 65.1% as an outlier.*

The increase was essentially due to the positive trend in ETF options (8.6%), as ETF futures market share is close to 0%. The Americas is the region where most ETF derivatives trade takes place, with a 74.5% share of the global ETF derivatives volume, while 25.1% takes place in APAC and 0.4% in EMEA region.

All the above are year-on-year figures.

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<sup>1</sup> Asian Development Bank

## 2 METHODOLOGY

This report focuses on derivatives trading activity in 2021, and covers data collected from 50 exchanges/exchange groups (Annex 1). Individual contract rankings were provided by 40 of these exchanges<sup>2</sup> (Annex 2).

The figures presented in this report cover a full set of indicators:

- the number of contracts traded (also referred to as volume traded or volumes)
- the notional value traded
- the open interest as at year end

These indicators are presented across sixteen main product lines:

- Single Stock Options and Futures
- Stock Index Options and Futures
- Exchange Traded Funds (ETFs) Options and Futures
- Short-Term Interest Rate (STIR) Options and Futures
- Long-Term Interest Rate (LTIR) Options and Futures
- Currency Options and Futures
- Commodity Options and Futures, distinguishing between:
  - Agriculture
  - Energy
  - Non-precious metals
  - Precious metals
  - Index commodity derivatives, and
  - Other
- Other Options and Futures

**Units:** Unless otherwise indicated, the volume of contracts traded, and the open interest are reported in full numbers. The notional value of the contracts traded is reported in millions of US dollars. Where we did not receive data from the exchanges and were not able to supplement the missing data from other sources, this is mentioned under the relevant tables or reflected as “NA” for “not available.”

**Rankings:** Rankings have been presented using volume traded as this is the most widely available data-point. However, as contract sizes vary dramatically across markets, these figures should always be read with reference to the notional value traded (where available) as the largest markets by volume traded are not always the largest by notional value traded.

For a full description of the indicators please refer to the WFE Statistics [Definitions Manual](#). For questions or feedback about this report, please contact the WFE Statistics Team on [statistics@world-exchanges.org](mailto:statistics@world-exchanges.org)

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<sup>2</sup> Athens Stock Exchange, Bolsa Mexicana de Valores, Bursa Malaysia, ICE Futures Europe, India International Exchange, International Securities Exchange, Johannesburg Stock Exchange, NYSE, Shanghai Stock Exchange and Zhengzhou Stock Exchange did not provide individual contract information, which might have affected the contract rankings.

### 3 EXCHANGE-TRADED DERIVATIVE PRODUCTS

Some of the exchanges taking part in this survey provide a wide range of derivatives contracts, while others specialise in a single area of the market. The average number of product lines offered by responding exchanges is six and the median is five. As **Figure 1** shows, stock index futures and commodity futures are the derivatives offered by the largest number of trading venues. When looking at the number of products offered by exchange (**Figure 2**), Eurex has the largest number of product lines (13), and there are four exchanges with one product line only.

Figure 1: Number of trading venues by product line in 2021

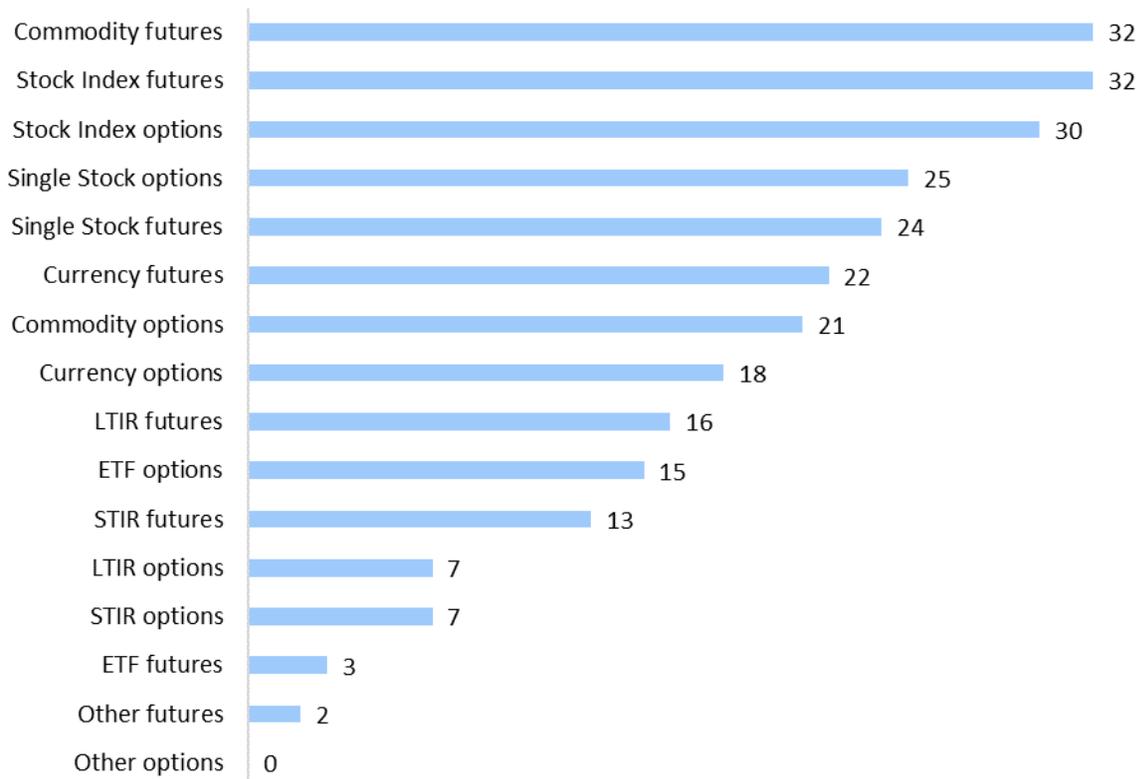
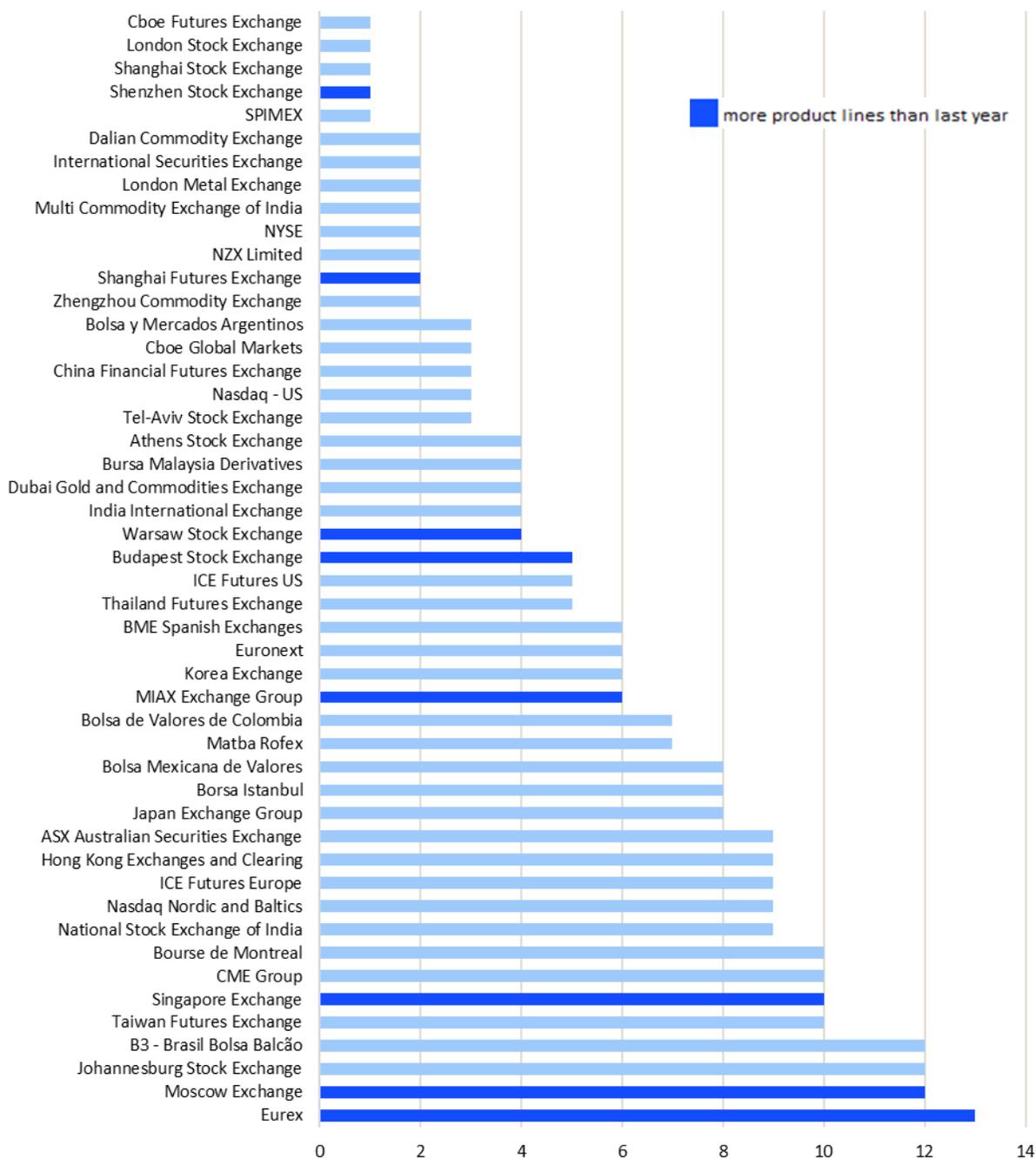


Figure 2: Number of product lines per exchange in 2021



## 4 MARKET OVERVIEW

Amongst the respondent universe of 50 exchanges, there was a 33% increase in the volumes traded compared with 2020, with a record number of 63.24 billion derivatives contracts traded in a year (33.88 billion options and 29.35 billion futures). This represents an increase of 221.1% over the last 10 years, with an average annualized growth rate of 13.8% (**Figure 3**).

### 4.1 Trading activity: regional trends

Regarding trends in regional trading activity, markets in every region traded more contracts in 2021 compared to 2020.

The volumes in the Americas region increased 27% due to equity (41.3%), ETF (5.8%) and interest rate derivatives (18.9%), while the currency and commodity derivatives declined 2.7% and 9.1%, respectively. Volumes traded on American markets accounted for 40.5% of global volumes traded (compared to 42.8% in 2020). In absolute terms, volumes in the Americas rose by 5.44 billion contracts traded compared to 2020. The top three exchanges that grew the most (in terms of volumes) were: MIAX Exchange Group (62.2%), B3 - Brasil Bolsa Balcão (45.3%) and NYSE (36%), while the top three exchanges in terms of volumes traded were: B3 - Brasil Bolsa Balcão (9.58 billion contracts), CME Group (4.94 billion contracts traded) and Nasdaq – US (3.23 billion contracts traded).

The volumes in the APAC region went up 49.2%, due to an increase in volumes traded in equity (69.6%), ETF (17.6%), currency (45.2%) and commodity derivatives (21.5%), while interest rate and ‘other’ derivatives volumes fell 5.5% and 15.8%, respectively. Volumes in APAC account for 47.4% of the total number of contracts traded, compared to 41.5% in 2020. In absolute terms, volumes increased by 9.88 billion contracts traded when compared to 2020.

The top three exchanges that grew the most in terms of volumes were: India International Exchange (126.2%), NSE India (93.2%) and Zhengzhou Commodity Exchange (51.7%), while the top three exchanges in terms of volumes traded were: NSE India (17.1 billion contracts), Zhengzhou Commodity Exchange (2.58 billion contracts traded) and Dalian Commodity Exchange (2.45 billion contracts traded).

The volumes in EMEA rose 5.1%, thanks to increases in equity (11.4%), ETF (3,561.1%)<sup>3</sup>, interest rate (7%) and currency derivatives (5.6%), while commodity derivatives volumes went down 9.8%. ‘Other’ derivatives were not traded in 2021. Volumes in the EMEA region (which accounted for the remaining 12.1% of total volumes, were 3.7 percentage points less as compared to 2020).

The top three exchanges that grew the most in terms of volumes were: SPIMEX (484.5%), Borsa Istanbul (36.9%) and Warsaw Stock Exchange (32.5%), while the top three exchanges in terms of volumes traded that performed well in 2021 were: Borsa Istanbul (2.09 billion contracts traded), ICE Futures Europe (1.09 billion contracts traded) and Euronext (180.6 million contracts traded).

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<sup>3</sup> Moscow Exchange and Shenzhen Stock Exchange entered ETF derivatives market segment in 2021

Figure 3: Volumes of exchange-traded derivatives

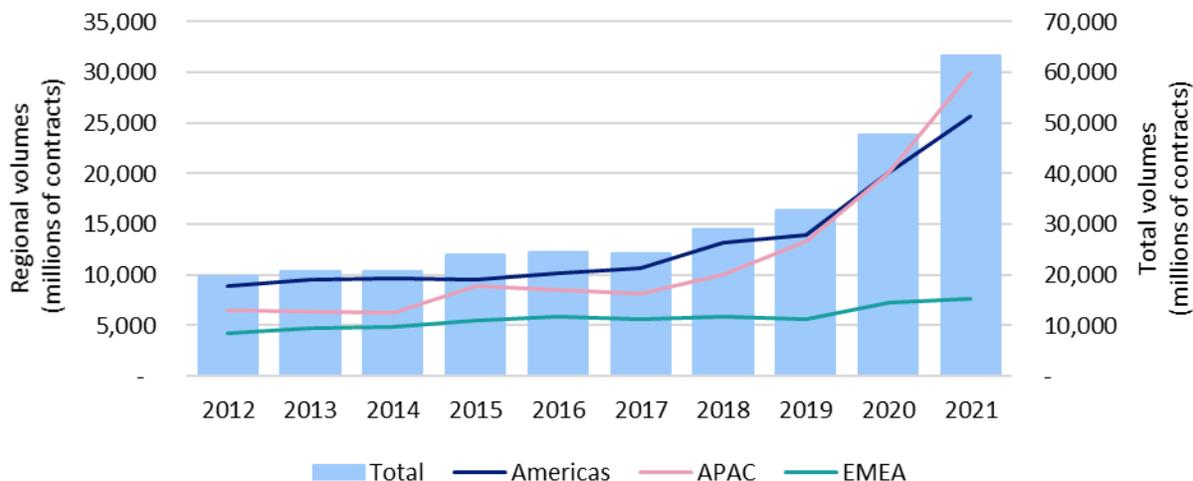
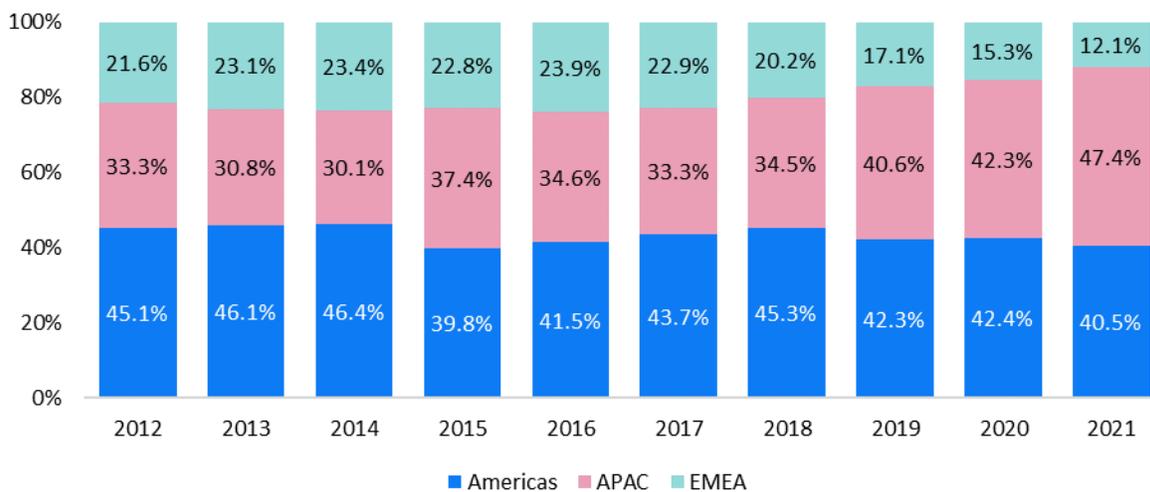


Figure 4: Share of total volumes: breakdown by regions



## 4.2 Trading activity by assets classes

**Equity derivatives:** Equity derivatives volumes rose 49.2% relative to 2020 due to significant increases in volumes across all classes and all regions. They accounted for 61.9% of overall derivatives contracts traded in 2021. In the ten-year period under review, 2021 saw the highest number of equity derivatives contracts traded in a year (39.12 billion). Stock index options were the most actively traded derivatives product in 2020, accounting for 25.8% of overall derivatives volumes.

**ETF derivatives:** In 2021, 4.62 billion ETF derivatives contracts were traded. Volumes went up 8.9% year-on-year, result driven by 5.8% increase in the Americas region, where 74.5% of the trading takes place and 17.6% increase in APAC, which accounts for 25.1% of the trade.

**Interest rate derivatives:** Interest rate derivatives volumes increased 14.4% on 2020 amounting to 4.56 billion. The result was due to rising volumes across STIR futures (17.5%), LTIR options (20.7%) and LTIR futures (12.2%), while STIR options declined slightly (-0.1%). The Americas region, where the major share of volumes are traded (70.8% share), saw the biggest rise in volumes 18.9%. EMEA (which accounts for 24.5% of the trading activity) went up 7%, while APAC fell 5.5% (its share of the global interest rate derivatives being 4.7%).

**Currency derivatives:** Currency derivatives volumes increased 20.3% on 2020. Volumes of currency derivatives nearly reached 4.60 billion contracts traded in 2021. In the Americas region, where 24.1% of contracts were traded, volumes were down 2.7%. In APAC, the region with 52.2% share of contracts traded, volumes went up 45.2%. EMEA region which accounts for 23.6% share, the volumes rose 5.6%.

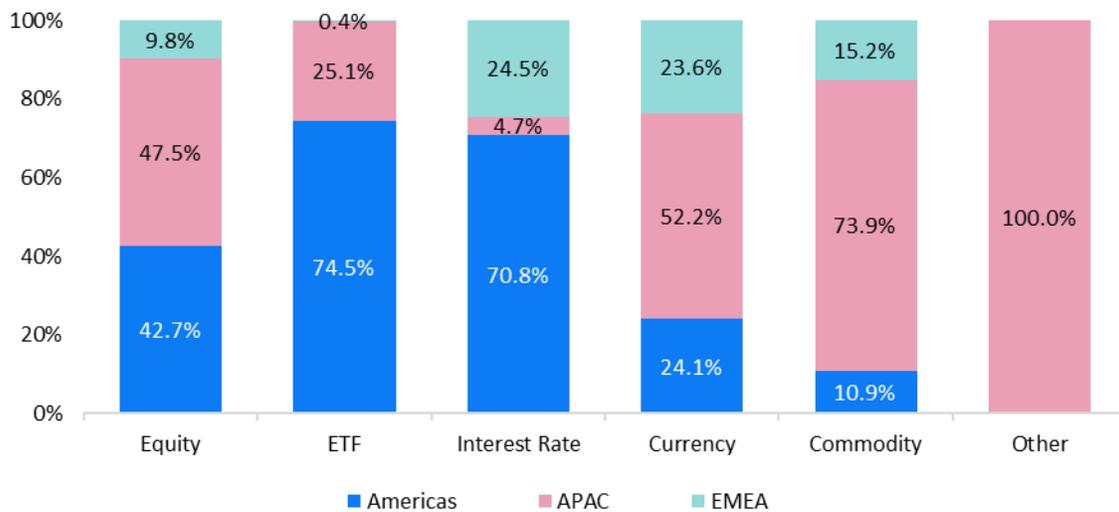
**Commodity derivatives:** Volumes traded of commodity derivatives were up 11.5% with a total of 10.34 billion contracts traded in 2021. This result was driven by APAC (which accounts for 73.9% of the global trade) that saw volumes rising 21.5%, while the Americas and EMEA regions declined 9.1% and 9.8%, respectively. The Americas hosts 10.9% of the trade, while EMEA region the rest of 15.2%.

**Other derivatives:** The 'other' derivatives category comprises of a wide range of products, including index volatility options and futures, REIT derivatives, dividend index derivatives, CFDs, and inflation indexed futures and options. Volumes traded of 'other' derivatives were down 27.6% on 2020, decrease caused only by 'other' futures (because 'other' options product line was not traded in 2021). 'Other' futures were only traded in APAC, which declined 15.8%, while EMEA stopped offering this product last year.

Figure 5: Share of total volumes: options vs futures



Figure 6: Share of total volumes in 2021, by region and asset class



Over the last ten years, global derivatives trading volumes have increased 221.1% with 63.24 billion contracts traded in 2021 compared to 19.69 billion contracts traded in 2012. This positive trend is mainly driven by a rise in equity derivatives volumes in the last four years, from 13.64 billion contracts traded in 2018 to 39.12 billion contracts traded in 2021 (**Figure 7**).

**Table I: Volumes by asset class (millions of contracts)**

	2020	2021	% change	% within asset class	% of total
<b>Equity</b>					
Single Stock Options	7,243	10,204	40.89%	26.1%	16.14%
Single Stock Futures	3,395	4,818	41.93%	12.3%	7.62%
Stock Index Options	9,029	16,315	80.70%	41.7%	25.80%
Stock Index Futures	6,558	7,785	18.70%	19.9%	12.31%
<b>Total Equity</b>	<b>26,224</b>	<b>39,123</b>	<b>49.18%</b>		<b>61.87%</b>
<b>ETF</b>					
ETF Options	4,237	4,600	8.55%	99.6%	7.27%
ETF Futures	0.9	17.5	1773.6%	0.4%	0.03%
<b>Total ETF</b>	<b>4,238</b>	<b>4,617</b>	<b>8.94%</b>		<b>7.30%</b>
<b>Currency</b>					
Currency Options	859	1,533	78.59%	33.4%	2.43%
Currency Futures	2,963	3,063	3.37%	66.6%	4.84%
<b>Total Currency</b>	<b>3,822</b>	<b>4,597</b>	<b>20.27%</b>		<b>7.42%</b>
<b>Commodity</b>					
Commodity Options	331	450	35.73%	4.3%	0.71%
Commodity Futures	8,942	9,891	10.61%	95.7%	15.64%
<b>Total Commodity</b>	<b>9,273</b>	<b>10,341</b>	<b>11.51%</b>		<b>16.70%</b>
<b>Interest rate*</b>					
STIR Options	268	268	-0.12%	5.9%	0.42%
STIR Futures	630	740	17.50%	16.2%	1.17%
LTIR Options	242	292	20.67%	6.4%	0.46%
LTIR Futures	1,722	1,933	12.24%	42.4%	3.06%
<b>Total Interest Rates</b>	<b>3,983</b>	<b>4,558</b>	<b>14.44%</b>		<b>7.21%</b>
<b>Other</b>					
Other Options	-	-	NA	0.0%	0.00%
Other Futures	1	1	-27.60%	100.0%	0.00%
<b>Total 'other'</b>	<b>1</b>	<b>1</b>	<b>-27.60%</b>		<b>0.00%</b>
<b>Grand Total</b>	<b>47,542</b>	<b>63,236</b>	<b>33.01%</b>		

\* B3 - Brasil Bolsa Balcão, Bolsa de Valores de Colombia, ICE Futures Europe and Johannesburg Stock Exchange did not provide the breakdown of interest rate derivatives into STIR and LTIR, therefore the Total Interest Rates is higher than the sum of STIR and LTIR derivative contracts.

Figure 7: Volumes by asset class (billions of contracts)

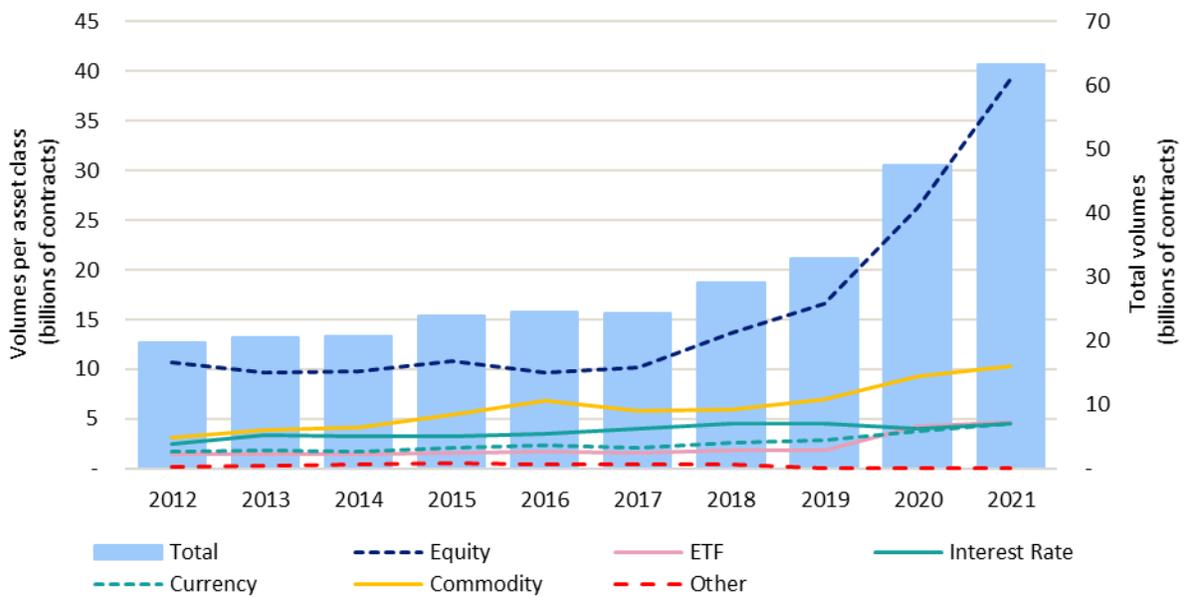
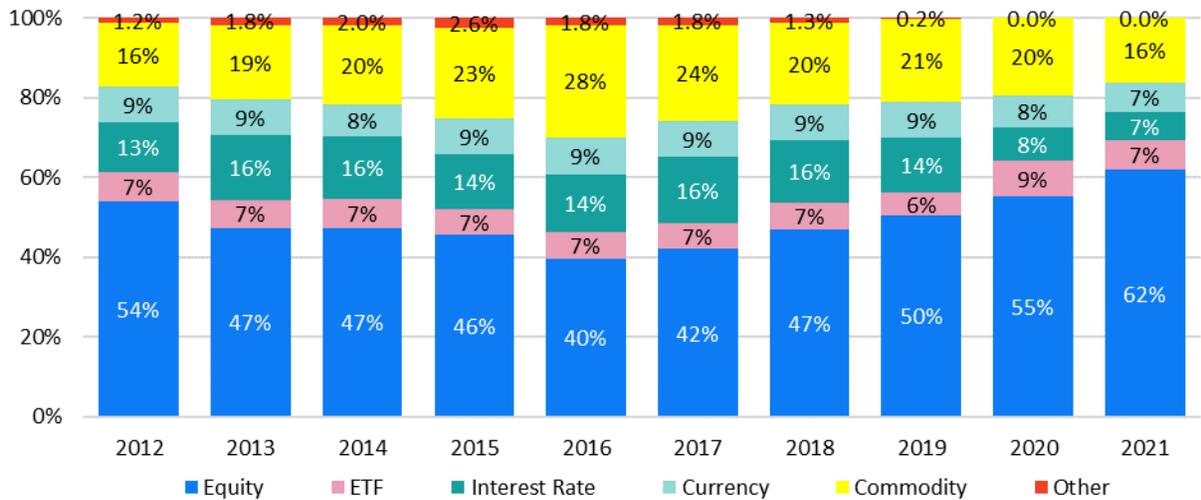


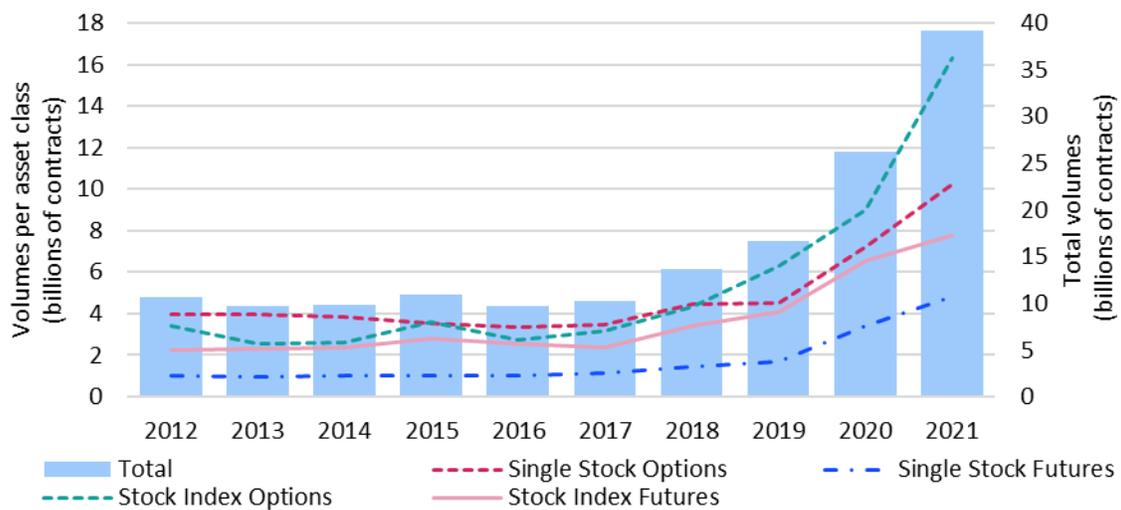
Figure 8: Product composition over time by share of total volume



## 5 EQUITY DERIVATIVES

- Overall, equity derivatives volumes rose 49.2% compared to 2020, result due to all categories having a positive trend: single stock options (40.9%), single stock futures (41.9%), stock index options (80.7%) and stock index futures (18.7%).
- Volumes increased in the Americas 41.3%, the APAC was up 69.6% and the EMEA region grew 11.4% on 2020. 42.7% of the volume traded takes place in the Americas, 47.5% in APAC and 9.8% in EMEA region.

Figure 9: Volumes of equity derivatives (billions of contracts)

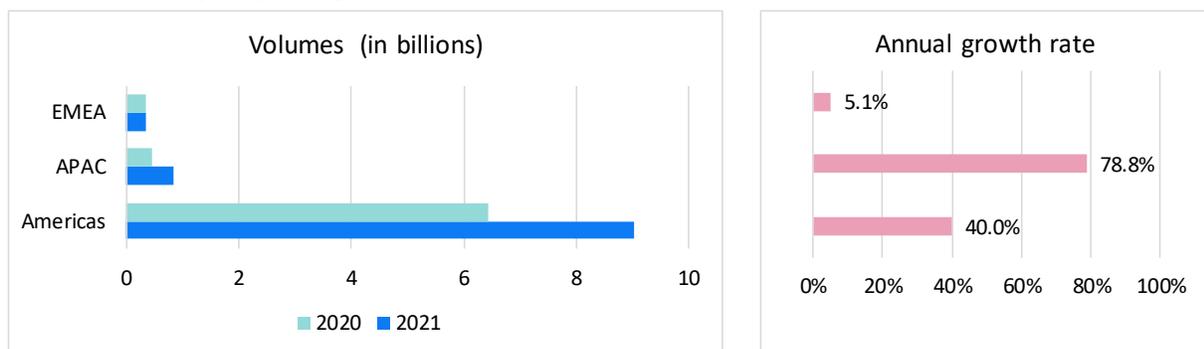


## 5.1 Single Stock Options

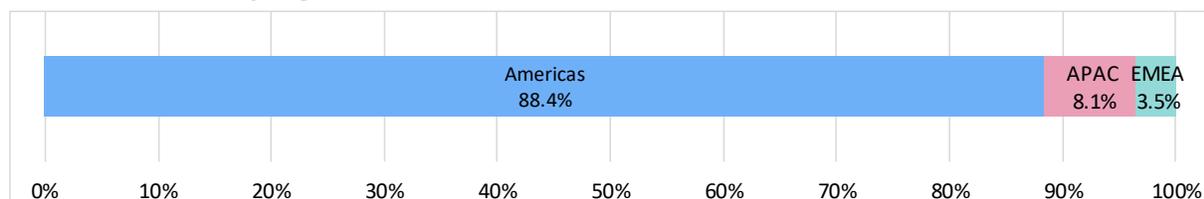
- Volumes of single stock options increased 40.9% on 2020, amounting to 10.20 billion. This is the second most traded product with 16.1% share of total derivatives, after stock index options.
- All regions recorded rising volumes on 2020: the Americas of 40%, APAC of 78.8% and EMEA region of 5.1%. It's worth noting that the bulk of single stock options is traded in the Americas (88.4%), APAC accounts for 8.1% and EMEA region for 3.5%.
- Three exchanges from the Americas (Nasdaq – US, B3 - Brasil Bolsa Balcao, Cboe Global Markets) were responsible for over half of the global volumes.

Figure 10: Single Stock Options

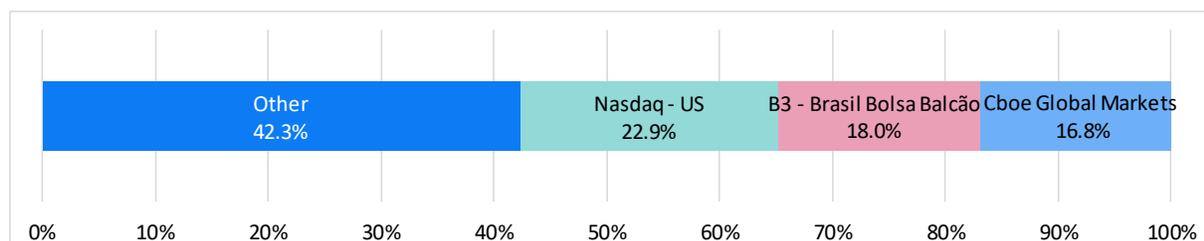
### A. Volumes and yearly change



### B. Share of volume by region



### C. Share of volume by exchange



**Table 2: Top 10 exchanges by number of single stock options contracts traded in 2021**

Exchange	Volume		Notional Value		Open interest	
	2021	YoY change	2021	YoY change	2021	YoY change
Nasdaq - US	2,337,412,860	37%	NA	NA	NA	NA
B3 - Brasil Bolsa Balcão	1,835,383,463	26%	393,631	-44%	48,206,676	4%
Cboe Global Markets	1,714,980,943	33%	NA	NA	326,576,982	23%
NYSE	1,231,950,440	57%	176,933	-51%	NA	NA
MIAX Exchange Group	963,410,916	90%	21,143,276	121%	NA	NA
International Securities Exchange	842,042,322	34%	NA	NA	NA	NA
National Stock Exchange of India	598,412,296	120%	7,003,360	158%	979,759	7%
Eurex	201,529,915	7%	929,148	0%	52,301,492	5%
Hong Kong Exchanges and Clearing	157,074,267	21%	885,042	60%	7,897,040	-11%
Euronext	84,868,421	22%	374,280	29%	19,336,315	54%
Others	237,433,905	11%	556,156	0%	21,759,699	-14%
<b>Grand Total</b>	<b>10,204,499,748</b>	<b>40.9%</b>	<b>31,461,825</b>	<b>101%</b>	<b>477,057,963</b>	<b>17%</b>

**Table 3: Top 10 single stock options contracts traded in 2021**

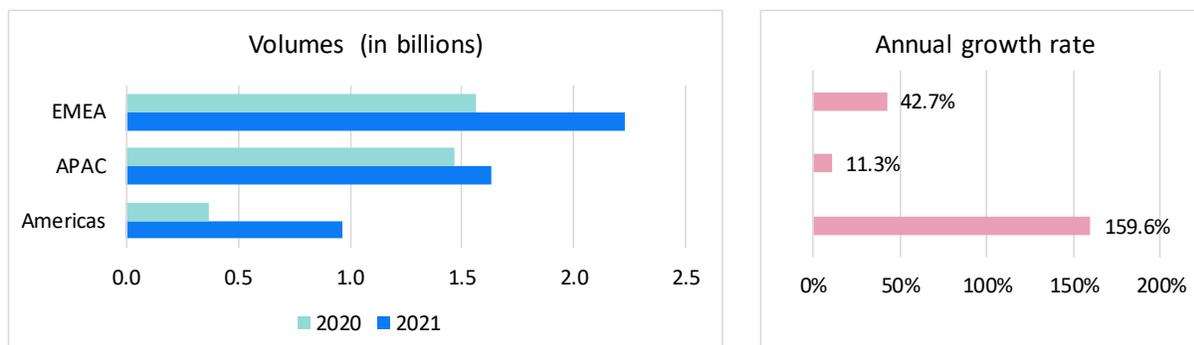
Contract Name	Contract size	Exchange name	Volume 2021	Notional value 2021	Open interest 2021
PETROBRAS	100 shares	B3 - Brasil Bolsa Balcão	75,254,319,100	8,744.62	NA
VALE	100 shares	B3 - Brasil Bolsa Balcão	16,070,553,628	5,880.61	NA
COGNA	100 shares	B3 - Brasil Bolsa Balcão	8,353,236,700	469.64	NA
BRADESCO	100 shares	B3 - Brasil Bolsa Balcão	8,237,942,570	1,030.21	NA
ITAU	100 shares	B3 - Brasil Bolsa Balcão	7,247,022,500	1124.3	NA
Apple Inc (AAPL)	100 shares	Cboe Global Markets	128,255,621	NA	9,400,300
Apple Inc (AAPL)	100 shares	Nasdaq - US	127,897,707	1,675,652.81	2,387,767,227
Tesla Inc (TSLA)	100 shares	Nasdaq - US	118,400,405	7,544,564.05	1,462,894,545
Tesla Inc (TSLA)	100 shares	Cboe Global Markets	79,996,726	NA	5,766,915
Apple Inc (AAPL)	100 shares	MIAX Exchange Group	68,701,069	NA	NA

## 5.2 Single Stock Futures

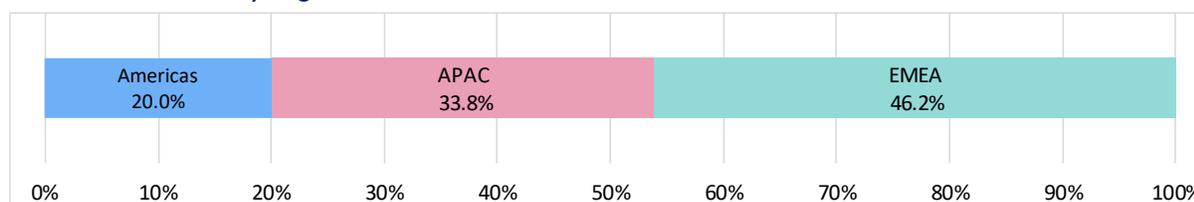
- Single stock futures volumes were up 41.9% on 2020, recording 4.82 billion contracts traded in 2021.
- They remained the least actively traded equity derivatives product type accounting for 7.6% of total derivatives volumes.
- The APAC and EMEA regions, where most of the global volumes are traded (33.8% and 46.2% respectively) witnessed volumes increase 11.3% and 42.7%, respectively, while the Americas region surged 159.6%. In the Americas region the increase is mostly due to B3 – Brasil Bolsa Balsao.
- Three exchanges, Borsa Istanbul, Korea Exchange and B3 – Brasil Bolsa Balsao, account for the majority (82.2%) of total volumes traded.

Figure 11: Single Stock Futures

A. Volumes and yearly change



B. Share of volume by region



C. Share of volume by exchange

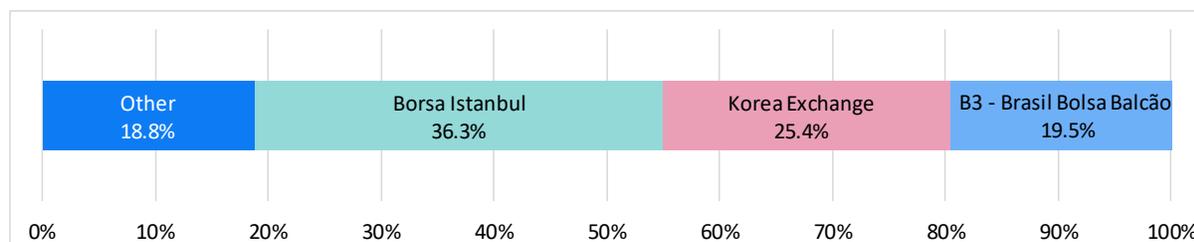


Table 4: Top 10 exchanges by number of single stock futures contracts traded in 2021

Exchange	Volume		Notional Value		Open interest	
	2021	YoY change	2021	YoY change	2021	YoY change
Borsa Istanbul	1,748,803,926	46%	117,664	13%	11,769,481	43%
Korea Exchange	1,224,916,827	9%	932,929	27%	6,331,508	-8%
B3 - Brasil Bolsa Balcão	939,130,833	162%	3,568	111%	30,823,900	39%
Moscow Exchange	284,110,558	44%	94,858	77%	3,179,752	174%
National Stock Exchange of India	252,568,663	-2%	2,852,311	26%	2,644,078	69%
Eurex	102,877,662	22%	428,719	14%	10,549,222	32%
Taiwan Futures Exchange	74,994,818	190%	582,949	140%	528,576	42%
Thailand Futures Exchange	70,326,055	48%	NA	NA	3,221,487	81%
Johannesburg Stock Exchange	25,031,971	46%	23,719	120%	2,273,733	25%
Bourse de Montreal	22,359,988	91%	112,344	120%	479,000	61%
Others	72,753,782	0%	1,539,796	17%	3,526,882	14%
<b>Grand Total</b>	<b>4,817,875,083</b>	<b>41.9%</b>	<b>6,688,857</b>	<b>30%</b>	<b>75,327,619</b>	<b>36%</b>

Table 5: Top 10 single stock futures contracts traded in 2021

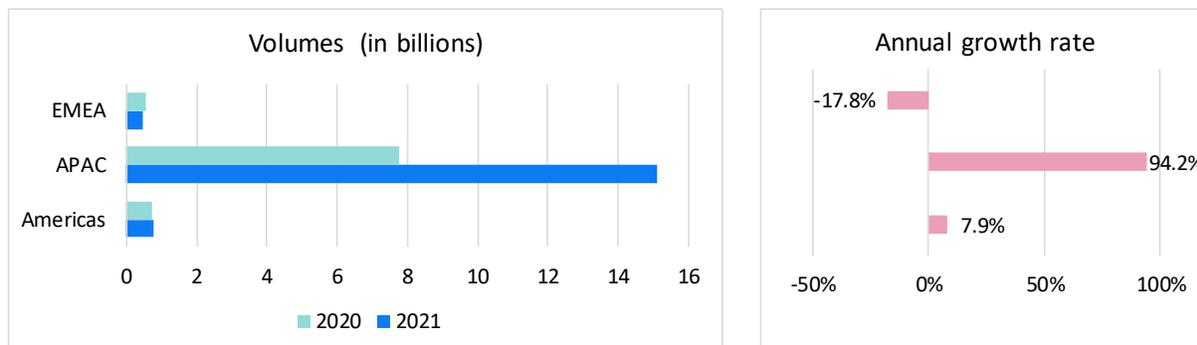
Contract Name	Contract size	Exchange name	Volume 2021	Notional value 2021	Open interest 2021
DRV Futures SamsungElec	10 shares	Korea Exchange	354,055,492	238,073.95	2,046,851
YAPI KREDI BANK (YKBNK)	100 shares	Borsa Istanbul	198,508,839	4,219.15	1,645,471
GARANTI BANK (GARAN)	100 shares	Borsa Istanbul	186,810,469	13,490.19	1,520,377
EMLAK KONUT REIT (EKGYO)	100 shares	Borsa Istanbul	185,762,551	3,143.12	1,335,204
PETKIM PETROCHEMICAL (PETKM)	100 shares	Borsa Istanbul	145,775,664	7283.72	400615
KARABUK IRON STEEL (KRDMD)	100 shares	Borsa Istanbul	121,306,339	7,132.53	468,520
Futures on Sberbank ordinary shares	100 shares	Moscow Exchange	92,495,524	38,123.03	379,680
DRV Futures SK hynix	10 shares	Korea Exchange	69,255,782	72,153.92	408,983
Gazprom ordinary shares	100 shares	Moscow Exchange	64,768,732	26,178.21	669,930
Futures on VTB BANK ordinary shares	100,000 shares	Moscow Exchange	61,788,986	4,073.20	690,671

### 5.3 Stock Index Options

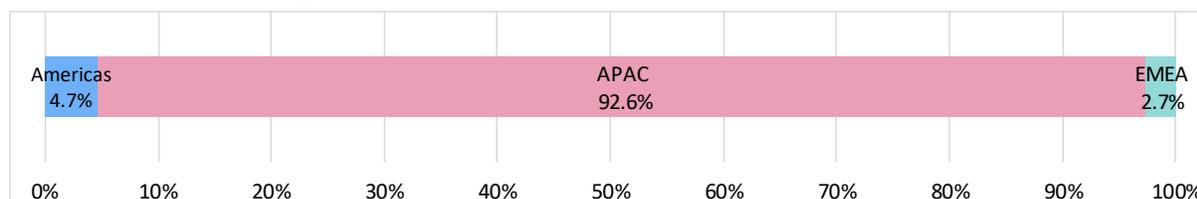
- Stock index options volumes increased 80.7% on 2020, amounting to 16.32 billion contracts traded.
- Stock index options were the most actively traded equity derivatives product type in 2021 with a 41.7% share of equity derivatives volumes and the most actively traded derivative, with 25.8% volume share of all product lines.
- Volumes went up in the Americas 7.9%, APAC 94.2% (due to the exceptional performance of the NSE India which grew 108% in 2021 compared to 2020), while EMEA fell 17.8%. The APAC region remained the key driver of the overall trend, accounting for 92.6% of global volumes.
- The market for this product type was highly concentrated. Three markets accounted for 92.8% of the total volume, two of which are in the APAC region (the NSE India and the Korea Exchange, which together accounted for 89.8% of the global volume). Cboe Global Markets accounted for the remaining 3%.
- NSE India's Bank Nifty index options and Nifty index options were the most actively traded contracts in 2021.

Figure 12: Stock Index Options

A. Volumes and yearly change



B. Share of volume by region



C. Share of volume by exchange

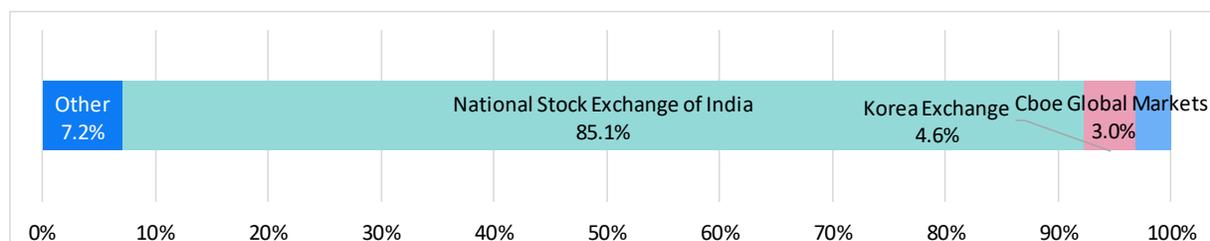


Table 6: Top 10 exchanges by number of stock index options contracts traded in 2021

Exchange	Volume		Notional Value		Open interest	
	2021	YoY change	2021	YoY change	2021	YoY change
National Stock Exchange of India	13,889,063,127	108%	172,588,703	183%	4,323,597	13%
Korea Exchange	758,533,660	3%	62,650,014	25%	2,654,019	19%
Cboe Global Markets	496,585,744	8%	NA	NA	22,193,282	12%
Eurex	365,199,107	-19%	14,503,112	-13%	44,343,990	-5%
Taiwan Futures Exchange	197,532,656	-2%	5,986,865	39%	368,100	-10%
CME Group	190,363,339	6%	42,863,133	37%	3,842,514	59%
India International Exchange	166,689,177	145%	NA	NA	565	743%
B3 - Brasil Bolsa Balcão	70,233,383	8%	113,311	-72%	447,610	-10%
China Financial Futures Exchange	30,241,547	81%	39,011	86%	195,960	37%
Tel-Aviv Stock Exchange	26,090,837	-7%	1,441,716	-32%	163,431	-18%
Others	124,880,801	-18%	4,368,761	-3%	7,383,189	-16%
<b>Grand Total</b>	<b>16,315,413,378</b>	<b>80.7%</b>	<b>304,554,626</b>	<b>79%</b>	<b>85,916,257</b>	<b>1%</b>

Table 7: Top 10 stock index options contracts traded in 2021

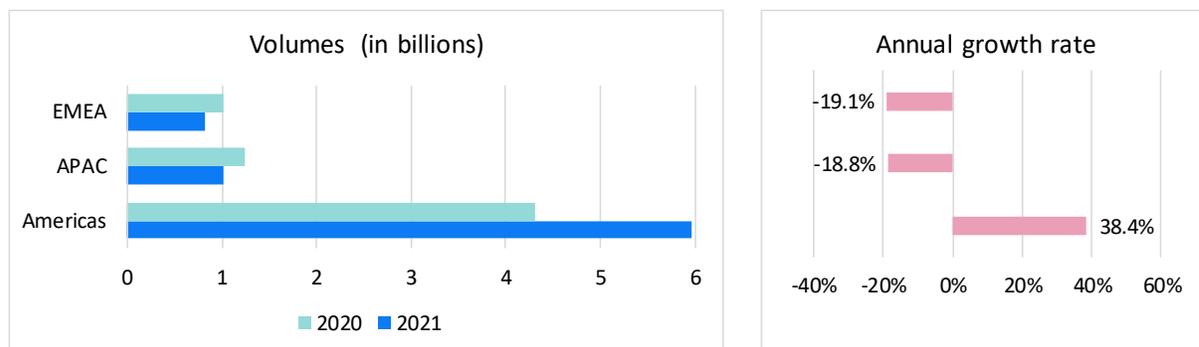
Contract Name	Contract size	Exchange name	Volume 2021	Notional value 2021	Open interest 2021
BANKNIFTY	25 units	National Stock Exchange of India	8,435,834,008	101,741,702.61	1,451,958
NIFTY	50 units	National Stock Exchange of India	5,446,046,855	70,785,845.28	2,871,404
KOSPI200 Options	KRW 250,000	Korea Exchange	535,325,603	137,736.81	2,047,408
S&P 500 Options (SPX)	100 shares of the underlying index	Cboe Global Markets	344,700,599	NA	14,638,009
OPT ON EURO STOXX 50	EUR 10 x index pts	Eurex	227,094,692	9584210.65	29206474
TAIEX Options	TWD 50 x index pts	Taiwan Futures Exchange	197,333,257	5,982,841.16	364,907
KOSPI200 Weekly Options	KRW 250,000	Korea Exchange	187,965,562	23,439.11	46,259
E-MINI S&P500	US\$ 50 x S&P 500 Index	CME Group	176,776,665	38,033,404.58	3,626,791
Volatility Index Options (VIX)	US\$ 100 x index value	Cboe Global Markets	131,664,284	NA	6,392,376
OPT ON EURO STOXX BANKS	EUR 50 x index pts	Eurex	56,297,053	300,234.43	9,051,116

## 5.4 Stock Index Futures

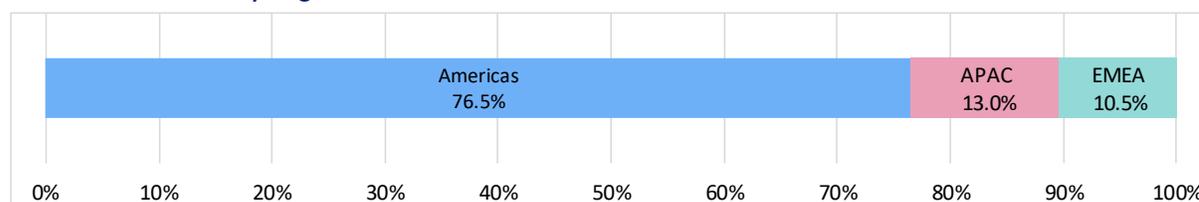
- Stock index futures volumes increased 18.7% on 2020, reaching 7.79 billion contracts traded.
- They are the fourth most actively traded derivatives product type and the third equity derivative, accounting for 12.3% of overall derivatives volumes and 19.9% of equity derivatives volumes.
- Volumes rose in the Americas (38.4%), while in APAC and EMEA regions volumes declined by 18.8% and 19.1%, respectively.
- The top 3 exchanges (in terms of volumes traded) – two from the Americas region and one from the EMEA region - accounted for 80.5% of total volume traded.

Figure 13: Stock Index Futures

A. Volumes and yearly change



B. Share of volume by region



C. Share of volume by exchange

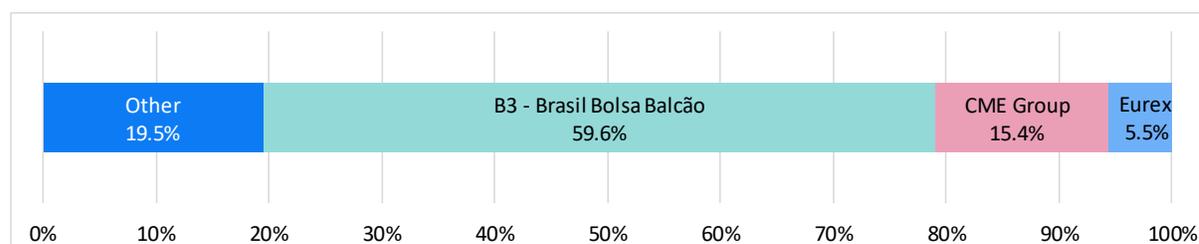


Table 8: Top 10 exchanges by number of stock index futures contracts traded in 2021

Exchange	Volume		Notional Value		Open interest	
	2021	YoY change	2021	YoY change	2021	YoY change
B3 - Brasil Bolsa Balcão	4,635,926,846	58%	21,259,755	64%	1,161,892	26%
CME Group	1,199,850,886	-4%	156,902,744	19%	4,216,814	1%
Eurex	427,873,692	-29%	22,792,243	-20%	10,210,973	-4%
Japan Exchange Group	281,426,655	-29%	14,339,735	-16%	1,248,898	-14%
Moscow Exchange	170,198,291	-1%	521,374	29%	643,300	39%
Singapore Exchange	169,113,478	-9%	NA	NA	1,468,648	7%
Taiwan Futures Exchange	118,411,890	6%	7,531,968	42%	162,218	-9%
Korea Exchange	118,261,251	-23%	6,758,521	-1%	564,970	-14%
Hong Kong Exchanges and Clearing	100,555,940	-10%	10,646,408	6%	675,762	19%
Borsa Istanbul	95,121,918	-7%	119,217	-33%	353,312	-29%
Others	468,187,996	-15%	30,999,129	-1%	9,859,819	63%
<b>Grand Total</b>	<b>7,784,928,843</b>	<b>18.7%</b>	<b>271,871,095</b>	<b>11%</b>	<b>30,566,606</b>	<b>13%</b>

Table 9: Top 10 stock index futures contracts traded in 2021

Contract Name	Contract size	Exchange name	Volume 2021	Notional value 2021	Open interest 2021
E-MINI S&P500	US\$ 50 x S&P 500 Index	CME Group	403,642,202	85,765,453.79	2,301,346
MICRO E-MINI NASDAQ 100	US\$ 2 x Nasdaq-100 Index	CME Group	239,115,577	6,889,999.65	57,375
Nikkei 225 mini	JPY 100	Japan Exchange Group	224,009,276	5,596,855.18	331,413
FUT ON EURO STOXX 50	EUR 10 x index pts	Eurex	223,870,918	10,121,243.49	2,677,946
MICRO E-MINI S&P500	\$5 x S&P 500 Index	CME Group	218,602,634	4629772.42	95952
RTS Index Futures	1 x index pts	Moscow Exchange	151,785,767	478,351.41	437,006
E-MINI NASDAQ 100	US\$ 20 x Nasdaq-100 Index	CME Group	140,406,331	40,599,004.52	208,988
SGX FTSE China A50 Index Futures	US\$ 1 x futures price	Singapore Exchange	97,564,749	NA	785,694
BLUE CHIP INDEX (BIST30)	10 x BIST30 index	Borsa Istanbul	95,030,240	119,123.31	351,251
Mini-TAIEX Futures	TWD 50 x index pts	Taiwan Futures Exchange	71,789,417	2,170,003.37	56,745

## 6 ETF DERIVATIVES

- ETF derivatives volumes were up 8.9% on 2020, recording 4.62 billion.
- ETF options continued to account for most (99.6%) of the ETF derivatives trading with 4.60 billion contracts traded in 2021, while ETF futures recorded 17.5 million contracts traded.
- ETF derivatives are primarily traded in the Americas region (74.5% share), followed by APAC (25.1% share) and EMEA (0.4% share). Shanghai Stock Exchange, Nasdaq - US and Cboe Global Markets account for the majority of ETF derivatives traded. As Figure 14 shows, compared with ETF option volumes, ETF futures are negligible.

Figure 14: Number of ETF derivatives contracts

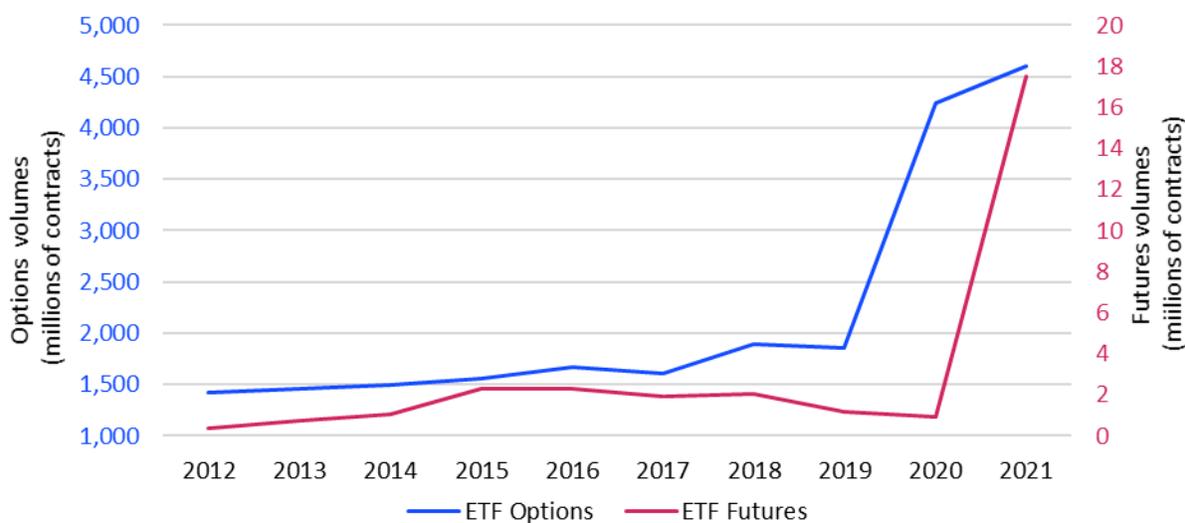


Figure 15: ETF Derivatives – share of total volumes by exchanges

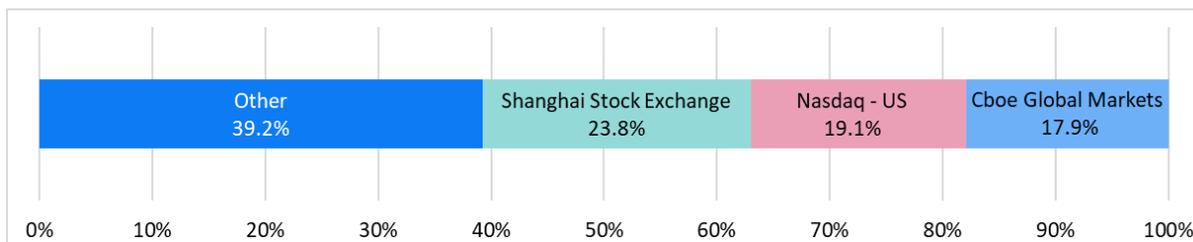


Table 10: Top 10 exchanges by number of ETF options and futures contracts traded in 2021

Exchange	Volume		Notional Value		Open interest	
	2021	YoY change	2021	YoY change	2021	YoY change
Shanghai Stock Exchange	1,097,391,508	12%	7,222,957	28%	4,845,106	19%
Nasdaq - US	882,371,533	1%	NA	NA	NA	NA
Cboe Global Markets	826,073,570	1%	NA	NA	103,733,635	-1%
NYSE	523,030,286	3%	43,826	-71%	NA	NA
B3 - Brasil Bolsa Balcão	493,471,938	30%	561,912,395	775%	1,114,405	-33%
MIAX Exchange Group	374,702,044	17%	11,074,513	54%	NA	NA
International Securities Exchange	329,800,845	-3%	NA	NA	NA	NA
Shenzhen Stock Exchange	58,219,773	NA	462,519	NA	317,421	NA
Moscow Exchange	16,819,749	NA	7,434	NA	191,818	NA
Bourse de Montreal	11,265,989	20%	26,533	49%	2,405,678	75%
Others	4,176,526	-1%	42,695	7%	177,097	-36%
<b>Grand Total</b>	<b>4,617,323,761</b>	<b>8.9%</b>	<b>580,792,872</b>	<b>652%</b>	<b>112,785,160</b>	<b>1%</b>

## 7 INTEREST RATE DERIVATIVES

- Interest rate derivatives volumes increased 14.4% in 2021 compared to the previous year, to 4.56 billion contracts.
- Volumes<sup>4</sup> of STIR options were the only interest rate derivatives that fell 0.1%, while STIR futures went up 17.5%. LTIR options and futures also rose 20.7% and 12.2%, respectively.
- While in the Americas, where the bulk of the volumes are traded (70.8%), and in EMEA regions volumes increased 18.9% and 7%, respectively, in APAC volumes declined 5.5%. 4.7% share of the interest rate derivatives volumes is traded on APAC markets, while EMEA accounts for 24.5%.

<sup>4</sup> B3 - Brasil Bolsa Balcão, Bolsa de Valores de Colombia, ICE Futures Europe and Johannesburg Stock Exchange did not provide the breakdown of interest rate derivatives into STIR and LTIR.

Figure 16: Volumes of interest rate exchange traded derivatives (millions of contracts)

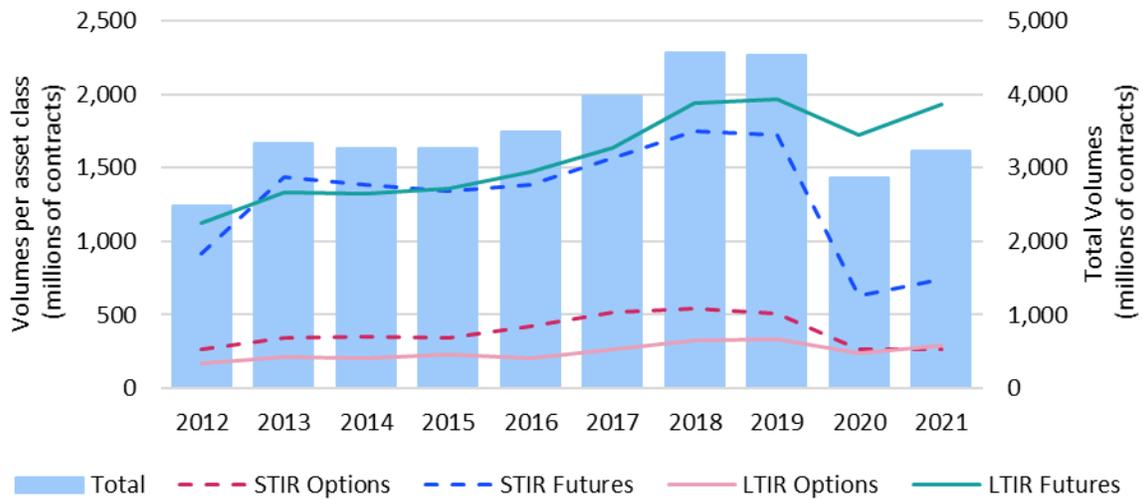
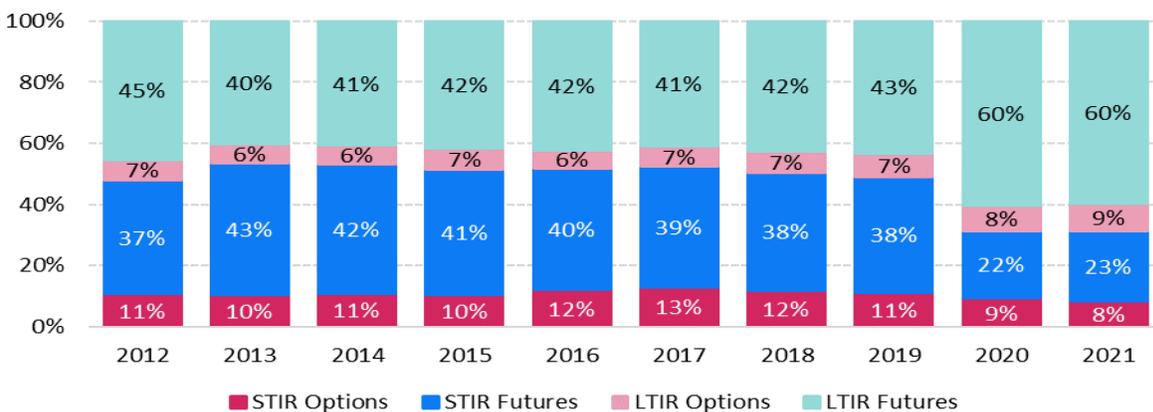


Figure 17: Product composition over time by share of total volume

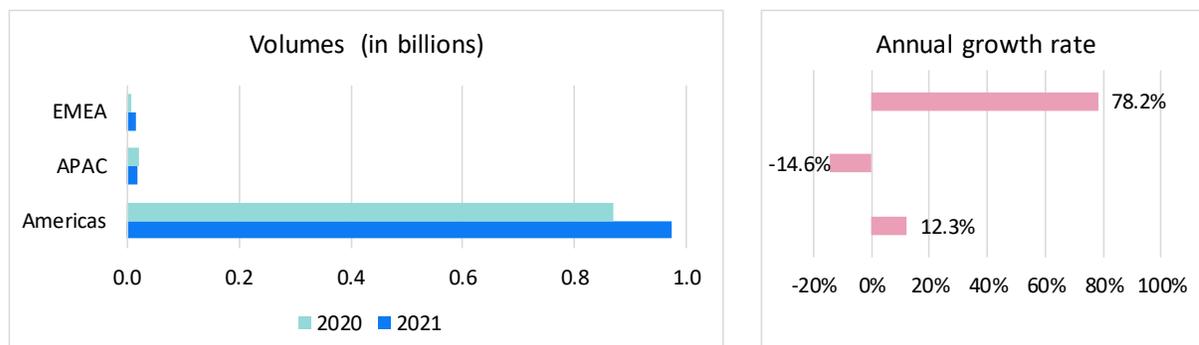


## 7.1 STIR Options and Futures

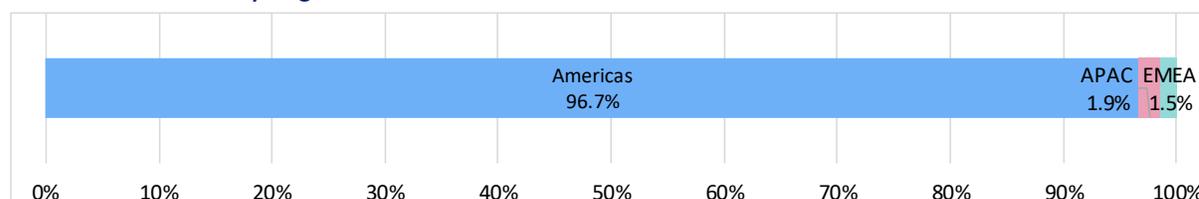
- STIR options volumes (with 0.4% share of the total derivatives volumes) had 0.1% downtick on 2020, while STIR futures (with a 1.2% share) went up 17.5%.
- The Americas region, where 96.7% of global STIR derivatives are traded, saw volumes increasing 12.3%. EMEA region recorded a 78.2% surge, while APAC witnessed its volumes falling 14.6%.
- As you can see from Figure 18C 93.4% of the trading activity took place on CME Group, reflecting the highly concentrated market for STIR derivatives.
- One of the most actively traded contract was CME Group’s Eurodollar futures, second only to B3 - Brasil Bolsa Balcão’s Interbank deposits futures contract.

Figure 18: STIR Options and Futures

A. Volumes and yearly change



B. Share of volume by region



C. Share of volume by exchange

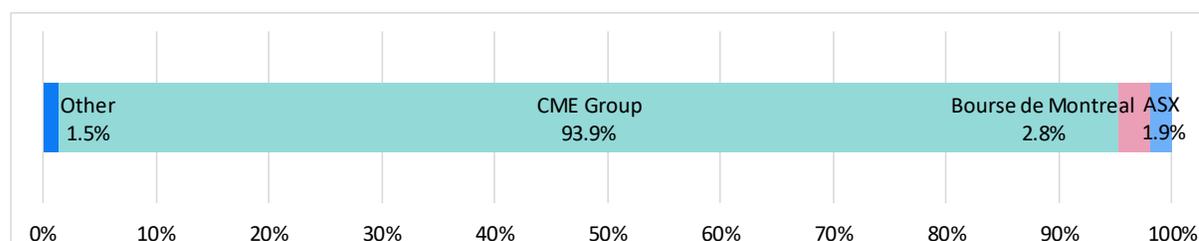


Table II: Top eight exchanges by number of short-term interest rate derivatives contracts traded in 2021

Exchange	Volume		Notional Value		Open interest	
	2021	YoY change	2021	YoY change	2021	YoY change
CME Group	946,353,143	12%	1,082,529,769	-2%	44,011,242	28%
Bourse de Montreal	28,202,328	22%	22,123,698	19%	1,106,283	-8%
ASX Australian Securities Exchange	18,887,693	-15%	13,264,233	-33%	1,102,272	7%
London Stock Exchange	9,204,144	142%	8,172,452	135%	175,359	-51%
Nasdaq Nordic and Baltics	5,503,769	25%	614,396	26%	2,366,300	1%
Moscow Exchange	35,519	-21%	39	-20%	18,293	-29%
Eurex	15,938	-56%	4,535	-59%	3,759	-42%
Borsa Istanbul	7	-95%	1	-97%	0	-100%
Others	0	NA	0	NA	0	NA
<b>Grand Total</b>	<b>1,008,202,541</b>	<b>12.2%</b>	<b>1,126,709,122</b>	<b>-1%</b>	<b>48,783,508</b>	<b>24%</b>

Table 12: Top 10 STIR contracts traded in 2021

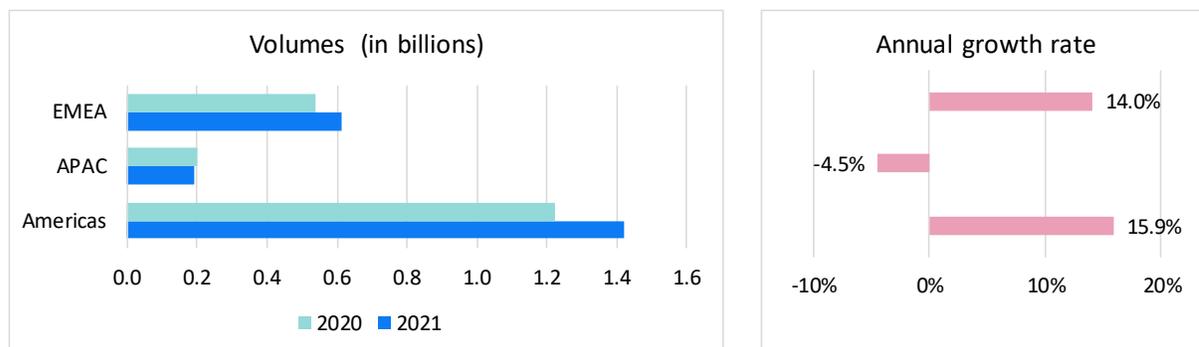
Contract Name	Contract size	Exchange name	Volume 2021	Notional value 2021	Open interest 2021
INTERBANK DEPOSITS FUTURES	NA	B3 - Brasil Bolsa Balcão	654,272,095	10,501,453.06	NA
Eurodollar futures	US\$ 1,000,000	CME Group	609,936,368	609,936,368.00	11,237,037
Eurodollar options	US\$ 1,000,000	CME Group	266,948,140	266,948,140.00	29,517,191
IDI options	NA	B3 - Brasil Bolsa Balcão	142,423,687	1,434.71	NA
3-Month SOFR futures	US\$ 1,000,000	CME Group	34,115,452	341,154.52	162,159.1
Fed Funds futures	US\$ 5,000,000	CME Group	28,229,800	141,149,000.00	1,375,475
BAX futures	CA\$ 1,000,000	Bourse de Montreal	27,825,156	21,840,781.79	971,558
90-Day Bank Bill (IR) futures	A\$1,000,000 face value	ASX Australian Securities Exchange	16,779,668	810,295.87	960,007
1-Month SOFR futures	US\$ 5,000,000	CME Group	5,813,058	29,065,290.00	226,524
ID X IPCA SPREAD FUTURES	NA	B3 - Brasil Bolsa Balcão	5,306,199	123,128.79	NA

## 7.2 LTIR Options and Futures

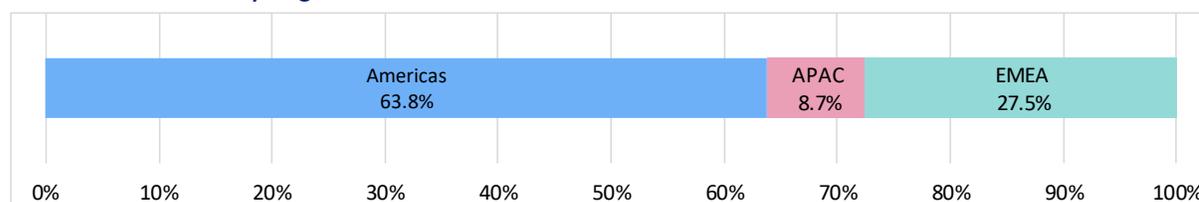
- 2.22 billion LTIR derivatives contracts were traded in 2021, up 13.3% on 2020. LTIR options accounted for 0.5% of total derivatives volumes in 2021 while LTIR futures for 3.1%.
- LTIR futures, which accounted for the highest share (59.8%) of interest rates derivatives, saw volumes going up 12.2%, as well as LTIR options 20.7% on 2020.
- The Americas region, where the majority (63.8%) of LTIR derivatives are traded, witnessed volumes increasing 15.9%. EMEA had the same trend 14%, while APAC volumes fell 4.5%.
- The market remained concentrated, with over half of all volumes traded on a single exchange (CME Group) as the Figure 19C shows.
- The contracts with the highest volumes traded were the CME group's 5 year and 10-year Note futures.

Figure 19: LTIR Options and Futures

A. Volumes and yearly change



B. Share of volume by region



C. Share of volume by exchange

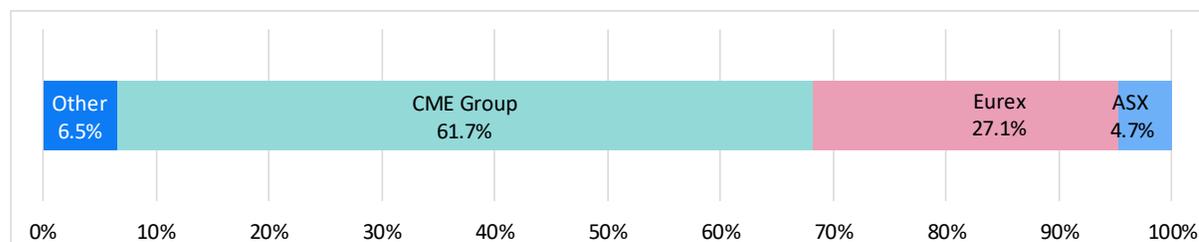


Table 13: Top 10 exchanges by number of long-term interest rate options and futures contracts traded in 2021

Exchange	Volume		Notional Value		Open interest	
	2021	YoY change	2021	YoY change	2021	YoY change
CME Group	1,372,092,367	16%	148,958,403	13%	17,499,007	15%
Eurex	603,179,872	14%	104,066,382	7%	7,144,009	9%
ASX	103,994,290	-9%	7,234,423	-15%	1,972,009	-13%
Korea Exchange	53,562,073	12%	5,188,804	-1%	329,158	-27%
Bourse de Montreal	46,966,196	25%	3,893,380	47%	862,546	15%
China Financial Futures Exchange	25,052,329	4%	4,317,123	7%	0	-100%
Nasdaq Nordic and Baltics	8,763,452	10%	975,521	3%	295,774	88%
Japan Exchange Group	8,382,756	12%	NA	NA	103,953	43%
National Stock Exchange of India	1,696,849	-80%	4,469	-81%	40,392	-16%
Bolsa Mexicana de Valores	465,610	588%	2,301	480%	5,000	25%
Others	559,826	-12%	24	-27%	41,070	11%
<b>Grand Total</b>	<b>2,224,715,620</b>	<b>13.3%</b>	<b>274,640,829</b>	<b>10%</b>	<b>28,292,918</b>	<b>10%</b>

Table 14: Top 10 LTIR contracts traded in 2021

Contract Name	Contract size	Exchange name	Volume 2021	Notional value 2021	Open interest 2021
10-YR NOTE futures	US\$ 100,000	CME Group	468,979,006	46,897,900.60	3,892,557
5-YR NOTE futures	US\$ 100,000	CME Group	281,825,637	28,182,563.70	3,762,216
FUT 8 1/2-10 1/2 Y.GOV.BOND 6%	EUR 100,000	Eurex	202,679,077	39,625,602.49	1,243,915
10-YR NOTE options	US\$ 100,000	CME Group	159,684,869	15,968,486.90	2,103,306
FUT 4 1/2-5 1/2Y.GOV.BONDS 6%	EUR 100,000	Eurex	124,722,358	19043016.99	1364835
2-YR NOTE futures	USD 200,000	CME Group	115,443,732	23,088,746.40	1,959,753
30-YR BOND futures	US\$ 100,000	CME Group	113,417,620	11,341,762.00	1,244,576
Ultra 10-Year Note futures	US\$ 100,000	CME Group	93,791,008	9,379,100.80	1,368,765
FUT 1 3/4-2 1/4 Y.GOV.BONDS 6%	EUR 100,000	Eurex	85,564,863	10,872,560.59	1,254,972
10 Year Bonds (XT) futures	AU\$ 100,000	ASX Australian Securities Exchange	60,125,914	4,114,753.01	1,098,383

## 8 CURRENCY DERIVATIVES

- Currency derivatives increased 20.3% in volumes traded on 2020.
- Volumes mostly consist of currency futures contracts which were up 3.4% on 2020. Currency options volumes experienced the same trend, increasing 78.6% on 2020.
- The APAC region, where the majority of the volumes (52.2%) are traded, saw volumes increase 45.2% on 2020. The Americas region, which accounts for 24.1% in terms of volumes traded, saw the opposite trend with volumes falling 2.7%. The EMEA region, where 23.6% of the currency trading takes place, followed trend with volumes rising 5.6% on 2020.
- In terms of volumes, three exchanges were responsible for 85.8% of the currency derivatives trading: NSE India, Moscow Exchange and B3 - Brasil Bolsa Balcão.
- Regarding contracts traded, NSE India's USDINR options were the most traded by volume.

Figure 20: Volumes of currency derivatives

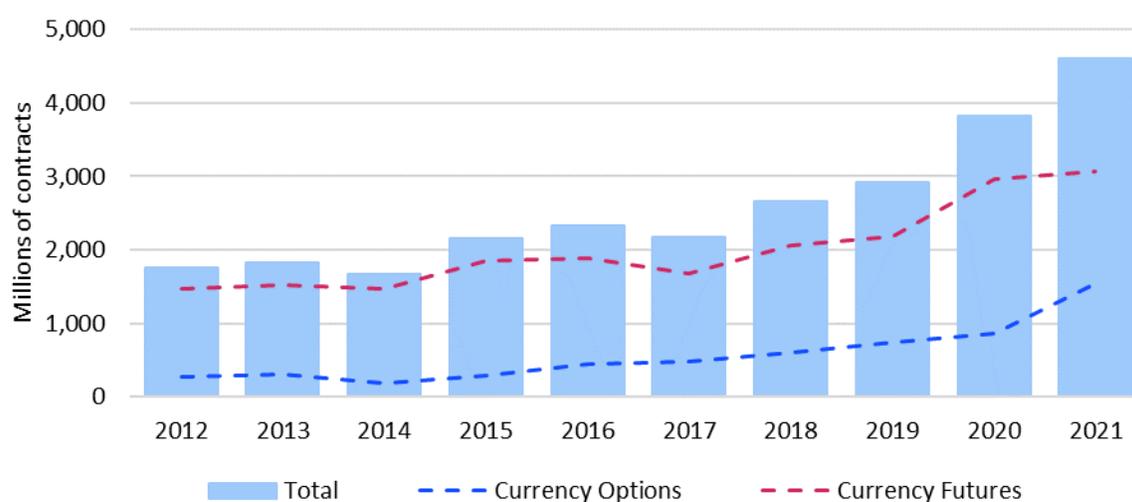
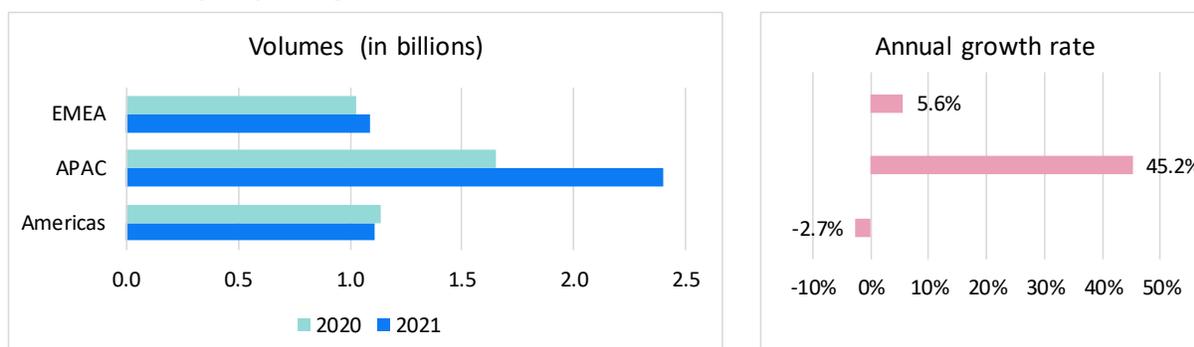
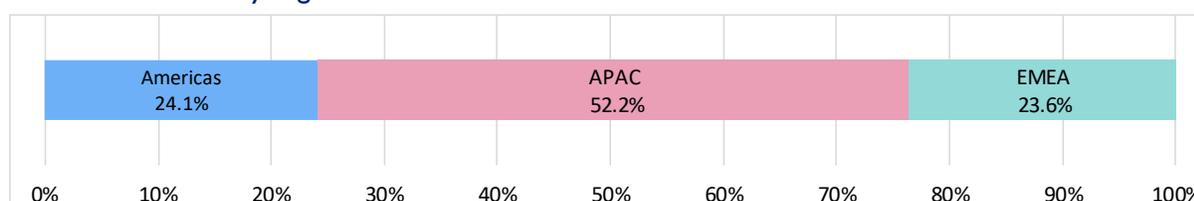


Figure 21: Currency Options and Futures

A. Volumes and yearly change



B. Share of volume by region



C. Share of volume by exchange

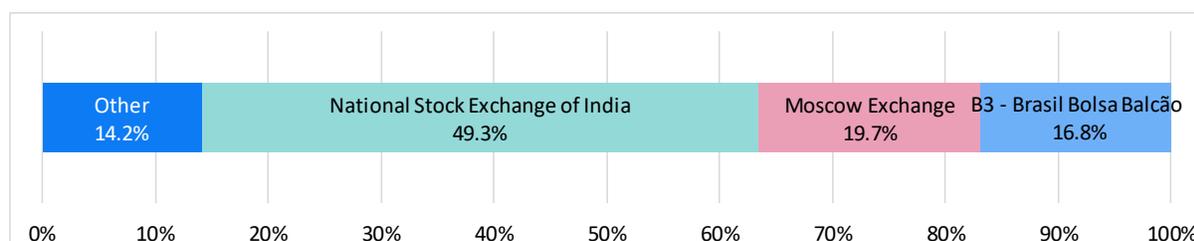


Table 15: Top 10 exchanges by number of currency options and futures contracts traded in 2021

Exchange	Volume		Notional Value		Open interest	
	2021	YoY change	2021	YoY change	2021	YoY change
National Stock Exchange of India	2,267,659,129	50%	2,303,140	47%	9,843,109	29%
Moscow Exchange	906,732,901	4%	920,686	5%	5,005,194	23%
B3 - Brasil Bolsa Balcão	771,574,015	-1%	10,333,376	-6%	2,837,511	-63%
CME Group	201,255,084	-8%	19,339,802	-6%	2,661,130	17%
Matba Rofex	110,771,755	-2%	109,902	4%	4,316,024	11%
Korea Exchange	100,221,006	-7%	965,747	-25%	837,885	-7%
Borsa Istanbul	96,995,469	52%	73,056	15%	2,398,488	-22%
Johannesburg Stock Exchange	51,993,895	-17%	50,029	-31%	6,219,424	-5%
Singapore Exchange	26,569,612	4%	NA	NA	152,628	14%
Bolsa y Mercados Argentinos	11,720,720	-22%	11	-100%	14,120	-15%
Others	51,362,968	1%	5,759,241	259%	2,879,117	71%
<b>Grand Total</b>	<b>4,596,856,554</b>	<b>20.3%</b>	<b>39,854,989</b>	<b>7%</b>	<b>37,164,630</b>	<b>-2%</b>

Table 16: Top 10 currency contracts traded in 2021

Contract Name	Contract size	Exchange name	Volume 2021	Notional value 2021	Open interest 2021
USD/INR options	US\$ 1,000	National Stock Exchange of India	1,458,035,383	1,456,581.36	5,435,868
USD/RUB futures	US\$ 1,000	Moscow Exchange	786,281,346	783,775.63	3,180,409
USD/INR futures	US\$ 1,000	National Stock Exchange of India	664,212,770	662,568.68	4,010,103
US Dollar Futures	US\$ 1,000	Matba Rofex	110,752,360	109,902.25	4,315,493
US Dollar Futures	US\$ 10,000	Korea Exchange	99,118,672	1135.15	798316
USD/TRY futures	US\$ 1,000	Borsa Istanbul	88,359,686	66,371.27	2,291,967
GBP/INR futures	GBP 1,000	National Stock Exchange of India	83,295,871	114,156.85	135,989
US Dollar Futures	US\$ 50,000	B3 - Brasil Bolsa Balcão	70,925,462	3,438,457.96	NA
EUR/RUB futures	EUR 1,000	Moscow Exchange	51,506,136	60,629.25	411,111
EURO FX futures	EUR 125,000	CME Group	49,200,550	7,281,773.65	686,562

## 9 COMMODITY DERIVATIVES

- Commodity derivatives were up 11.5% on 2020, amounting to 10.34 billion in 2021.
- Commodity futures, which accounted for the third most traded derivative, with a share of 15.6%, saw volumes increase by 10.6%. Commodity options had the same trend, with volumes going up 35.7% on 2020.
- Only APAC region experienced growth (21.5%), while the Americas and EMEA regions went down 9.1% and 9.8%, respectively. The major share of commodity derivatives trading takes place on APAC markets (73.9%).
- Three exchanges: (Zhengzhou Commodity Exchange, Shanghai Futures Exchange and Dalian Commodity Exchange) accounted for the majority of trading.

Figure 22: Volumes of commodity options and futures

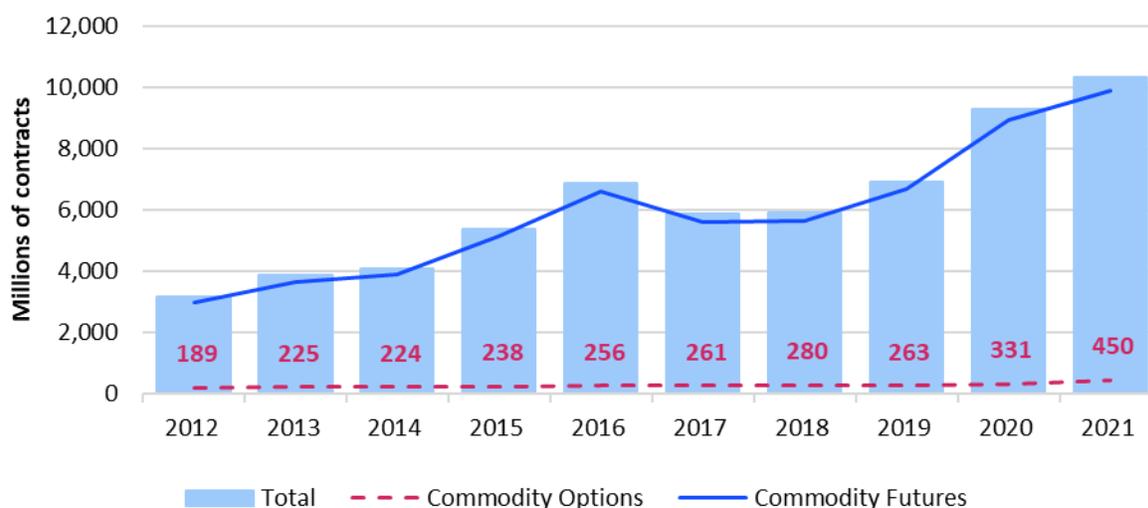
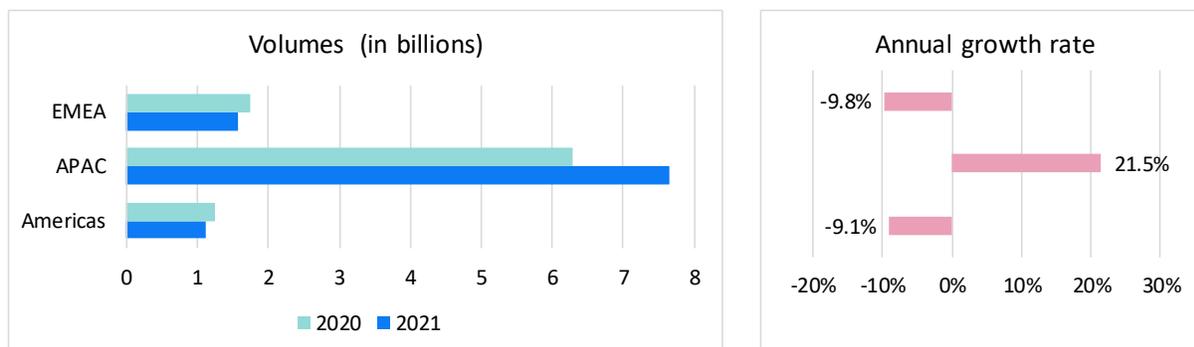
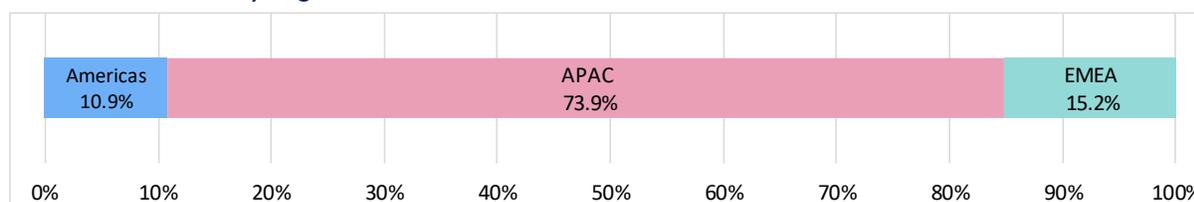


Figure 23: Commodity Options and Futures

A. Volumes and yearly change



B. Share of volume by region



C. Share of volume by exchange

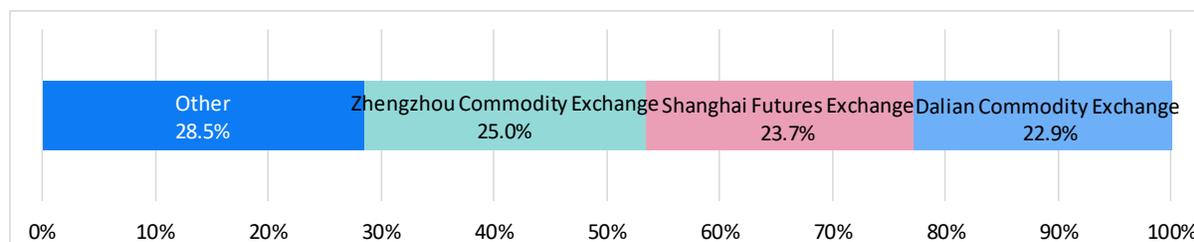


Table 17: Top 10 exchanges by number of commodity options and futures contracts traded in 2021

Exchange	Volume		Notional Value		Open interest	
	2021	YoY change	2021	YoY change	2021	YoY change
Zhengzhou Commodity Exchange	2,581,799,211	52%	16,946,192	84%	8,082,877	-5%
Shanghai Futures Exchange	2,445,774,713	16%	33,669,845	48%	8,261,288	26%
Dalian Commodity Exchange	2,364,418,367	7%	22,039,490	32%	11,240,066	27%
CME Group	1,032,643,593	-9%	65,859,253	21%	21,255,794	-10%
Moscow Exchange	719,098,024	-16%	521,169	39%	1,762,190	2%
ICE Futures Europe	545,487,846	1%	28,636,698	46%	11,540,047	-10%
Multi Commodity Exchange of India	177,994,581	-19%	1,108,418	-7%	328,028	69%
London Metal Exchange	145,037,570	-6%	21,094,338	34%	2,169,772	-8%
Borsa Istanbul	135,088,965	-14%	25,323	-38%	1,059,394	-43%
ICE Futures US	82,536,974	-9%	2,715,696	36%	3,056,811	1%
Others	110,736,475	16%	1,445,294	53%	4,298,435	15%
<b>Grand Total</b>	<b>10,340,616,319</b>	<b>11.5%</b>	<b>194,061,717</b>	<b>36%</b>	<b>73,054,702</b>	<b>0%</b>

Table 18: Top 10 commodity contracts traded in 2021

Contract Name	Contract size	Exchange name	Volume 2021	Notional value 2021	Open interest 2021
SteelRebar futures	10 metric tons/lot	Shanghai Futures Exchange	655,986,710	5,059,811.71	2,553,290
Brent Oil futures	10 metric tons/lot	Moscow Exchange	579,590,791	405,320.86	1,249,240
Soybean Meal futures	10 metric tons/lot	Dalian Commodity Exchange	360,388,172	1,945,925.64	2,214,455
Fuel Oil futures	10 metric tons/lot	Shanghai Futures Exchange	276,993,809	1,105,533.19	493,517
Crude Oil futures	1,000 barrels	CME Group	248,314,481	16598094.72	1866914
Silver futures	15 kilograms/lot	Shanghai Futures Exchange	231,457,606	2,900,167.58	666,393
Soybean Oil futures	10 metric tons/lot	Dalian Commodity Exchange	229,383,502	3,156,111.65	802,216
RBD Palm Olein futures	10 metric tons/lot	Dalian Commodity Exchange	226,614,036	2,870,263.12	608,154
Hot rolled coils futures	10 metric tons/lot	Shanghai Futures Exchange	220,715,917	1,806,355.88	1,015,803
Polypropylene futures	5 metric tons/lot	Dalian Commodity Exchange	208,706,391	1,413,692.20	614,498

## 9.1 Commodity derivatives by type of underlying<sup>5</sup>

This year, in addition to aggregate commodity derivatives trading statistics, granular data on commodity derivatives by underlying commodity has also been collected. The categories of underlying by which commodity derivatives contracts have been classified are as follows:

- Agriculture
- Energy: this includes emissions contracts and ethanol and methanol contracts, to the extent that these are energy-related
- Non-precious metals
- Precious metals
- Index commodity derivatives: a commodity index tracks a basket of commodities. The commodities in the index may all reference a particular underlying category (e.g. agricultural commodities) or a cross-section of commodities
- Other: meant to capture all contracts that do not clearly fall into one of the above-mentioned categories. It includes instruments like freight, plastic-polypropylene and glass contracts.

Key trends from this data are as follows:

- Agriculture and energy accounted for most of the commodity derivatives trading (34.1% and 26.2%, respectively).
- While volumes of energy based derivatives, precious metals and non-precious metals declined 6.2%, 10.6% and 3.2%, respectively, the rest of the commodities went up on 2020: agriculture-based commodities by 4.9%, index commodity derivatives<sup>6</sup> by 201.5% and “other” commodities by 66.2%.
- Volumes of agricultural commodity derivatives rose in the APAC and EMEA<sup>7</sup> regions 7.2% and 628.8%, while the Americas experienced 4.6% decrease. The bulk (82.6%) of contracts trading takes place in APAC, with the Americas accounting for 17.4%. EMEA’s share is negligible.

<sup>5</sup> B3 - Brasil Bolsa Balcão, Euronext, ICE Futures Europe, India International Exchange, Johannesburg Stock Exchange, SPIMEX and Shanghai Futures Exchange did not submit commodities by type of underlying data

<sup>6</sup> This result is due to Multi Commodity Exchange of India entering the market

<sup>7</sup> This result is due to Moscow Stock Exchange.

- Energy derivatives volumes were down 9% in the Americas and 20.6% in EMEA regions, while APAC witnessed its volumes rising 13.2%. The bulk of energy derivatives contracts is traded in APAC (39%), followed by EMEA (31.9%) and the Americas region (29.2%).
- The volumes of non-precious metals registered a decline in APAC and EMEA regions by 2.3% and 6.4%, respectively, while the Americas volumes increased 2.8%. The most trade is hosted by APAC exchanges (70.3%), while the Americas and EMEA account for 4.5% and 25.2% respectively.
- ‘Other’ commodities, precious metals and index commodity derivatives accounted for the remaining share of commodity derivatives volumes of 8%, 6.6% and 0% (negligible) respectively.
- As with other products, there is a large variation in contract sizes across markets. Therefore, the regional shares of volumes traded chart must be interpreted in this context.

Table 19: Breakdown of commodity by underlying

Category	2021 volume	2020 volume	YoY change
Agriculture	2,464,404,915	2,348,625,791	5%
Energy	1,890,430,881	2,015,744,373	-6%
Index commodity derivatives	1,192,558	395,587	201%
Non-precious metals	574,875,187	593,811,889	-3%
Other commodities	1,810,205,211	1,088,975,218	66%
Precious metals	478,233,952	534,925,599	-11%
<b>Grand Total</b>	<b>7,219,342,704</b>	<b>6,582,478,457</b>	<b>9.7%</b>

Figure 24: Share of total volume by type of underlying: 2021 compared to 2020

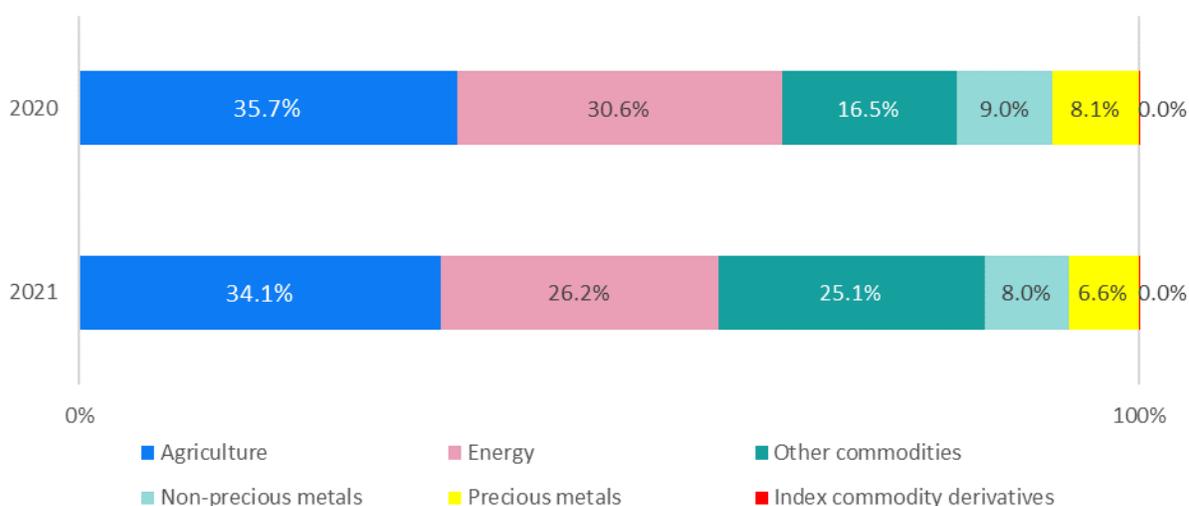


Figure 25: Share of total volume by commodity type and region in 2021

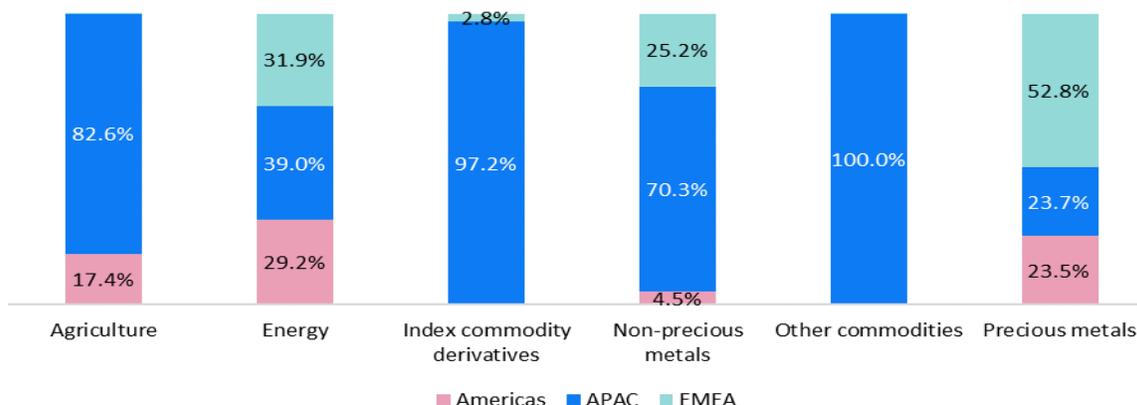


Table 20: Top five exchanges by volumes traded in 2021

Top five exchanges by volumes traded in 2021 and % change on 2020					
Commodity Type	Exchange	Volume	%/'20	Notional Value	%/'20
Agriculture	Dalian Commodity Exchange	1,269,949,044	-3%	10,347,186	27%
	Zhengzhou Commodity Exchange	761,165,307	30%	7,233,716	49%
	CME Group	343,242,358	-4%	13,928,467	31%
	ICE Futures US	82,175,441	-9%	2,655,357	38%
	MIAAX Exchange Group	3,120,772	NA	NA	NA
Energy	Moscow Exchange	601,672,263	-21%	416,464	39%
	CME Group	551,294,357	-9%	33,345,992	52%
	Zhengzhou Commodity Exchange	499,532,108	19%	2,773,473	72%
	Dalian Commodity Exchange	155,127,619	16%	4,170,458	53%
	Multi Commodity Exchange of India	76,043,137	-21%	433,521	27%
Non-precious metals	Dalian Commodity Exchange	192,490,999	-35%	2,327,390	-30%
	Zhengzhou Commodity Exchange	175,719,365	129%	1,199,497	223%
	London Metal Exchange	144,952,860	-6%	21,094,338	33%
	CME Group	26,051,835	3%	2,702,725	56%
	Singapore Exchange	24,267,621	9%	NA	NA
Precious metals	Borsa Istanbul	135,038,473	-14%	25,191	-38%
	Moscow Exchange	117,415,966	16%	104,690	39%
	CME Group	112,055,043	-26%	15,882,069	-22%
	Multi Commodity Exchange of India	89,106,848	-16%	427,992	-33%
	Thailand Futures Exchange	11,961,681	11%	NA	NA
Index commodity derivatives	Multi Commodity Exchange of India	1,149,284	216%	11,624	206%
	Eurex	33,133	3%	2,059	44%
	Japan Exchange Group	10,141	NA	162	NA
Other commodities	Zhengzhou Commodity Exchange	1,063,206,513	71%	5,729,064	141%
	Dalian Commodity Exchange	746,850,705	60%	5,194,455	104%
	Nasdaq Nordic and Baltics	81,873	-21%	778	8%
	Singapore Exchange	66,120	-94%	NA	NA

## 10 OTHER OPTIONS & FUTURES

Other options and futures include products which do not fall into the categories that have been analyzed above such as index volatility options and futures, dividend options and futures, and inflation indexed derivatives.

In 2021 only “other” futures were traded. Volumes traded were 27.6% down on 2020.

The volume of other futures fell 15.8% in APAC. Exchanges in the Americas and EMEA regions do not have this product line. LSE London Stock Exchange stopped this line at the end of 2020.

The decline was due to falling volumes of Japan Stock Exchange and to a lesser extent of Singapore Exchange.

Table 21: Exchanges by number of ‘other’ futures contracts traded in 2021

Exchange	Volume		Notional Value		Open interest	
	2021	YoY change	2021	YoY change	2021	YoY change
Japan Exchange Group	911,039	-14%	15,148	-13%	110,655	17%
Singapore Exchange	42,668	-42%	NA	NA	12,747	-15%
LSE London Stock Exchange	0	-100%	0	-100%	0	-100%
<b>Grand Total</b>	<b>953,707</b>	<b>-27.6%</b>	<b>15,148</b>	<b>-14%</b>	<b>123,402</b>	<b>-42%</b>

## 10 ANNEX 1 – LIST OF EXCHANGES THAT CONTRIBUTED TO THE REPORT

ASX Australian Securities Exchange	Japan Exchange Group
Athens Stock Exchange	Johannesburg Stock Exchange
B3 - Brasil Bolsa Balcão	Korea Exchange
BME Spanish Exchanges	London Metal Exchange
Bolsa de Valores de Colombia	LSE London Stock Exchange
Bolsa Mexicana de Valores	Matba Rofex
Bolsa y Mercados Argentinos	MIAX Exchange Group
Borsa Istanbul	Moscow Exchange
Bourse de Montreal	Multi Commodity Exchange of India
Budapest Stock Exchange	Nasdaq - US
Bursa Malaysia Derivatives	Nasdaq Nordic and Baltics
Cboe Futures Exchange	National Stock Exchange of India
Cboe Global Markets	NYSE
China Financial Futures Exchange	NZX Limited
CME Group	Shanghai Futures Exchange
Dalian Commodity Exchange	Shanghai Stock Exchange
Dubai Gold and Commodities Exchange	Shenzhen Stock Exchange
Eurex	Singapore Exchange
Euronext	Taiwan Futures Exchange
Hong Kong Exchanges and Clearing	Tehran Stock Exchange
ICE Futures Europe	Tel-Aviv Stock Exchange
ICE Futures US	Thailand Futures Exchange
India International Exchange	The Saint-Petersburg International Mercantile Exchange
International Securities Exchange	Warsaw Stock Exchange
Iran Fara Bourse Securities Exchange	Zhengzhou Commodity Exchange

## 11 ANNEX 2 – LIST OF EXCHANGES THAT PROVIDED GRANULAR DATA

ASX Australian Securities Exchange	London Metal Exchange
B3 - Brasil Bolsa Balcão	LSE London Stock Exchange
BME Spanish Exchanges	Matba Rofex
Bolsa de Valores de Colombia	MIAX Exchange Group
Bolsa y Mercados Argentinos	Moscow Exchange
Borsa Istanbul	Multi Commodity Exchange of India
Bourse de Montreal	Nasdaq - US
Budapest Stock Exchange	Nasdaq Nordic and Baltics
Cboe Global Markets	National Stock Exchange of India
China Financial Futures Exchange	NZX Limited
CME Group	Pakistan Stock Exchange
Dalian Commodity Exchange	Shanghai Futures Exchange
Dubai Gold and Commodities Exchange	Shenzhen Stock Exchange

Eurex	Singapore Exchange
Euronext	Taiwan Futures Exchange
Hong Kong Exchanges and Clearing	Tehran Stock Exchange
ICE Futures US	Tel-Aviv Stock Exchange
Iran Fara Bourse Securities Exchange	Thailand Futures Exchange
Japan Exchange Group	The Saint-Petersburg International Mercantile Exchange
Korea Exchange	Warsaw Stock Exchange

## 12 ANNEX 3 – TRADING STATISTICS

The volume/number of contracts traded and the open interest are reported in full numbers. The notional value of the contracts traded is reported in millions of US dollars. Where we did not receive data from the exchanges and were not able to supplement the missing data from other sources, this is mentioned under the relevant tables or reflected as “NA” for “not available”

**Volume** (full number) is the number of contracts traded. A contract is a standard unit of trading denoted by the number of shares or the amount of capital that may vary from class to class, or from product to product, as defined by the exchange.

**Notional Value** (million USD) is the number of contracts traded multiplied by the contracts’ underlying value. Contracts underlying value is calculated by multiplying the market price of the underlying asset for each contract times the contract’s multiplier. It is an approximate measure of the underlying value of the number of contracts traded.

**Open Interest** (full number) is defined as the number of contracts outstanding at a given time (close of trading at the last trading day of the year)

Where we did not receive data from the exchanges and were not able to supplement the missing data from other sources, this is mentioned under the relevant tables or reflected as “NA” for “not available”.

## 12.1 Product level data tables

### Single Stock Options

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>Americas</b>						
B3 - Brasil Bolsa Balcão	1,835,383,463	1,459,181,587	393,631	699,884	48,206,676	46,530,971
Bolsa Mexicana de Valores	286,851	150,692	35	16	1,250	2,420
Bolsa y Mercados Argentinos	61,496,436	49,006,772	275	258	740,598	628,530
Bourse de Montreal	33,798,686	25,059,590	169,816	109,361	6,131,304	4,177,270
Cboe Global Markets	1,714,980,943	1,287,889,878	NA	NA	326,576,982	265,226,043
International Securities Exchange	842,042,322	627,754,633	NA	NA	NA	NA
MIAX Exchange Group	963,410,916	507,985,576	21,143,276	9,573,574	NA	NA
Nasdaq - US	2,337,412,860	1,702,761,434	NA	NA	NA	NA
NYSE	1,231,950,440	782,351,153	176,933	362,895	NA	NA
<b>APAC</b>						
ASX Australian Securities Exchange	55,501,640	58,196,424	123,552	124,084	4,770,973	5,507,751
Hong Kong Exchanges and Clearing	157,074,267	129,601,933	885,042	551,546	7,897,040	8,860,221
Japan Exchange Group	57,349	91,330	NA	NA	5,281	15,244
Korea Exchange	19,731,241	4,635,452	NA	NA	353,344	21,504
National Stock Exchange of India	598,412,296	272,134,027	7,003,360	2,719,053	979,759	914,728
Taiwan Futures Exchange	99,390	124,732	1,248	840	2,304	4,337
<b>EMEA</b>						
Athens Stock Exchange	17,777	15,538	17	10	539	606
BME Spanish Exchanges	13,938,009	19,393,317	13,994	20,670	4,359,408	6,257,121
Borsa Istanbul	10,926,398	5,328,340	679	482	1,502,382	639,613
Eurex	201,529,915	189,106,929	929,148	929,810	52,301,492	49,863,712
Euronext	84,868,421	69,478,712	374,280	289,668	19,336,315	12,519,273
ICE Futures Europe	12,892,849	9,327,100	200,510	213,628	2,588,171	2,235,484
Johannesburg Stock Exchange	5,899,121	10,693,928	5,379	7,449	937,700	2,044,047
LSE Group London Stock Exchange	-	12,130,416	-	43,367	-	3,581,628
Moscow Exchange	2,800,825	1,770,677	1,000	409	253,212	200,350
Nasdaq Nordic and Baltics	18,765,005	17,826,448	39,650	32,444	-	-
Tel-Aviv Stock Exchange	1,222,328	747,341	-	2,591	113,233	58,221
<b>Grand Total</b>	<b>10,204,499,748</b>	<b>7,242,743,959</b>	<b>31,461,825</b>	<b>15,682,037</b>	<b>477,057,963</b>	<b>409,289,074</b>

## Single Stock Futures

	Volume		Notional Value		Open interest	
	2021	2020	USD 2021	USD 2020	2021	2020
<b>Americas</b>						
B3 - Brasil Bolsa Balcão	939,130,833	358,034,705	3,568	1,693	30,823,900	22,146,700
Bolsa de Valores de Colombia	161,221	161,653	156	191	13,135	11,659
Bolsa Mexicana de Valores	29,554	31,150	6	5	2,630	2,064
Bourse de Montreal	22,359,988	11,707,465	112,344	51,092	479,000	297,160
Matba Rofex	764,808	820,444	157	124	3,364	3,637
<b>APAC</b>						
ASX Australian Securities Exchange	873,732	2,893,184	1,458	3,360	53,500	354,922
Hong Kong Exchanges and Clearing	2,368,936	1,123,460	14,008	6,295	28,822	22,564
Korea Exchange	1,224,916,827	1,127,006,372	932,929	732,324	6,331,508	6,859,116
National Stock Exchange of India	252,568,663	256,437,505	2,852,311	2,270,043	2,644,078	1,568,297
Singapore Exchange	2,921,336	2,661,357	NA	NA	39,643	46,208
Taiwan Futures Exchange	74,994,818	25,837,101	582,949	242,706	528,576	373,047
Thailand Futures Exchange	70,326,055	47,386,674	NA	NA	3,221,487	1,783,284
<b>EMEA</b>						
Athens Stock Exchange	11,513,211	9,500,346	2,345	1,829	297,989	352,787
BME Spanish Exchanges	11,492,674	11,106,218	4,446	3,752	1,771,617	1,329,543
Borsa Istanbul	1,748,803,926	1,196,068,823	117,664	104,381	11,769,481	8,211,995
Budapest Stock Exchange	94,825	135,067	673	844	6,085	4,356
Dubai Gold and Commodities Exchange	63,261	79,950	231	161	166	180
Eurex	102,877,662	84,202,536	428,719	374,794	10,549,222	7,987,047
Euronext	20,337,375	27,341,284	91,452	118,048	1,149,835	646,826
ICE Futures Europe	18,318,579	11,439,230	1,416,703	1,164,429	124,053	237,070
Johannesburg Stock Exchange	25,031,971	17,152,630	23,719	10,800	2,273,733	1,813,745
LSE Group London Stock Exchange	-	1,107,832	-	3,356	-	48,364
Moscow Exchange	284,110,558	197,848,300	94,858	53,457	3,179,752	1,160,880
Nasdaq Nordic and Baltics	1,546,703	1,976,852	3,306	3,916	-	-
Warsaw Stock Exchange	2,267,567	2,466,161	4,854	4,450	36,043	32,558
<b>Grand Total</b>	<b>4,817,875,083</b>	<b>3,394,526,299</b>	<b>6,688,857</b>	<b>5,152,047</b>	<b>75,327,619</b>	<b>55,294,009</b>

## Stock Index Options

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>Americas</b>						
B3 - Brasil Bolsa Balcão	70,233,383	65,319,689	113,311	403,216	447,610	499,493
Bolsa Mexicana de Valores	3,058	7,650	72	152	78	168
Bourse de Montreal	-	30,816	-	238	12,820	13,160
Cboe Global Markets	496,585,744	459,030,881	NA	NA	22,193,282	19,753,530
CME Group	190,363,339	180,014,245	42,863,133	31,234,752	3,842,514	2,422,117
Matba Rofex	8,104	9,039	0	0	-	-
MIAX Exchange Group	69,399	267,046	184	587	NA	NA
Nasdaq - US	6,636,854	3,388,337	NA	NA	NA	NA
<b>APAC</b>						
ASX Australian Securities Exchange	5,066,707	8,068,464	257,711	380,621	328,793	381,541
Bursa Malaysia Derivatives	6,929	8,873	1	1	170	212
China Financial Futures Exchange	30,241,547	16,742,777	39,011	20,921	195,960	143,125
Hong Kong Exchanges and Clearing	24,050,256	36,048,593	2,440,488	2,425,829	1,209,382	1,697,059
India International Exchange	166,689,177	67,999,137	NA	NA	565	67
Japan Exchange Group	25,354,187	29,608,298	NA	NA	1,194,989	1,332,791
Korea Exchange	758,533,660	737,930,851	62,650,014	50,044,301	2,654,019	2,222,084
National Stock Exchange of India	13,889,063,127	6,667,958,460	172,588,703	61,001,669	4,323,597	3,835,527
Singapore Exchange	5,708,091	8,426,794	NA	NA	1,112,764	1,375,430
Taiwan Futures Exchange	197,532,656	201,912,292	5,986,865	4,317,894	368,100	408,338
Thailand Futures Exchange	1,742,858	1,698,625	NA	NA	47,401	26,380
<b>EMEA</b>						
Athens Stock Exchange	37,856	36,545	180	155	566	1,542
BME Spanish Exchanges	1,489,234	2,436,534	14,343	23,714	395,975	378,385
Borsa Istanbul	414,843	352,822	528	640	68,163	27,202
Eurex	365,199,107	450,874,513	14,503,112	16,758,695	44,343,990	46,807,254
Euronext	18,304,553	19,970,890	1,422,652	1,276,447	618,824	509,702
ICE Futures Europe	9,881,237	10,205,474	17,263	26,162	1,606,121	1,804,234
Johannesburg Stock Exchange	2,590,730	3,790,277	37,454	40,630	474,342	810,679
LSE Group London Stock Exchange	-	2,317,553	-	142,776	-	215,710
Moscow Exchange	18,452,752	18,522,886	58,411	45,162	302,412	238,142
Nasdaq Nordic and Baltics	4,785,158	7,418,706	117,991	148,370	-	-
Tel-Aviv Stock Exchange	26,090,837	28,044,073	1,441,716	2,108,614	163,431	198,880
Warsaw Stock Exchange	277,995	374,491	1,485	1,784	10,389	18,977
<b>Grand Total</b>	<b>16,315,413,378</b>	<b>9,028,815,631</b>	<b>304,554,626</b>	<b>170,403,329</b>	<b>85,916,257</b>	<b>85,121,729</b>

## Stock Index Futures

	Volume		Notional Value		Open interest	
	2021	2020	USD 2021	USD 2020	2021	2020
<b>Americas</b>						
B3 - Brasil Bolsa Balcão	4,635,926,846	2,929,801,044	21,259,755	12,992,454	1,161,892	919,804
Bolsa de Valores de Colombia	75,369	85,787	61	78	4,946	3,935
Bolsa Mexicana de Valores	371,894	595,100	8,973	11,575	12,112	12,059
Bolsa y Mercados Argentinos	183,859	409,103	105	223	-	4,365
Bourse de Montreal	7,383,037	8,249,988	1,364,522	1,233,413	281,209	307,939
Cboe Futures Exchange	58,051,439	50,748,304	NA	NA	294,533	299,570
CME Group	1,199,850,886	1,249,348,285	156,902,744	132,277,903	4,216,814	4,194,048
ICE Futures US	53,537,356	62,162,882	4,431,613	3,857,081	1,883,178	1,771,122
Matba Rofex	1,085,885	2,195,099	977	1,524	2,093	1,588
MIAX Exchange Group	752,259	NA	NA	NA	NA	NA
<b>APAC</b>						
ASX Australian Securities Exchange	13,677,253	18,655,322	1,736,235	2,100,243	243,015	277,267
Bursa Malaysia Derivatives	2,700,398	3,497,417	49,520	64,657	28,926	26,493
China Financial Futures Exchange	66,739,287	74,503,560	14,185,395	13,624,884	580,099	510,065
Hong Kong Exchanges and Clearing	100,555,940	111,708,581	10,646,408	10,004,539	675,762	566,431
India International Exchange	5,151,654	6,351,845	NA	NA	630	586
Japan Exchange Group	281,426,655	394,062,023	14,339,735	17,136,463	1,248,898	1,452,884
Korea Exchange	118,261,251	152,981,643	6,758,521	6,822,667	564,970	658,409
National Stock Exchange of India	89,406,776	131,006,553	1,108,912	1,162,849	4,323,597	298,620
Singapore Exchange	169,113,478	185,255,365	NA	NA	1,468,648	1,378,504
Taiwan Futures Exchange	118,411,890	111,724,998	7,531,968	5,300,665	162,218	177,537
Thailand Futures Exchange	47,620,961	57,465,829	NA	NA	365,177	306,796
<b>EMEA</b>						
Athens Stock Exchange	300,115	422,831	1,417	1,766	2,568	5,648
BME Spanish Exchanges	6,228,750	7,540,860	526,567	566,817	87,705	103,542
Borsa Istanbul	95,121,918	101,909,893	119,217	177,634	353,312	498,868
Budapest Stock Exchange	439,415	732,200	648	923	7,162	5,137
Eurex	427,873,692	599,856,672	22,792,243	28,572,954	10,210,973	10,648,598
Euronext	35,947,532	40,444,648	3,297,218	3,302,778	584,129	585,114
ICE Futures Europe	27,624,657	10,560,856	3,099,182	3,351,551	838,807	1,046,827
Johannesburg Stock Exchange	12,372,550	14,743,500	312,138	315,585	282,107	378,895
LSE Group London Stock Exchange	-	9,369,803	-	874,476	-	70,613
Moscow Exchange	170,198,291	171,817,651	521,374	402,714	643,300	464,474
Nasdaq Nordic and Baltics	33,081,443	43,981,624	817,515	856,131	-	-
Tel-Aviv Stock Exchange	NA	2	NA	NA	NA	NA
Warsaw Stock Exchange	5,456,107	6,206,525	58,127	58,187	37,826	38,399
<b>Grand Total</b>	<b>7,784,928,843</b>	<b>6,558,395,793</b>	<b>271,871,095</b>	<b>245,072,732</b>	<b>30,566,606</b>	<b>27,014,137</b>

## ETF Options

	Volume		Notional Value		Open interest	
	2021	2020	USD 2021	USD 2020	2021	2020
<b>Americas</b>						
B3 - Brasil Bolsa Balcão	493,471,938	379,833,133	561,912,395	64,190,117	1,114,405	1,669,113
Bourse de Montreal	11,265,989	9,359,748	26,533	17,817	2,405,678	1,373,685
Cboe Global Markets	826,073,570	816,439,054	NA	NA	103,733,635	104,455,213
International Securities Exchange	329,800,845	341,224,715	NA	NA	NA	NA
MIAX Exchange Group	374,702,044	319,202,020	11,074,513	7,204,816	NA	NA
Nasdaq - US	882,371,533	877,234,171	NA	NA	NA	NA
NYSE	523,030,286	508,267,613	43,826	150,712	NA	NA
<b>APAC</b>						
Hong Kong Exchanges and Clearing	962,326	1,419,223	11,531	14,442	80,518	82,285
Japan Exchange Group	1,975,596	1,255,777	NA	NA	22,730	43,779
Shanghai Stock Exchange	1,097,391,508	982,491,879	7,222,957	5,641,952	4,845,106	4,075,437
Shenzhen Stock Exchange	58,219,773	NA	462,519	NA	317,421	NA
Singapore Exchange	3	NA	NA	NA	NA	NA
Taiwan Futures Exchange	89,927	136,200	1,050	1,437	2,044	1,819
<b>EMEA</b>						
Eurex	403,219	470,433	2,642	3,911	62,188	132,998
Moscow Exchange	73,672	NA	32	NA	5,002	NA
<b>Grand Total</b>	<b>4,599,832,229</b>	<b>4,237,333,966</b>	<b>580,757,999</b>	<b>77,225,206</b>	<b>112,588,727</b>	<b>111,834,329</b>

## ETF Futures

	Volume		Notional Value		Open interest	
	2021	2020	USD 2021	USD 2020	2021	2020
<b>APAC</b>						
Hong Kong Exchanges and Clearing	13,836	18,269	200	205	489	401
Taiwan Futures Exchange	731,619	915,305	27,272	19,839	9,128	17,263
<b>EMEA</b>						
Moscow Exchange	16,746,077	NA	7,401	NA	186,816	NA
<b>Grand Total</b>	<b>17,491,532</b>	<b>933,574</b>	<b>34,873</b>	<b>20,044</b>	<b>196,433</b>	<b>17,664</b>

## Long Term Interest Rate Options

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>Americas</b>						
Bourse de Montreal	4,965	26,740	390	2,101	1,291	782
CME Group	232,956,373	191,967,690	23,319,592	19,401,710	3,507,804	3,167,864
<b>APAC</b>						
ASX Australian Securities Exchange	48,557	398,333	3,521	30,641	-	-
Japan Exchange Group	193,708	323,210	NA	NA	1,159	3,710
National Stock Exchange of India	NA	453,937	NA	1,258	NA	-
<b>EMEA</b>						
Eurex	53,098,114	44,384,040	9,563,969	8,368,526	1,868,464	1,878,303
Nasdaq Nordic and Baltics	5,624,696	4,375,811	625,588	509,694	81,771	-
<b>Grand Total</b>	<b>291,926,413</b>	<b>241,929,761</b>	<b>33,513,060</b>	<b>28,313,930</b>	<b>5,460,489</b>	<b>5,050,659</b>

## Long Term Interest Rate Futures

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>Americas</b>						
Bolsa Mexicana de Valores	465,610	67,631	2,301	397	5,000	4,000
Bourse de Montreal	46,961,231	37,637,279	3,892,990	2,650,054	861,255	746,676
CME Group	1,139,135,994	995,304,805	125,638,811	112,386,614	13,991,203	11,999,085
<b>APAC</b>						
ASX Australian Securities Exchange	103,945,733	113,554,831	7,230,902	8,434,666	1,972,009	2,258,503
China Financial Futures Exchange	25,052,329	24,035,059	4,317,123	4,039,976	-	201,548
Japan Exchange Group	8,189,048	7,149,719	NA	NA	102,794	68,798
Korea Exchange	53,562,073	47,831,791	5,188,804	5,252,860	329,158	448,127
National Stock Exchange of India	1,696,849	8,107,442	4,469	22,513	40,392	48,219
Singapore Exchange	385,778	404,381	NA	NA	15,761	13,786
<b>EMEA</b>						
Eurex	550,081,758	484,096,166	94,502,412	89,004,038	5,275,545	4,651,156
Moscow Exchange	174,048	234,267	24	32	25,309	23,253
Nasdaq Nordic and Baltics	3,138,756	3,619,470	349,933	441,731	214,003	157,742
<b>Grand Total</b>	<b>1,932,789,207</b>	<b>1,722,042,841</b>	<b>241,127,769</b>	<b>222,232,880</b>	<b>22,832,429</b>	<b>20,620,893</b>

### Short Term Interest Rate Options

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>Americas</b>						
Bourse de Montreal	354,857	26,740	278,538	561,517	133,399	55,763
CME Group	266,957,096	267,598,349	266,957,096	291,388,421	29,523,497	23,288,571
<b>EMEA</b>						
Eurex	-	1,260	-	381	50	950
Nasdaq Nordic and Baltics	450,000	470,000	50,963	54,746	190,000	280,000
<b>Grand Total</b>	<b>267,761,953</b>	<b>268,096,349</b>	<b>267,286,596</b>	<b>292,005,064</b>	<b>29,846,946</b>	<b>23,625,284</b>

### Short Term Interest Rate Futures

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>Americas</b>						
Bourse de Montreal	27,847,471	23,039,200	21,845,161	18,090,640	972,884	1,153,017
CME Group	679,396,047	577,205,875	815,572,673	807,885,059	14,487,745	10,966,533
<b>APAC</b>						
ASX Australian Securities Exchange	18,887,693	22,109,497	13,264,233	19,824,236	1,102,272	1,033,007
Hong Kong Exchanges and Clearing	-	314	-	50	-	15
<b>EMEA</b>						
Borsa Istanbul	7	147	1	20	-	1
Eurex	15,938	35,317	4,535	10,654	3,709	5,584
LSE Group London Stock Exchange	9,204,144	3,801,150	8,172,452	3,484,969	175,359	361,291
Moscow Exchange	35,519	44,690	39	48	18,293	25,642
Nasdaq Nordic and Baltics	5,053,769	3,930,729	563,434	432,983	2,176,300	2,070,700
<b>Grand Total</b>	<b>740,440,588</b>	<b>630,166,919</b>	<b>859,422,526</b>	<b>849,728,661</b>	<b>18,936,562</b>	<b>15,615,790</b>

## Currency Options

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>Americas</b>						
B3 - Brasil Bolsa Balcão	5,153,069	6,689,668	4,814	5,701	563,299	980,527
Bolsa de Valores de Colombia	1,158	518	0	1	248	1
Bolsa Mexicana de Valores	29,215	78,081	294	799	-	80
Bourse de Montreal	16,725	24,460	131	192	3,226	2,869
CME Group	9,330,163	10,220,337	1,058,744	1,163,136	792,843	538,509
ICE Futures US	3,394	3,969	316	377	864	731
Matba Rofex	19,391	18,664	0	0	531	177
<b>APAC</b>						
Hong Kong Exchanges and Clearing	5,496	8,969	550	902	1,489	2,483
India International Exchange	NA	206,585	NA	NA	NA	NA
National Stock Exchange of India	1,460,358,605	777,300,762	1,459,685	790,103	5,455,333	3,717,061
Singapore Exchange	4,800	3,802	NA	NA	1,294	1,185
Taiwan Futures Exchange	7	25,723	1	778	-	662
<b>EMEA</b>						
Borsa Istanbul	748,351	960,535	497	881	32,593	52,875
Budapest Stock Exchange	12,900	16,050	13	18	1,000	200
Dubai Gold and Commodities Exchange	11,904	893	1	0	453	-
Eurex	20	-	2	-	-	-
Johannesburg Stock Exchange	19,667,448	26,978,918	18,862	31,258	3,109,712	3,285,812
Moscow Exchange	26,435,511	22,478,621	26,918	22,338	2,175,382	985,758
Tel-Aviv Stock Exchange	11,693,938	13,638,913	122,270	147,266	515,193	482,903
<b>Grand Total</b>	<b>1,533,492,095</b>	<b>858,655,468</b>	<b>2,693,098</b>	<b>2,163,749</b>	<b>12,653,460</b>	<b>10,051,833</b>

## Currency Futures

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>Americas</b>						
B3 - Brasil Bolsa Balcão	766,420,946	774,468,373	10,328,562	11,000,050	2,274,212	6,775,520
Bolsa de Valores de Colombia	354,939	312,341	14,693	15,116	21,134	11,576
Bolsa Mexicana de Valores	6,679,704	5,917,106	67,215	63,330	799,320	473,752
Bolsa y Mercados Argentinos	11,720,720	15,114,053	11	7,594	14,120	16,698
CME Group	191,924,921	207,777,713	18,281,058	19,384,705	1,868,287	1,735,102
ICE Futures US	7,027,820	6,223,067	5,254,273	1,018,839	91,212	47,439
Matba Rofex	110,752,364	112,807,551	109,902	105,539	4,315,493	3,901,528
<b>APAC</b>						
Hong Kong Exchanges and Clearing	2,610,944	1,941,375	178,620	182,622	22,617	28,612
India International Exchange	239,938	923,357	NA	NA	76	182
Korea Exchange	100,221,006	108,003,067	965,747	1,286,585	837,885	899,781
National Stock Exchange of India	807,300,524	736,684,226	843,455	776,189	4,387,776	3,936,656
Singapore Exchange	26,564,812	25,466,157	NA	NA	151,334	132,670
Taiwan Futures Exchange	178,024	413,965	5,046	12,715	972	2,291
Thailand Futures Exchange	3,449,751	2,803,128	NA	NA	115,457	44,059
<b>EMEA</b>						
BME Spanish Exchanges	25,130	18,165	281	219	924	1,126
Borsa Istanbul	96,247,118	62,724,188	72,559	62,881	2,365,895	3,006,045
Budapest Stock Exchange	7,523,763	5,495,124	8,230	6,299	804,715	513,976
Dubai Gold and Commodities Exchange	6,784,458	12,147,872	38,023	80,545	127,513	33,957
Eurex	730,265	613,810	65,289	74,846	50,348	38,975
Johannesburg Stock Exchange	32,326,447	35,970,625	31,167	41,424	3,109,712	3,285,812
Moscow Exchange	880,297,390	847,605,832	893,768	856,057	2,829,812	3,096,726
Warsaw Stock Exchange	3,983,475	-	3,993	-	322,356	NA
<b>Grand Total</b>	<b>3,063,364,459</b>	<b>2,963,431,095</b>	<b>37,161,891</b>	<b>34,975,556</b>	<b>24,511,170</b>	<b>27,982,483</b>

## Commodity Options

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>Americas</b>						
B3 - Brasil Bolsa Balcão	877,725	1,475,744	348	3,398	180,295	63,632
CME Group	143,416,353	148,936,954	8,162,776	6,826,950	9,059,867	9,748,660
ICE Futures US	13,525,970	12,678,268	524,960	317,564	1,262,083	1,023,077
Matba Rofex	137,909	105,499	96	131	17,884	22,314
MIAX Exchange Group	123,079	NA	NA	NA	NA	NA
<b>APAC</b>						
ASX Australian Securities Exchange	105,576	107,268	21,018	16,286	52,854	47,582
Bursa Malaysia Derivatives	95,205	63,626	-	-	15,910	14,503
Dalian Commodity Exchange	102,389,844	57,321,146	17,126	7,623	1,490,784	929,181
Multi Commodity Exchange of India	17,492,627	2,829,026	154,642	39,532	29,975	9,255
National Stock Exchange of India	325,345	356,543	2,101	2,482	3,779	2,169
NZX Limited	20,334	79,087	84	273	-	15,450
Shanghai Futures Exchange	30,409,566	NA	13,664	NA	165,066	NA
Singapore Exchange	3,624,245	4,049,710	NA	NA	489,444	449,297
Taiwan Futures Exchange	27,087	42,522	297	475	169	246
Zhengzhou Commodity Exchange	82,175,918	40,138,091	10,443	3,620	789,416	804,432
<b>EMEA</b>						
Eurex	1,453,497	7,731,718	4,788	27,311	60,112	162,342
Euronext	2,443,898	1,411,927	37,884	18,431	395,256	244,407
ICE Futures Europe	37,486,177	37,343,889	65,949	57,277	3,592,144	3,377,701
Johannesburg Stock Exchange	246,067	276,216	269	194	26,240	48,256
London Metal Exchange	6,886,274	6,073,964	1,032,374	675,629	468,156	317,255
Moscow Exchange	6,303,671	10,202,469	4,370	4,335	62,296	52,500
<b>Grand Total</b>	<b>449,566,367</b>	<b>331,223,667</b>	<b>10,053,188</b>	<b>8,001,510</b>	<b>18,161,730</b>	<b>17,332,259</b>

## Commodity Futures

	Volume		Notional Value		Open interest	
	2021	2020	USD 2021	USD 2020	2021	2020
<b>Americas</b>						
B3 - Brasil Bolsa Balcão	4,410,478	2,615,894	44,393	20,648	164,893	77,643
Bolsa de Valores de Colombia	72	298	1	2	26	46
CME Group	889,227,240	992,046,293	57,696,477	47,765,842	12,195,927	13,814,153
ICE Futures US	69,011,004	78,287,820	2,190,736	1,676,968	1,794,728	1,997,476
Matba Rofex	873,953	1,480,073	12,478	8,403	70,953	53,898
MIAX Exchange Group	2,997,693	NA	NA	NA	NA	NA
<b>APAC</b>						
ASX Australian Securities Exchange	1,134,584	843,099	37,171	29,256	178,672	168,925
Bursa Malaysia Derivatives	15,608,075	14,606,684	368,703	240,170	208,681	165,594
Dalian Commodity Exchange	2,262,028,523	2,150,006,720	22,022,364	16,723,082	9,749,282	7,939,716
Hong Kong Exchanges and Clearing	497,109	353,979	16,620	8,502	1,424	1,374
India International Exchange	406,914	772,388	NA	NA	205	186
Japan Exchange Group	16,442,189	6,653,187	480,946	253,545	272,321	170,561
Multi Commodity Exchange of India	160,501,954	218,187,811	953,776	1,154,961	298,053	185,115
National Stock Exchange of India	61,381	34,368	769	327	-	43
NZX Limited	257,486	281,800	1,580	1,374	-	42,837
Shanghai Futures Exchange	2,415,365,147	2,102,822,994	33,656,181	22,681,386	8,096,222	6,536,608
Singapore Exchange	23,477,454	20,791,823	NA	NA	1,172,952	930,703
Taiwan Futures Exchange	136,953	260,508	2,658	5,085	891	1,479
Thailand Futures Exchange	11,977,683	10,839,317	NA	NA	32,408	34,475
Zhengzhou Commodity Exchange	2,499,623,293	1,661,264,959	16,935,749	9,202,437	7,293,461	7,682,150
<b>EMEA</b>						
BME Spanish Exchanges	11,353	26,942	5,168	2,777	3,163	3,958
Borsa Istanbul	135,088,965	157,669,915	25,323	40,747	1,059,394	1,843,362
Budapest Stock Exchange	833	-	27	-	479	-
Dubai Gold and Commodities Exchange	119,039	447,624	1,829	6,238	567	4,146
Eurex	33,133	32,170	2,059	1,427	2,746	2,023
Euronext	18,703,350	15,818,263	299,667	211,545	649,908	651,780
ICE Futures Europe	508,001,669	503,927,593	28,570,749	19,576,112	7,947,903	9,391,412
Johannesburg Stock Exchange	3,313,674	3,219,382	69,288	62,095	126,020	125,413
London Metal Exchange	138,151,296	148,815,279	20,061,964	15,018,811	1,701,616	2,043,809
LSE Group London Stock Exchange	-	440	-	16	-	160
Moscow Exchange	712,794,353	849,424,742	516,800	369,809	1,699,894	1,676,170
Nasdaq Nordic and Baltics	536,084	672,056	34,419	24,072	166,109	215,914
SPIMEX	257,018	43,974	634	342	4,074	1,715
<b>Grand Total</b>	<b>9,891,049,952</b>	<b>8,942,248,395</b>	<b>184,008,528</b>	<b>135,085,978</b>	<b>54,892,972</b>	<b>55,762,844</b>

## Other Futures

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>APAC</b>						
Japan Exchange Group	911,039	1,058,859	15,148	17,409	110,655	94,383
Singapore Exchange	42,668	74,067	NA	NA	12,747	15,014
<b>EMEA</b>						
LSE Group London Stock Exchange	-	184,282	-	255	-	102,989
<b>Grand Total</b>	<b>953,707</b>	<b>1,317,208</b>	<b>15,148</b>	<b>17,664</b>	<b>123,402</b>	<b>212,386</b>

## 12.2 Commodity derivatives by type of underlying commodity

### Agriculture

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>Americas</b>						
CME Group	343,242,358	358,321,907	13,928,467	10,652,340	6,905,882	8,199,087
ICE Futures US	82,175,441	90,505,541	2,655,357	1,930,071	3,055,721	3,018,798
Matba Rofex	869,966	1,098,979	12,476	9,137	83,048	72,047
MIAX Exchange Group	3,120,772	NA	NA	NA	NA	NA
<b>APAC</b>						
ASX Australian Securities Exchange	301,747	138,689	1,421	650	34,766	35,611
Dalian Commodity Exchange	1,269,949,044	1,310,384,148	10,347,186	8,149,622	7,153,206	6,192,806
Japan Exchange Group	71,226	18,649	1,057	217	1,945	1,516
Multi Commodity Exchange of India	1,465,222	1,412,628	17,837	12,993	15,471	14,503
National Stock Exchange of India	46,804	13,462	761	196	-	31
NZX Limited	277,820	328,599	1,663	1,470	-	58,287
Singapore Exchange	1,699,562	1,856,270	NA	NA	49,249	51,635
Thailand Futures Exchange	16,002	17,597	NA	NA	145	197
Zhengzhou Commodity Exchange	761,165,307	584,528,822	7,233,716	4,840,224	2,464,645	2,464,083
<b>EMEA</b>						
Borsa Istanbul	1	12	-	0	-	-
Moscow Exchange	3,643	488	5	0	122	27
<b>Grand Total</b>	<b>2,464,404,915</b>	<b>2,348,625,791</b>	<b>34,199,947</b>	<b>25,596,920</b>	<b>19,764,200</b>	<b>20,108,628</b>

## Energy

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>Americas</b>						
Bolsa de Valores de Colombia	72	298	1	2	26	46
CME Group	551,294,357	605,692,346	33,345,992	21,921,083	12,465,964	13,154,703
Matba Rofex	95,838	362,475	61	111	4,833	2,392
<b>APAC</b>						
ASX Australian Securities Exchange	938,413	811,678	56,769	44,891	196,760	180,896
Dalian Commodity Exchange	155,127,619	133,441,723	4,170,458	2,720,242	247,496	426,483
Japan Exchange Group	4,033,667	NA	79,139	NA	97,131	NA
Multi Commodity Exchange of India	76,043,137	96,219,861	433,521	342,052	44,246	11,755
National Stock Exchange of India	-	2,387	-	13	-	-
Singapore Exchange	1,140,419	687,876	NA	NA	72,003	92,754
Taiwan Futures Exchange	24,821	37,449	349	309	68	387
Zhengzhou Commodity Exchange	499,532,108	419,752,826	2,773,473	1,616,913	1,382,713	1,493,168
<b>EMEA</b>						
BME Spanish Exchanges	11,353	29,942	5,168	2,777	3,163	3,958
Borsa Istanbul	50,478	76,624	132	282	808	4,976
Dubai Gold and Commodities Exchange	12,125	42,382	217	426	28	208
LSE Group London Stock Exchange	NA	440	NA	16	NA	160
Moscow Exchange	601,672,263	758,017,451	416,464	298,653	1,369,447	1,937,821
Nasdaq Nordic and Baltics	454,211	568,615	33,641	23,351	137,419	174,161
<b>Grand Total</b>	<b>1,890,430,881</b>	<b>2,015,744,373</b>	<b>41,315,385</b>	<b>26,971,120</b>	<b>16,022,105</b>	<b>17,483,868</b>

## Precious Metals

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>Americas</b>						
CME Group	112,055,043	151,635,123	15,882,069	20,283,611	1,548,837	1,834,228
ICE Futures US	361,533	460,547	60,338	64,461	1,090	1,755
Matba Rofex	40,351	133,180	68	181	956	1,773
<b>APAC</b>						
Hong Kong Exchanges and Clearing	75,382	69,964	4,367	4,210	160	285
Japan Exchange Group	11,592,904	6,060,038	393,083	247,300	164,422	154,779
Multi Commodity Exchange of India	89,106,848	105,495,036	427,992	637,471	253,895	158,389
National Stock Exchange of India	339,878	375,062	2,109	2,600	3,779	2,181
Taiwan Futures Exchange	139,219	265,581	2,607	5,252	992	1,338
Thailand Futures Exchange	11,961,681	10,821,720	NA	NA	32,263	34,272
<b>EMEA</b>						
Borsa Istanbul	135,038,473	157,593,274	25,191	40,465	1,058,586	1,838,386
Dubai Gold and Commodities Exchange	106,674	402,580	1,607	5,791	612	1,190
London Metal Exchange	NA	8,871	NA	1,224	NA	1,071
Moscow Exchange	117,415,966	101,604,623	104,690	75,486	897,517	554,303
<b>Grand Total</b>	<b>478,233,952</b>	<b>534,925,599</b>	<b>16,904,119</b>	<b>21,368,051</b>	<b>3,963,109</b>	<b>4,583,950</b>

## Non-precious metals

	Volume 2021	2020	Notional Value USD 2021	USD 2020	Open interest 2021	2020
<b>Americas</b>						
CME Group	26,051,835	25,333,871	2,702,725	1,735,758	335,111	374,795
<b>APAC</b>						
Dalian Commodity Exchange	192,490,999	296,229,269	2,327,390	3,311,958	1,318,696	791,007
Hong Kong Exchanges and Clearing	421,727	284,015	12,882	6,053	1,264	1,306
Japan Exchange Group	734,251	574,500	7,505	6,027	8,420	14,266
Multi Commodity Exchange of India	10,230,090	17,525,895	217,444	198,180	11,664	8,860
National Stock Exchange of India	44	NA	1	NA	-	NA
Singapore Exchange	24,267,621	22,331,263	NA	NA	1,236,832	1,236,832
Zhengzhou Commodity Exchange	175,719,365	76,619,394	1,199,497	371,357	290,363	251,058
<b>EMEA</b>						
Borsa Istanbul	13	5	0	0	-	-
Dubai Gold and Commodities Exchange	230	2,662	3	21	1	38
London Metal Exchange	144,952,860	154,906,344	21,094,338	15,872,426	3,403,232	2,042,738
Moscow Exchange	6,152	4,671	10	4	79	246
<b>Grand Total</b>	<b>574,875,187</b>	<b>593,811,889</b>	<b>27,561,794</b>	<b>21,501,785</b>	<b>6,605,662</b>	<b>4,721,146</b>

### Index Commodity Derivatives

	Volume		Notional Value		Open interest	
	2021	2020	USD 2021	USD 2020	2021	2020
<b>APAC</b>						
Japan Exchange Group	10,141	NA	162	NA	403	NA
Multi Commodity Exchange of India	1,149,284	363,417	11,624	3,797	2,752	863
<b>EMEA</b>						
Eurex	33,133	32,170	2,059	1,427	2,746	2,023
<b>Grand Total</b>	<b>1,192,558</b>	<b>395,587</b>	<b>13,845</b>	<b>5,225</b>	<b>5,901</b>	<b>2,886</b>

### Other commodity derivatives

	Volume		Notional Value		Open interest	
	2021	2020	USD 2021	USD 2020	2021	2020
<b>APAC</b>						
Dalian Commodity Exchange	746,850,705	467,272,726	5,194,455	2,548,884	2,520,668	1,458,601
Singapore Exchange	66,120	1,097,043	NA	NA	130,082	210,323
Zhengzhou Commodity Exchange	1,063,206,513	620,502,008	5,729,064	2,377,563	3,155,740	4,278,273
<b>EMEA</b>						
Nasdaq Nordic and Baltics	81,873	103,441	778	720	28,690	41,753
<b>Grand Total</b>	<b>1,810,205,211</b>	<b>1,088,975,218</b>	<b>10,924,298</b>	<b>4,927,167</b>	<b>5,835,180</b>	<b>5,988,950</b>