

WFE Research

The WFE's Derivatives Report 2019



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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.

I THE WFE'S DERIVATIVES SURVEY 2019

The World Federation of Exchanges (WFE) conducts an annual survey of the derivatives markets operated by its members, affiliates¹ and other exchanges that voluntarily submit data, with the aim of providing an update about the derivatives market for the past calendar year. This report is based on data collected from the 41 exchanges that responded to this year's survey (the full list can be found in Appendix 2), as well as from data collected from exchanges' websites.

Key findings

In 2019 we saw record high volumes of trading in derivatives. For the first time in the period under review (2010-2019), overall volumes exceeded 32 billion contracts traded. This represents a 9.4% increase in volumes compared with 2018. The overall increase in volumes was driven by the Asia and Pacific (APAC) region (26.4%) and the Americas (1.4%) while Europe, the Middle East and Africa (EMEA) registered a decrease of 4.9%.

Both options and futures volumes increased. During 2019, the total volume of options increased by 12% to 14.76 billion, while that of futures by 7.4% to 18.1 billion.

Per asset class, however, performance was mixed:

- **Equity derivatives volumes saw an increase of 17.2%** and were just under 16 billion contracts, the highest volume in the 10 year period under review. Single stock options volumes were the only equity derivatives decreasing year-on-year by 3.4%, while single stock futures were up 16.1%, stock index options 41.5% and stock index futures 13.2%.
- **Commodity derivatives saw an increase of 15.3%.** While options volumes were down 8.1%, futures were up 16.5%. The commodity trading volume was 6.83 billion contracts in 2019 compared with 5.92 billion in 2018 due to the APAC region, where a major share of global commodity derivatives trading takes place (62%). Energy and agriculture accounted for the bulk (45.4% and 30.2% respectively) of global commodity derivatives trading. While we noticed a year-on-year increase in the volumes of energy and other commodities (by 25.4% and 54.5% respectively), agriculture, precious metals, non-precious metals and index commodity derivatives volumes fell by 20.9%, 11.5%, 76.2% and 96.8% respectively.
- **Interest rate derivatives were down 1.3%**, mainly because of a decline in short-term interest rate (STIR) options and STIR futures of 6.5% and 2.2% respectively, which account for 11.3% and 38% of the interest rate derivatives volumes traded. There was a very modest rise in long-term interest rates (LTIR) futures volumes (0.3%) and while LTIR options increased (2.6%), this did not compensate for the loss. LTIR options account for 7.5% of the interest rate derivatives traded in 2019, while LTIR futures were the most traded interest rate derivative, at 43.3%.
- **Currency derivatives experienced a minor 0.1% decline.** Volumes peaked in 2018 at 3.673 billion contracts while 2019 saw 3.670 billion contracts traded. While futures experienced a 7.2% drop in volumes, options were up 15.4% due to the APAC region, where a major share (63.2%) of the global currency derivatives trading takes place.

¹ Many newer, smaller regulated exchanges choose to become WFE Affiliates. The WFE Office requires that the regulatory authority of the applicant is already a member of IOSCO. However, Affiliate status does not imply fulfilment of WFE membership criteria and, unlike membership, is not subject to peer review or vote by the General Assembly.

- **Exchange-traded fund (ETF) derivatives fell by 8.8%**, essentially due to the decline in ETF options (8.8%). The Americas is by far the region where most ETF derivatives trading takes place, with a share of 99.7% of the global ETF derivatives volume.

2 METHODOLOGY

This report focuses on derivatives trading activity in 2019, and covers responses from 41 exchanges/exchange groups (some of which represent more than one trading venue). 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 16 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

Long-term vs year-on-year comparisons: To analyse long term trends we also include 10-year comparisons. However, because the set of exchanges submitting each year may slightly change, there may be minor differences with the 2019-2018 year-on-year comparisons.

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 (US\$). 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 are 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.

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 mean and median number of product lines offered by responding exchanges are both five. As Figure 1 shows, stock index futures and options are the derivatives offered by the largest number of trading venues.

When looking at the number of products offered by exchange (Figure 2), Johannesburg Stock Exchange and Eurex have the largest number of product lines, at 15, and there are three exchanges with only one product line.

Please note that the data reflects the acquisition in 2019 of Oslo Børs by Euronext and of BATS Global Markets by Cboe Global Markets. Cboe Global Markets also includes Cboe Futures Exchange.

Figure 1: Number of trading venues by product line in 2019

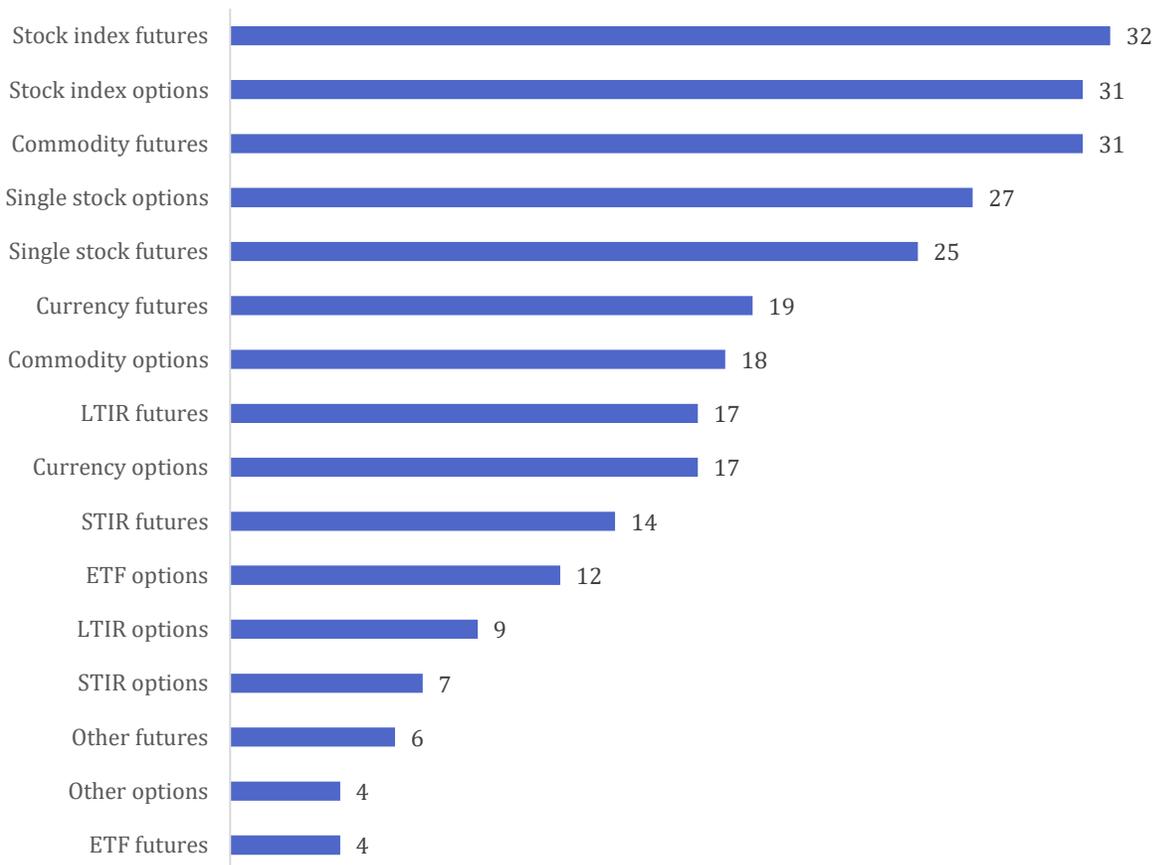
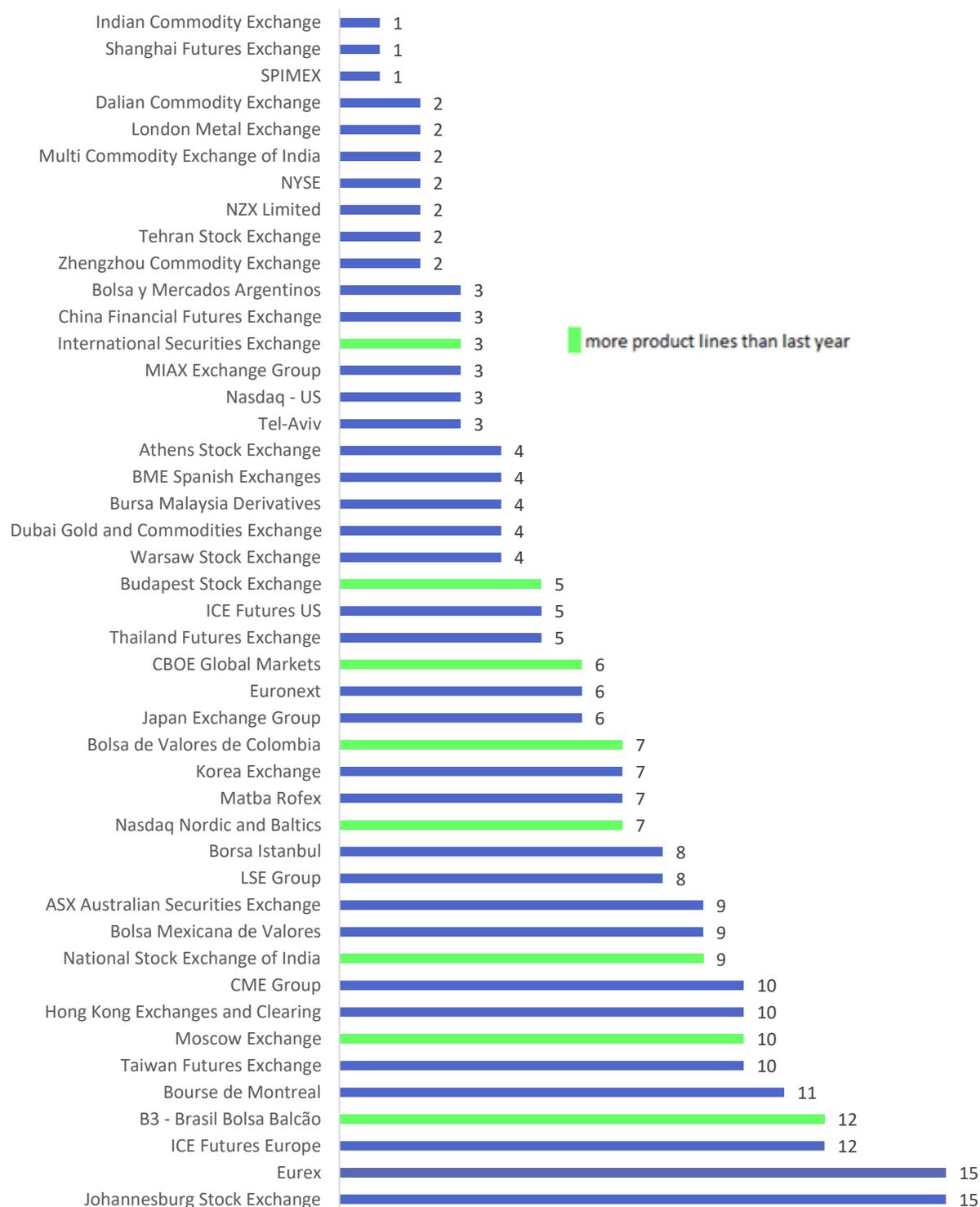


Figure 2: Number of product lines per exchange in 2019



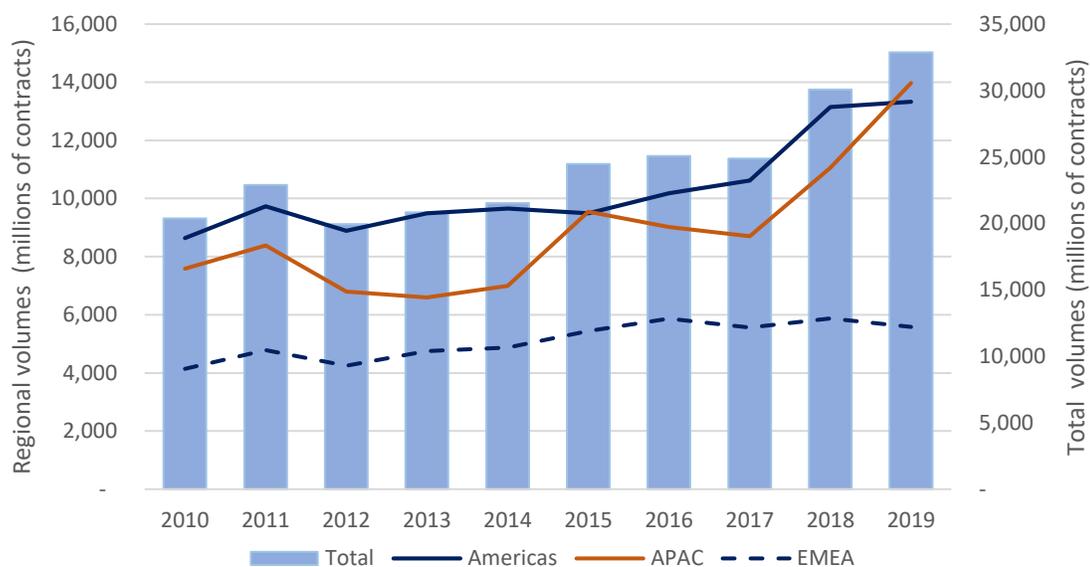
4 MARKET OVERVIEW

4.1 Trading activity: regional trends

Amongst the respondent universe of 41 exchanges, there was a 9.4% increase in the volumes traded compared with 2018, and a record number of 32.89 billion derivatives contracts traded in a year (14.76 billion options and 18.13 billion futures). This represents an increase of 61.5% over the last 10 years, with an average annualised growth rate of 7.6%.

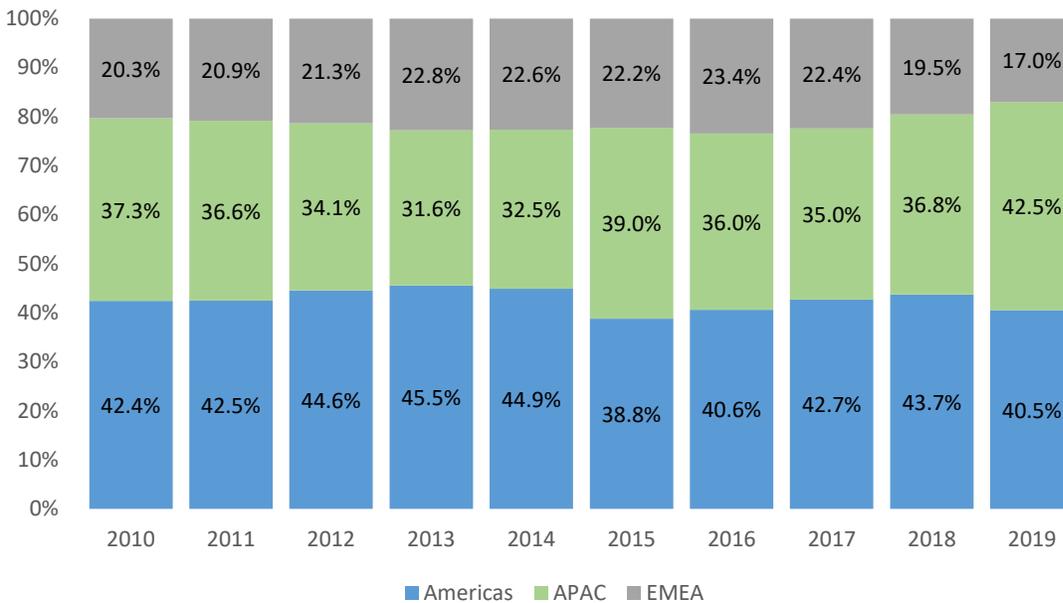
When comparing regions, volumes in EMEA were down 4.9%, while APAC experienced a sizable increase of 26.4% due to stock index options, commodity futures and currency options. The volumes in the Americas registered a modest increase of 1.4%. In APAC, an exceptional growth in volumes was experienced by the National Stock Exchange of India (57%), the Dalian Commodity Exchange (39.9%) and the Zhengzhou Commodity Exchange (33.6%).

Figure 3: Volumes of exchange-traded derivatives contracts



- Volumes traded in the Americas region account for 40.5% of global volumes traded. The increase was driven by a rise in equity, interest rates and currency derivatives by 9.3%, 3.6% and 15.5% respectively, while ETF, commodity and other derivatives registered decreases of 8.9%, 16.3% and 12.1% respectively.
- Volumes in the Asia-Pacific region account for 42.5% of the total number of contracts traded, an increase caused by an uptick in volumes traded across all product types: equity (37.6%), ETF (21.4%), interest rate (2.6%), currency (7.2%) and commodity derivatives (32.7%).
- Volumes in the EMEA region (which accounted for the remaining 17% of total volumes) were down 4.9% due to a fall in ETF (80%), interest rate (13.9%), currency (22.8%) and other derivatives (60.8%), while the region registered increases in volumes across equity (41.9%) and commodity derivatives (16.3%).
- Options and futures, which account for 44.9% and 55.1% of global derivatives volumes, saw increases of 12% and 7.4% respectively over 2018.

Figure 4: Share of total volumes: breakdown by region



4.2 Trading activity by asset class

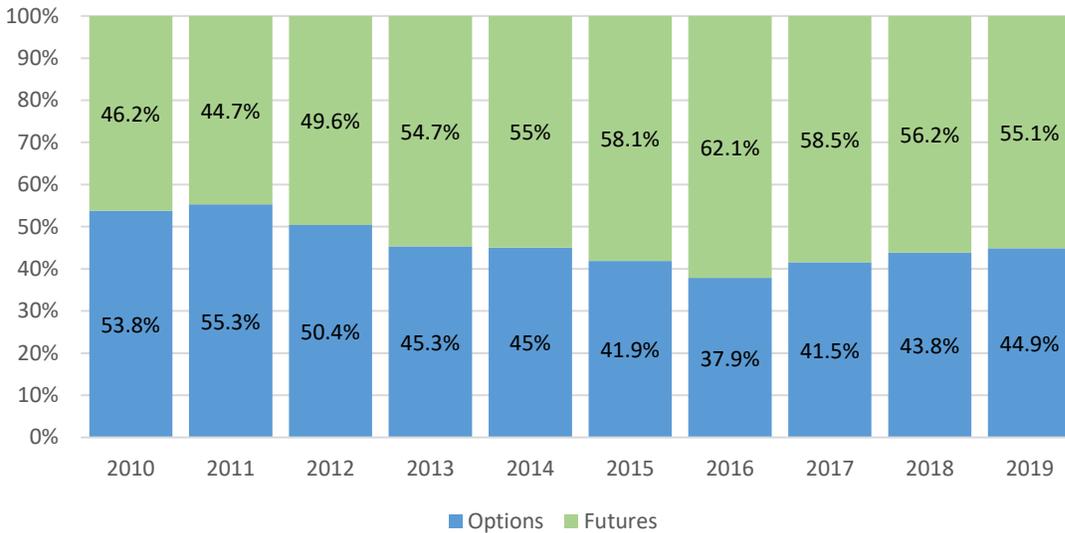
Equity derivatives: Equity derivatives volumes were up 18.4% compared with 2018 thanks to increases in volumes across single stock futures, stock index options and stock index futures and across the Americas and APAC regions. They accounted for 48.5% of overall derivatives contracts traded in 2019. In the 10-year period under review, 2019 saw the highest number of equity derivatives contracts traded in a year (16.1 billion).

ETF derivatives: In 2019, 1.7 billion ETF derivatives contracts were traded. Volumes were down 8.8% year-on-year due to a 8.9% decrease in the Americas region, where 99.7% of the trading takes place.

Interest rate derivatives: Interest rate derivatives volumes were down 1.3% in 2019, amounting to 4.52 billion. The fall was driven by decreasing volumes across STIR options (6.5%) and STIR futures (1.9%), while LTIR options registered a modest increase of 2.6% and LTIR futures 0.04%. The Americas region, where a bulk of the volumes are traded (70.8%), saw volumes increase by 3.6%. APAC also registered an increase of 2.6% (its share of the global interest rate derivatives being 5.1%), while EMEA which accounts for 24.1% share) saw a sharp fall of 13.9%.

Currency derivatives: Currency derivatives volumes were up 1.8% compared with 2018. Volumes of currency derivatives exceeded 3.7 billion contracts traded in 2019. In the Americas and Asia-Pacific regions where 19.5% and respectively 63.2% of contracts were traded, volumes were up 15.5% and 7.2% respectively. Only in the EMEA region were volumes down (22.8%) on 2018. EMEA accounts for a 17.2% share of the currency derivatives volumes traded.

Figure 5: Share of total volumes: options vs futures



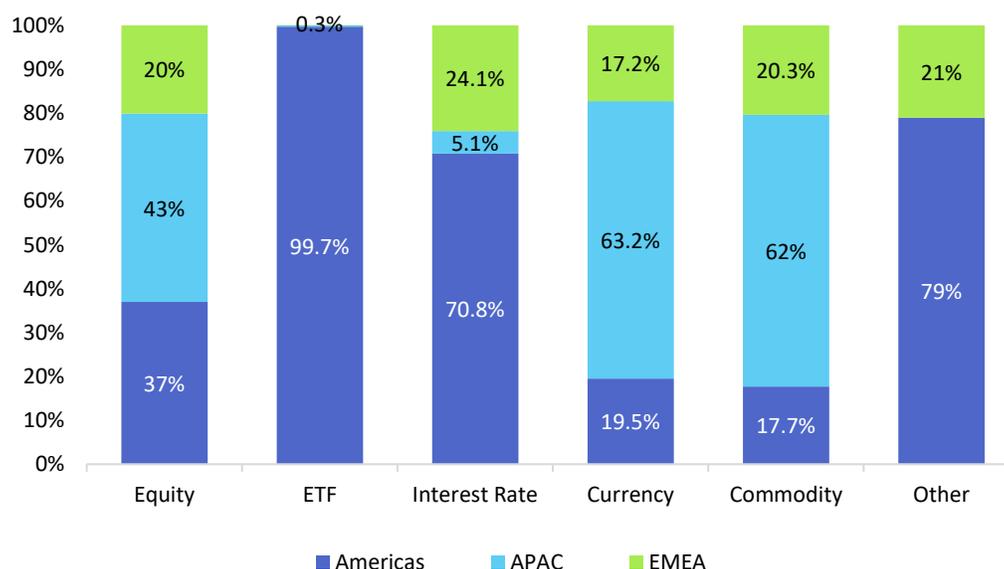
Commodity derivatives: Commodity derivative traded volumes in 2019 increased by 17.2%, reaching a total of 6.9 billion contracts. Commodity futures remained the most actively traded derivatives product, accounting for 20% of overall derivatives volumes. A 16.3% decrease in number of commodity derivatives contracts traded in the Americas region (which accounts for a 17.7% share of volumes) was offset by the 32.7% increase in Asia-Pacific region, where the major share (62%) of global volumes are traded and in EMEA where the volumes were up by 16.3%. EMEA accounts for 20.3% of the traded volume.

Other derivatives: The “other” derivatives category comprises a wide range of products, including index volatility options and futures, real estate investment trust (REIT) derivatives, dividend index derivatives, contracts for difference (CFDs), and inflation indexed futures and options. Traded volumes of other options and futures were down 35.8% compared with 2018 due to both Other options and other futures volumes falling by 23.6% and 47.4% respectively. The largest share of “other” options is traded in the Americas (79%), while EMEA accounts for the rest of 21%.

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

	2018	2019	% change	% within asset class	% of total
Single stock options	4,452	4,285	-3.7%	26.5%	12.9%
Single stock futures	1,455	1,690	16.2%	10.5%	5.1%
Stock index options	4,355	6,174	41.8%	38.2%	18.5%
Stock index futures	3,379	4,008	18.6%	24.8%	12.0%
Total Equity	13,641	16,157	18.4%		48.5%
ETF options	1,889	1,723	-8.8%	99.9%	5.2%
ETF futures	2.1	1.2	-41.6%	0.1%	0.0%
Total ETF	1,891	1,724	-8.8%		5.2%
Currency options	1,155	1,333	15.4%	35.7%	4.0%
Currency futures	2,518	2,406	-4.5%	64.3%	7.2%
Total Currency	3,673	3,739	1.8%		11.2%
Commodity options	280	263	-6.3%	3.8%	0.8%
Commodity futures	5,640	6,675	18.4%	96.2%	20.0%
Total Commodity	5,921	6,938	17.2%		20.8%
STIR options	545	509	-6.5%	11.3%	1.5%
STIR futures	1,754	1,721	-1.9%	38.1%	5.2%
LTIR options	330	339	2.6%	7.5%	1.0%
LTIR futures	1,950	1,951	0.04%	43.2%	5.9%
Total Interest Rates	4,579	4,520	-1.3%		13.6%
Other options	182	139	-23.6%	58.0%	0.4%
Other futures	192	101	-47.4%	42.0%	0.3%
Total 'other'	374	240	-35.8%		0.7%
Total	30,078	33,318	10.8%		

Figure 6: Share of total volumes in 2019, by region and asset class



Over the last 10 years, global derivatives trading has seen a positive trend. Volumes of contracts traded increased by 61.5%, reaching 32.89 billion in 2019 as opposed to 20.37 billion in 2010. The positive trend is largely driven by an increase in equity derivatives trading in the last three years, which increased from 10.2 billion contracts traded in 2017 to 15.98 billion in 2019. Both commodity and currency derivatives

are also characterised by a long-term positive trend, with commodity derivatives rising from 2.7 billion contracts traded in 2010 to 6.82 billion at the end of 2019, and currency derivatives rose from 1.34 billion contracts traded in 2010 to 3.67 billion at the end of 2019.

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

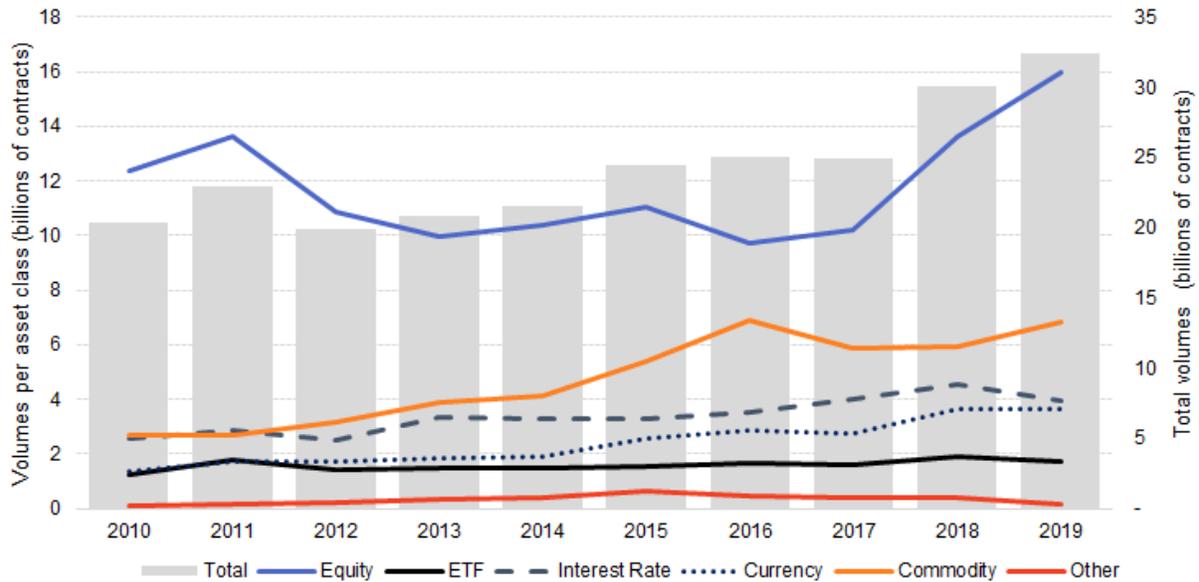
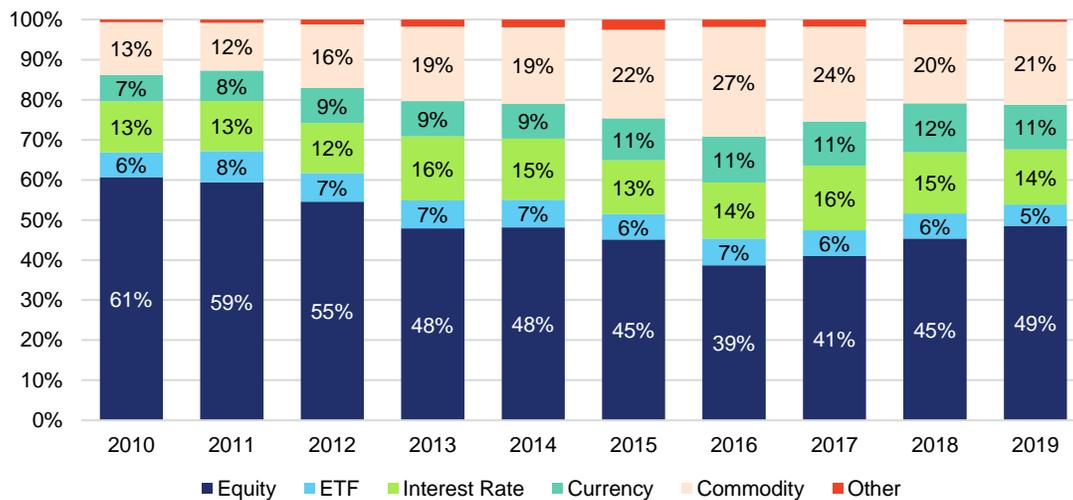


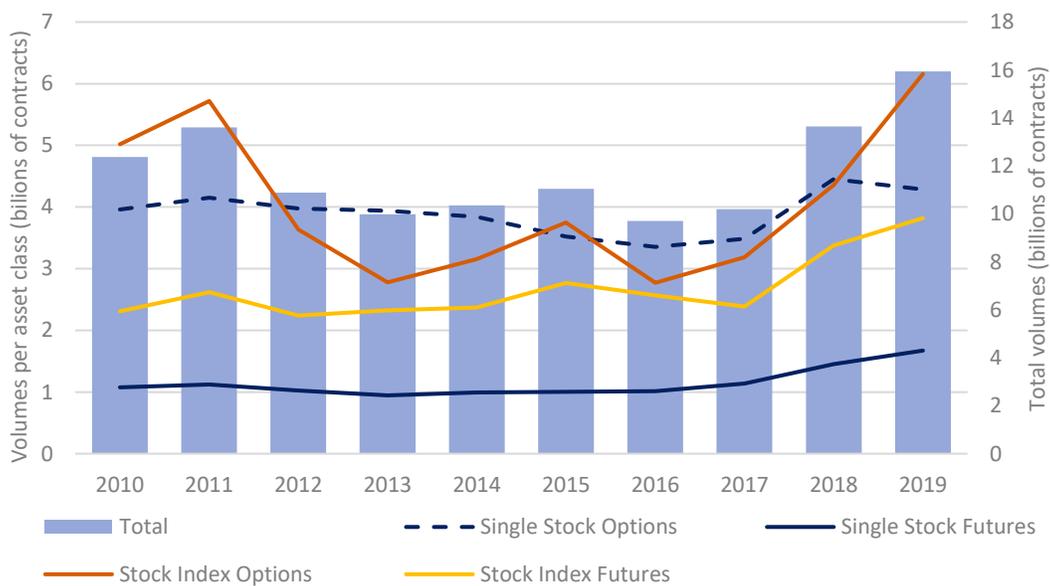
Figure 8: Product composition over time by share of total volume



5 EQUITY DERIVATIVES

- Overall, equity derivative volumes increased by 18.4% in 2019, driven by rises across single stock futures (16.2%), stock index options (41.8%) and stock index futures (18.6%), while single stock options decreased by 3.7%.
- Volumes increased by 9.3% in the Americas and by 37.6% in the Asia-Pacific region, while the EMEA region fell by 2% compared with 2018. Volume traded consists of 39.4% in the Americas, 45.8% in Asia-Pacific and 14.8% in EMEA.
- In 2019, equity derivative volumes exceeded 16.1 billion contracts, the highest level in the period under review.

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

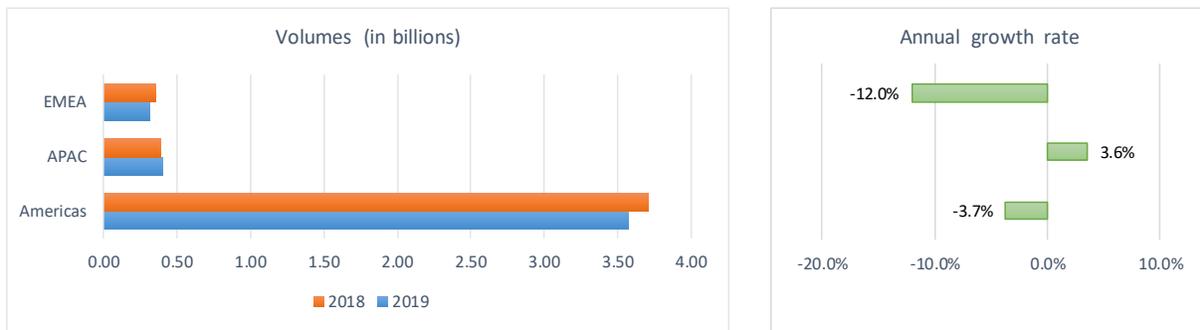


5.1 Single stock options

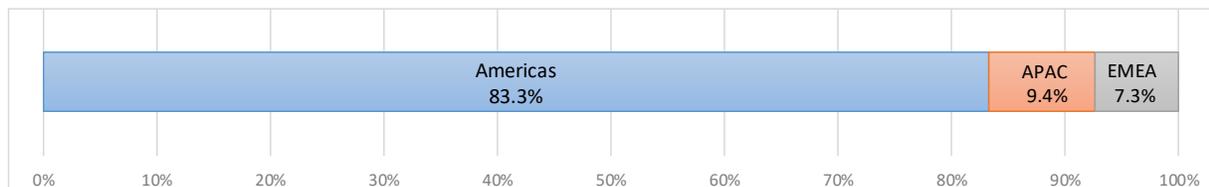
- Volumes of single stock options registered a 3.7% decrease in 2019, falling to 4.3 billion.
- Americas and EMEA experienced a drop in volumes of 3.7% and 12%, while APAC registered an increase of 3.6%. It's worth noting that the bulk of single stock options are traded in the Americas (83.3%), APAC accounts for 9.4% and EMEA for 7.3%.
- Three exchanges from the Americas region—B3 Brasil Bolsa Balcao, Cboe Global Markets and Nasdaq-US—accounted for over half of global volumes.

Figure 10: Single stock options

A. Volumes and yearly change



B. Share volume by region



C. Share of volume by exchange

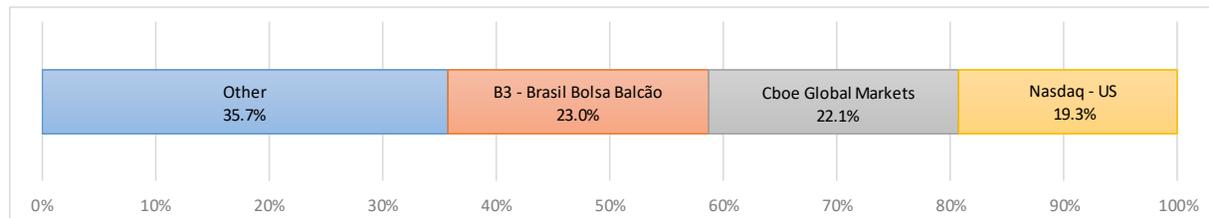


Table 2: Top 10 exchanges by number of single stock options contracts traded in 2019

	Volume		Notional Value		Open interest	
	2019	YoY change	2019	YoY change	2019	YoY change
B3 - Brasil Bolsa Balcão	983,518,149	-18%	859,817	44%	27,733,479	108%
Cboe Global Markets*	945,546,703	103%	0	-100%	182,274,299	2%
Nasdaq – US*	826,435,818	18%	0	NA	0	NA
NYSE*	365,939,402	-18%	108,202	-26%	0	NA
MIAX Exchange Group*	260,266,648	112%	3,676,239	NA	0	NA
National Stock Exchange of India	201,931,170	19%	1,442,007	-17%	330,203	17%
Eurex	185,670,864	-2%	891,612	0%	50,925,143	8%
International Securities Exchange*	129,615,098	-60%	0	NA	0	NA
Hong Kong Exchanges and Clearing	106,417,826	-15%	358,513	-16%	6,624,472	-7%
ASX Australian Securities Exchange	67,999,671	-6%	135,318	-4%	6,299,500	3%
Others	212,139,433	-5%	694,380	-4%	25,330,155	-8%
Total	4,285,480,782	6.1%	8,166,089	-27%	299,517,251	7%

*Cboe Global Markets, Nasdaq-US and International Securities Exchange did not provide notional value.

**Nasdaq-US, NYSE, MIAX Exchange Group and International Securities Exchange didn't provide open interest.

Table 3: Top 10 single stock options contracts traded in 2019

Contract Name	Size (lot)	Exchange	Volume 2019	Notional Value 2019	Open interest 2019
PETROBRAS	100 shares	B3 - Brasil Bolsa Balcão	623,040,175	1,755,095	4,076
VALE	100 shares	B3 - Brasil Bolsa Balcão	156,537,838	785,843	194
AAPL	100 shares	Nasdaq – US*	50,091,664	0	0
Apple Inc. (AAPL)	100 shares	Cboe Global Markets	47,437,222	986,294	3,890,867
ITAUUNIBANCO	100 shares	B3 - Brasil Bolsa Balcão	29,348,576	105,741	10,646
AMD	100 shares	Nasdaq – US*	28,199,738	0	0
Advanced Micro Devices (AMD)	100 shares	Cboe Global Markets	27,098,292	80,963	2,565,870
BAC	100 shares	Nasdaq – US*	25,417,274	0	0
TSLA	100 shares	Nasdaq – US*	24,500,094	0	0
Tesla, Inc. (TSLA)	100 shares	Cboe Global Markets	23,857,918	651,210	2,000,826

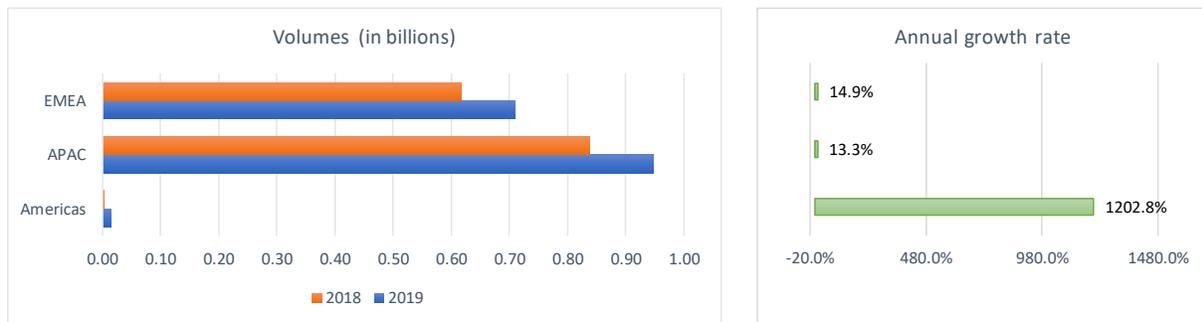
*Nasdaq-US did not provide notional value or open interest

5.2 Single stock futures

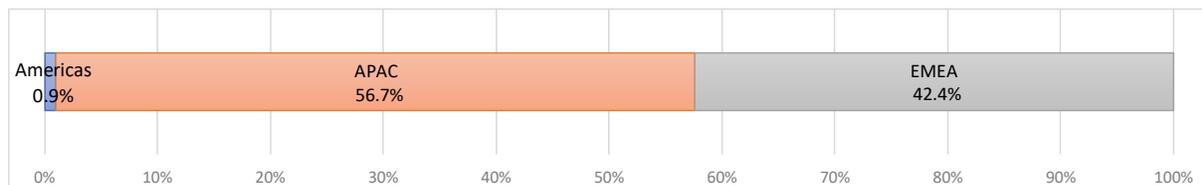
- Single stock futures volumes were up 16.2% in 2019, with 1.7 billion contracts traded.
- They remained the least actively traded equity derivatives product type accounting for 10.5% of equity derivatives volumes.
- The Asia-Pacific and EMEA regions, which together accounted for most of the global volume (56.2% and 42.9% respectively), saw volumes increase by 13.3% and 17.5% respectively. In the Americas region the increase is mostly due to B3 – Brasil Bolsa Balsao, which introduced this product line in 2019.
- Three exchanges, Korea Exchange, the National Stock Exchange of India and Eurex Exchange, continue to account for the majority (66%) of total volumes traded.

Figure 11: Single stock futures

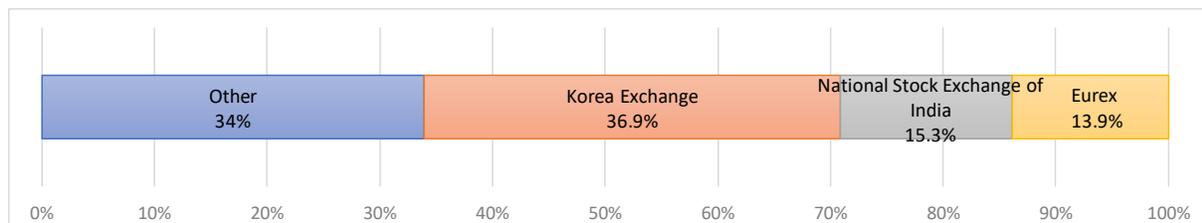
A. Volumes and yearly change



B. Share of volume by region



C. Share of volume by exchange



Note: Percentages shown may not always add up to 100% due to rounding.

Table 4: Top 10 exchanges by number of single stock futures contracts traded in 2019

	Volume		Notional Value		Open interest	
	2019	YoY change	2019	YoY change	2019	YoY change
Korea Exchange	616,946,569	23%	296,031	-12%	5,165,115	68%
National Stock Exchange of India	255,120,205	1%	2,055,257	-15%	1,846,372	5%
Eurex	232,226,570	32%	746,928	20%	8,469,519	42%
Moscow Exchange	205,898,967	-13%	70,154	10%	1,586,442	7%
Borsa Istanbul	196,631,519	260%	28,271	196%	2,830,090	281%
Thailand Futures Exchange	52,098,173	-6%	0	NA	2,917,490	37%
ICE Futures Europe	39,181,471	-62%	3,134,410	-12%	189,567	-35%
Taiwan Futures Exchange	19,788,425	-13%	173,221	0%	163,555	42%
B3 - Brasil Bolsa Balcão	11,077,800	NA	95	NA	2,187,900	NA
Athens Stock Exchange	9,656,078	-27%	2,281	23%	340,861	41%
Others	33,680,578	24%	86,831	69%	3,572,379	20%
Total	1,672,306,355	15.9%	6,593,480	-9%	29,269,290	56%

*Thailand Futures Exchange did not provide notional value

Table 5: Top 10 single stock futures contracts traded in 2019

Contract Name	Size (lot)	Exchange	Volume 2019	Notional Value 2019	Open interest 2019
DRV Futures SamsungElec	NA	Korea Exchange*	198,116,237	91,472,231	2,129,100
Futures on Sberbank ordinary shares	100 shares	Moscow Exchange	112,888,044	2,531,277	465,294
DRV futures SK hynix	10 shares	Korea Exchange	60,114,057	45,234,569	293,505
Futures on Gazprom ordinary shares	100 shares	Moscow Exchange	49,352,023	1,084,616	415,530
SSF, UK SSF, Dividend adjusted Futures	NA	ICE Futures Europe*	39,181,471	2,795,894	189,567
Futures on Banco Santander S.A.	100 shares	Eurex	38,494,886	15,763	12,502
THYAO	100 shares	Borsa Istanbul	38,073,971	49,765	164,358
GARAN	100 shares	Borsa Istanbul	32,094,606	29,728	194,513
Futures on VTB BANK ordinary shares	100,000 shares	Moscow Exchange	19,807,714	80,978	226,690
DRV Futures SamsungHvylnd	NA	Korea Exchange*	19,680,428	1,597,028	31,865

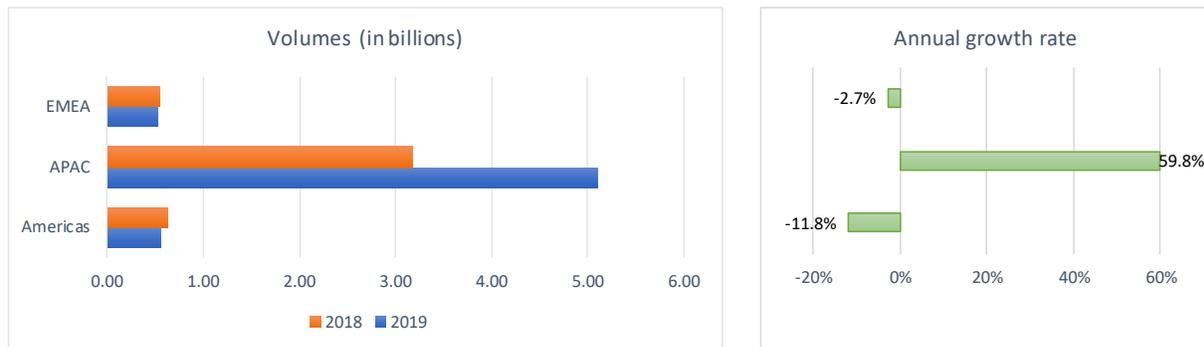
*Korea Exchange and ICE Futures Europe did not provide contract size.

5.3 Stock index options

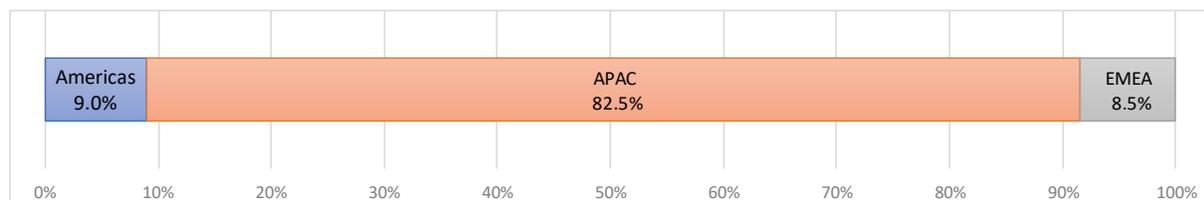
- Stock index options volumes were up 41.8% compared with 2018, reaching 6.17 billion contracts traded and surpassing the 6 billion mark for the first time in the last decade.
- Stock index options were the most actively traded equity derivatives product type in 2019 with a 38.2% share of equity derivatives volumes and an 18.5% volume share of all product lines.
- Volumes were down by 11.8% in the Americas region and by 2.7% in EMEA, while in the Asia-Pacific region they were up 59.8% due to the exceptional performance of the National Stock Exchange of India. The Asia-Pacific region remained the key driver of the overall trend, accounting for 82.5% of global volumes.
- The market for this product was highly concentrated at a global and regional level. Three exchanges accounted for 86% of the total volume traded. In the Asia-Pacific region, the National Stock Exchange of India and the Korea Exchange together accounted for 79% of the regional volume. Eurex accounted for 7%.
- National Stock Exchange of India's Bank Nifty Index options and Korea Exchange's DRV KOSPI 200 options were among the most actively traded contracts in 2019.

Figure 12: Stock index options

A. Volumes and yearly change



B. Share of volume by region



C. Share of volume by exchange

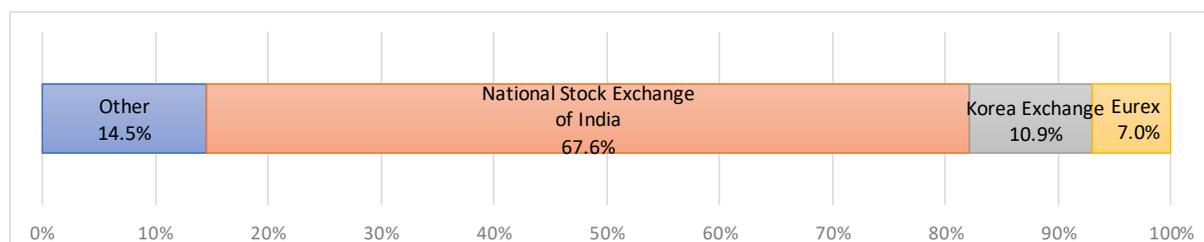


Table 6: Top 10 exchanges by number of stock index options contracts traded in 2019

	Volume		Notional Value		Open interest	
	2019	YoY change	2019	YoY change	2019	YoY change
National Stock Exchange of India	4,165,447,121	88%	33,477,121	22%	1,936,926	-3%
Korea Exchange	668,775,772	-1%	38,914,957	-12%	2,726,479	-7%
Eurex	431,575,858	3%	15,965,111	-2%	43,598,835	5%
Cboe Global Markets	347,834,727	-11%	95,120,000	-9%	18,308,070	11%
Taiwan Futures Exchange	170,194,590	-13%	3,066,370	-9%	605,441	6%
CME Group	162,279,982	-22%	28,353,445	-19%	3,468,387	-11%
B3 - Brasil Bolsa Balcão	41,785,034	69%	445,361	-12%	533,799	27%
Hong Kong Exchanges and Clearing	38,297,384	-4%	3,867,243	-8%	2,334,663	-11%
Japan Exchange Group	30,699,470	-15%	0	NA	1,646,864	-17%
Tel-Aviv Stock Exchange	23,749,755	-28%	1,092,303	-20%	170,329	-15%
Others	77,738,148	-21%	1,850,663	-13%	4,341,023	-16%
Total	6,158,377,841	42.0%	222,152,574	-7%	79,670,816	2%

*Japan Exchange Group did not provide notional value

Table 7: Top 10 stock index options contracts traded in 2019

Contract Name	Size (lot)	Exchange	Volume 2019	Notional Value 2019	Open interest 2019
BANKNIFTY	40 units**	National Stock Exchange of India	2,994,080,115	1,764,227,360	14,086,380
NIFTY	75 points**	National Stock Exchange of India	1,161,043,042	1,000,919,073	92,445,475
DRV Option KOSPI 200	Price x 250,000 Korean Republic won	Korea Exchange	637,637,015	126,712,995	2,336,109
S&P 500 Index (SPX)	100 shares of the underlying index	Cboe Global Markets	318,943,920	92,919,780	15,862,046
Option on EURO STOXX 50	€ 10 multiplied by the value of the index	Eurex	270,456,835	8,787,509	31,008,749
TAIEX options	Index Point x NTD 50	Taiwan Futures Exchange (TAIFEX)	170,012,273	91,654,761	602,424
E-MINI S&P500	One E-mini S&P 500 futures contract	CME Group	150,994,644	21,959,542	3,193,167
Cboe S&P 500 Volatility Index (VIX)	US\$ 100 multiplied by the value of the index	Cboe Global Markets	126,627,356	194,852	4,894,892
Option on EURO STOXX BANKS	€ 50 multiplied by the value of the index	Eurex	58,147,059	272,655	7,579,669
Daily Future. on KOSPI 200 option*	1 share	Eurex	35,236,582	1,850,474	-

* Please note that this is 100% reflecting the original KOSPI 200 Option traded at the Korean Exchange. Eurex treats this as an option, but technically it is set up as a future with positions being marked to market every day. Further information can be found [here](#).

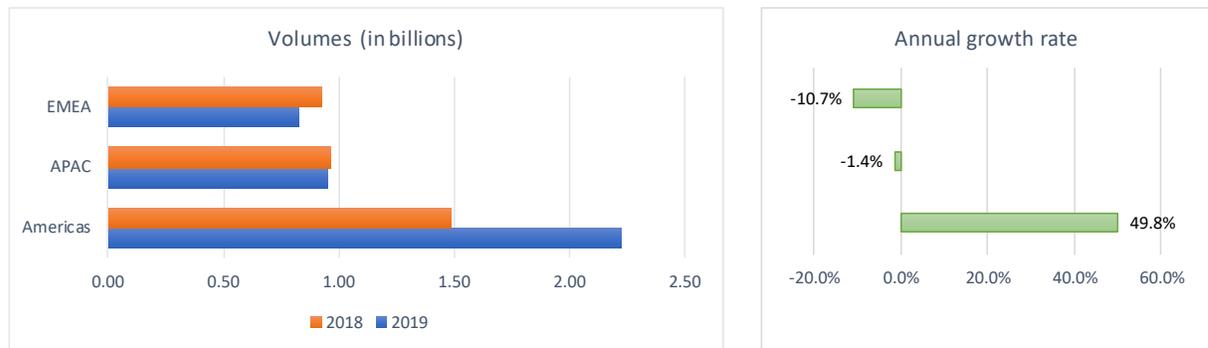
** Most recent information (2018). Note that contract size is periodically revised based on SEBI guidelines, as reported by NSE India.

5.4 Stock index futures

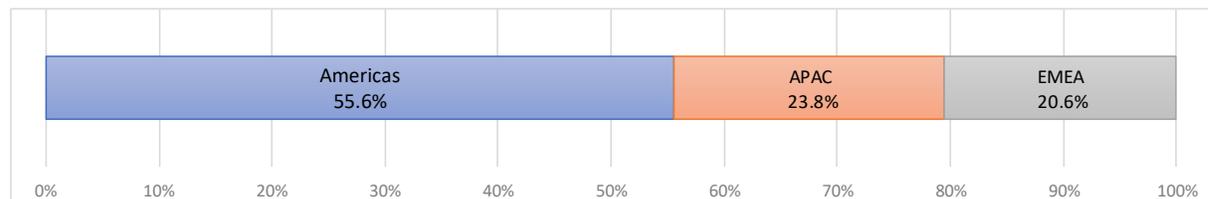
- Stock index futures volumes were up 18.6% on 2018 with volumes of 4 billion.
- They are the fourth most actively traded derivatives product type and the third equity derivative, accounting for 12% of overall derivatives volumes and 24.8% equity derivatives volumes.
- Volumes were down in Asia-Pacific by 1.4% and in EMEA by 10.7%, while the Americas witnessed a significant increase of 49.8% due to B3 – Brasil Bolsa Balcao and CME Group.
- The top three exchanges (in terms of volumes traded) – two from the Americas region and one from the EMEA region - accounted for 70% of total volumes traded.

Figure 13: Stock index futures

A. Volumes and yearly change



B. Share of volume by region



C. Share of volume by exchange

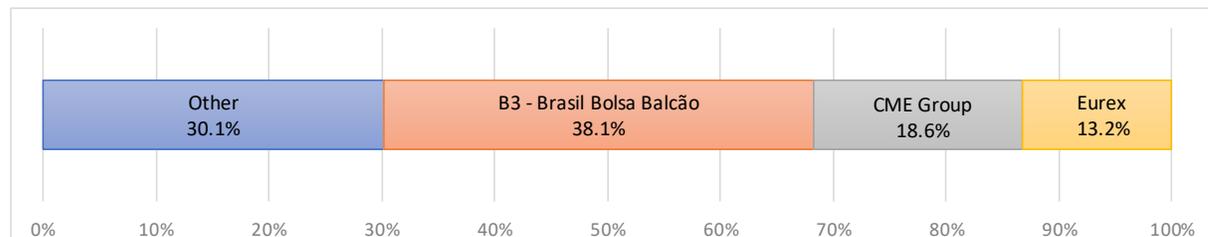


Table 8: Top 10 exchanges by number of stock index futures contracts traded in 2019

	Volume		Notional Value		Open interest	
	2019	YoY change	2019	YoY change	2019	YoY change
B3 - Brasil Bolsa Balcão	1,454,364,476	98%	7,958,289	117%	925,126	63%
CME Group	709,464,213	2%	88,643,988	-4%	4,312,102	3%
Eurex	504,431,237	2%	24,894,993	-2%	10,228,038	8%
Japan Exchange Group	299,896,154	-12%	13,238,290	-12%	1,716,495	-31%
Hong Kong Exchanges and Clearing	112,193,367	-11%	12,319,179	-14%	604,384	-15%
Moscow Exchange	102,759,520	-26%	266,472	-3%	490,498	103%
Korea Exchange	97,821,400	-1%	4,062,632	-14%	789,831	26%
National Stock Exchange of India	83,490,232	21%	842,530	1%	244,548	-38%
Taiwan Futures Exchange	68,026,954	-22%	3,096,680	-22%	148,862	-3%
Borsa Istanbul	62,350,402	12%	131,664	-1%	472,425	15%
Others	324,061,329	-9%	14,039,533	-16%	5,511,981	2%
Total	3,818,859,284	19.4%	169,494,250	-4%	25,444,290	3%

Table 9: Top 10 stock index futures contracts traded in 2019

Contract Name	Size (lot)	Exchange	Volume 2019	Notional Value 2019	Open interest 2019
E-MINI S&P500	US\$ 50 x S&P 500 Index	CME Group	395,146,908	57,389,046	2,722,234
FUT ON EURO STOXX 50	€10 multiplied by the value of the index	Eurex	292,360,338	9,992,267	3,392,722
Nikkei 225 mini	100 yen	Japan Exchange Group	237,577,721	511,297,116	561,087
E-MINI NASDAQ 100	US\$ 20 x Nasdaq-100 index	CME Group	115,080,512	17,468,580	216,734
FTSE China A50 Index futures	US\$ 1 x SGX FTSE China A50 Index Futures Price	Singapore Exchange*	97,770,859	-	731,133
RTS Index futures	1 point	Moscow Exchange	87,274,125	14,682,621	426,890
FUT ON EURO STOXX BANKS	€ 50 multiplied by the value of the index	Eurex	81,319,688	367,812	2,180,307
BIST30	(BIST 30 Index/1,000) x 100 Turkish Lira	Borsa Istanbul	62,314,385	782,773	472,010
DRV futures KOSPI 200	KOSPI 200 Index x 500,000 Korean Republic won	Korea Exchange	57,026,024	3,917,903,320	379,197
Hang Seng Index futures	HK\$ 50 per index point	Hong Kong Exchanges and Clearing	51,317,694	72,331,648	121,237

*Singapore Exchange did not provide notional value

6 ETF DERIVATIVES

- ETF derivatives volumes were down 8.8% on 2018 to 1.7 billion. This was a reversal of the increase observed in 2018 when volumes traded were up on 2017.
- ETF options continued to account for most (99.9%) of the ETF derivatives trading with 1.7 billion contracts traded in 2019, while ETF futures recorded 1.2 million contracts traded in 2019.
- ETF derivatives are primarily traded in the Americas region, which houses the nine largest exchanges by volumes traded, Nasdaq US, Cboe Global Markets and NYSE accounting for 82% of the global ETF derivatives trading. As we can see in Figure 14, compared with ETF option volumes, ETF futures volumes are negligible.

Figure 14: Number of ETF derivatives contracts

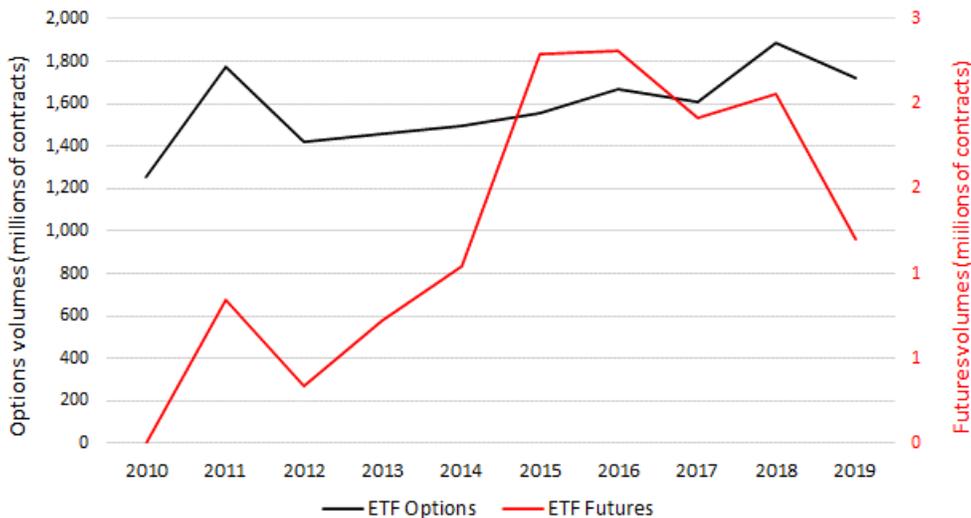


Figure 15: ETF Derivatives – share of total volumes by exchanges

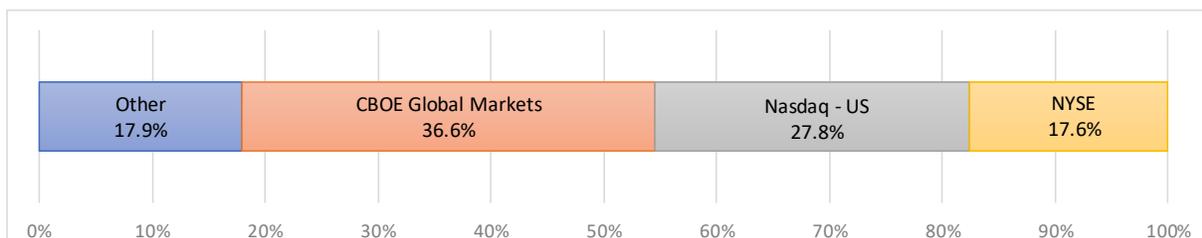


Table 10: Top 10 exchanges by number of ETF options and futures contracts traded in 2019*

	Volume		Notional Value		Open interest	
	2019	YoY change	2019	YoY change	2019	YoY change
Cboe Global Markets	631,360,737	55%	0	NA	86,829,976	-7%
Nasdaq - US	479,746,704	3%	0	NA	0	NA
NYSE	303,948,415	-16%	48,745	-27%	0	NA
MIAX Exchange Group	179,347,794	129%	3,662,577	NA	0	NA
International Securities Exchange	80,321,461	-72%	0	NA	0	NA
B3 - Brasil Bolsa Balcão	36,989,550	108%	9,125,392	133%	186,372	63%
Bourse de Montreal	7,999,339	-45%	15,124	42%	971,614	-2%
Hong Kong Exchanges and Clearing	2,418,526	51%	24,120	54%	78,357	-24%
Taiwan Futures Exchange	1,220,701	-27%	14,997	-19%	13,093	-34%
Japan Exchange Group	842,360	165%	0	NA	13,405	408%
Others	103,921	-75%	11	-80%	0	-100%
Total	1,724,299,508	5.5%	12,890,966	14%	88,092,817	-7%

*Japan Exchange Group, Nasdaq-US, Cboe Global Markets, and International Securities Exchange did not provide notional value. Nasdaq-US, NYSE, MIAX Exchange Group and International Securities Exchange did not provide open interest

7 INTEREST RATE DERIVATIVES

- Interest rate derivatives volumes declined by 1.3% in 2019 compared with the previous year, falling to 4.52 billion contracts.
- Volumes were down across STIR options and futures by 6.5% and 1.9% respectively, while LTIR options and futures registered an increase of 2.6% and 0.04% respectively.
- In the Americas region, where the bulk of the volumes are traded (70.8%), volumes increased by 3.6%. APAC saw the same trend, but registered a more modest increase of 2.6%, while the EMEA region decreased sharply by 13.9%. APAC accounts for a 5.1% share of interest rate derivatives volumes, while EMEA's share amounts to 24.1%.

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

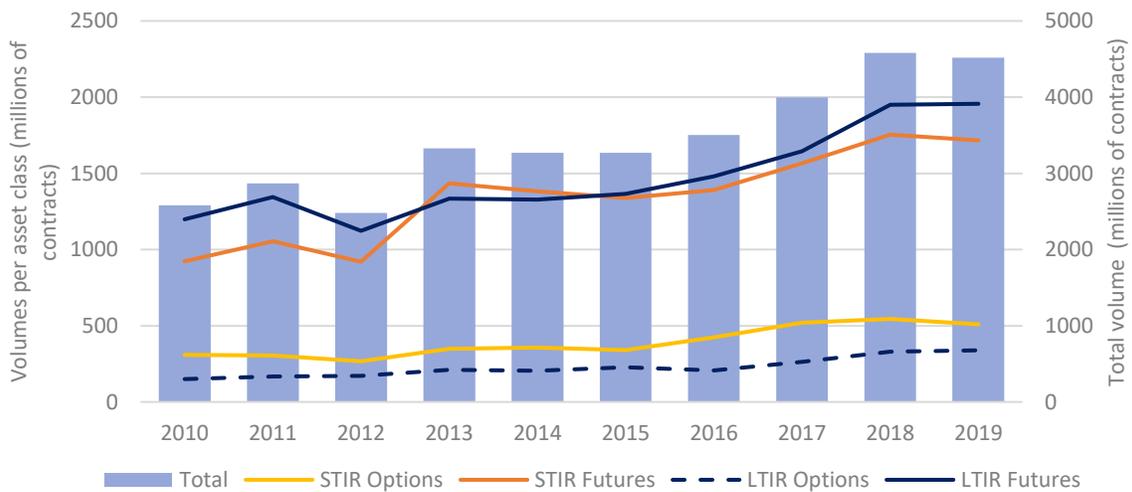
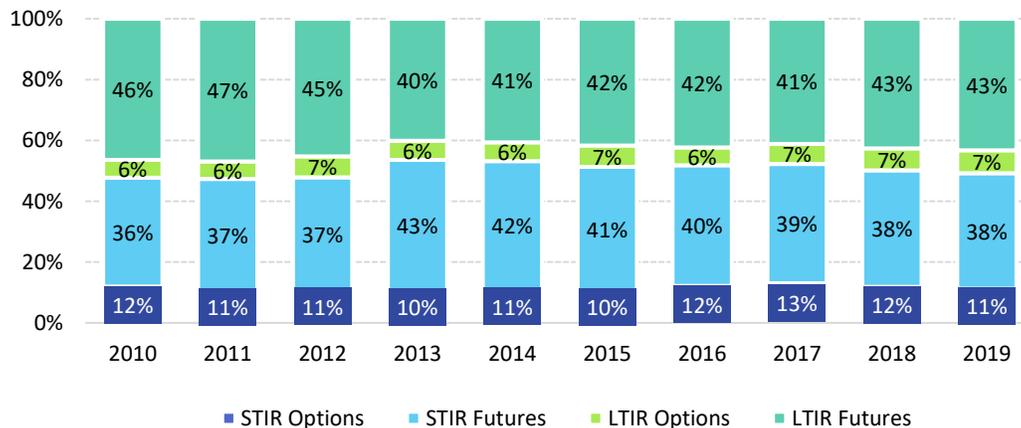


Figure 17: Product composition over time by share of total volume

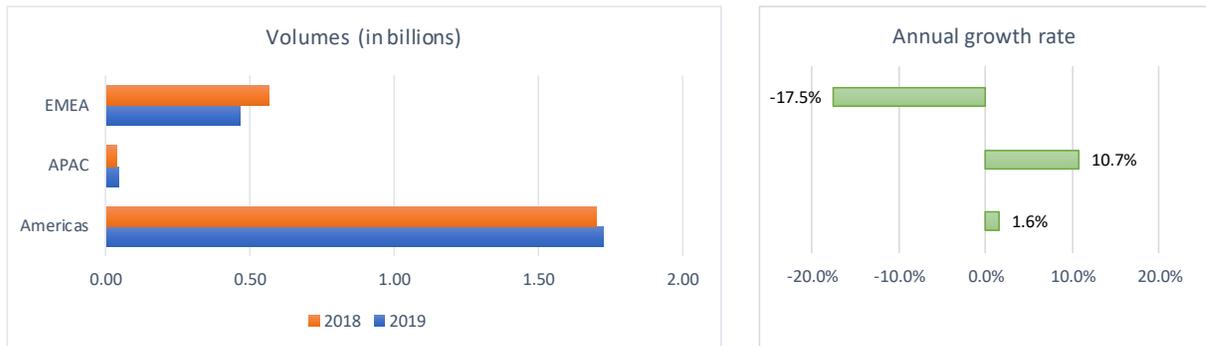


7.1 STIR options and futures

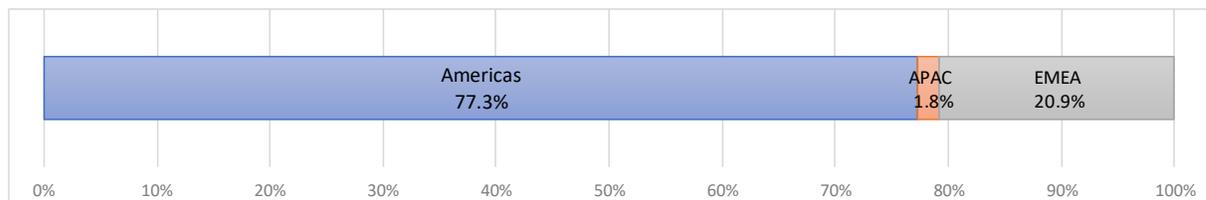
- STIR option volumes (which accounted for 1.5% of total derivative volumes) decreased by 6.5% relative to 2018, and STIR futures (with a 5.2% share) fell by 1.9%.
- The Americas region, where 77.3% of global STIR derivatives are traded, saw volumes increase by 1.6%. APAC experienced the same trend with STIR volumes rising by 10.7%, while in the EMEA volumes decreased by 17.5%
- As figure 18C shows 96% of the trading activity took place on three exchanges - CME Group, B3 – Brasil Bolsa Balcao and ICE Futures Europe, reflecting the highly concentrated market for STIR derivatives.
- One of the most actively traded contract was CME group’s Eurodollar futures.

Figure 18: STIR options and futures

A. Volumes and yearly change



B. Share of volume by region



C. Share of volume by exchange

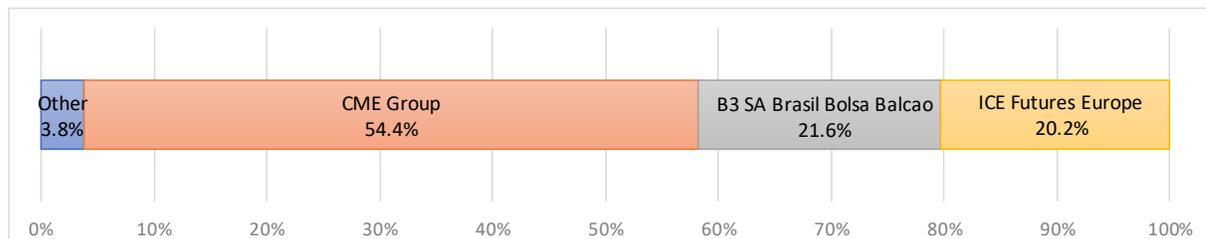


Table 11: Top 10 exchanges by number of short-term interest rate derivatives contracts traded in 2019

	Volume		Notional Value		Open interest	
	2019	YoY change	2019	YoY change	2019	YoY change
CME Group	1,212,875,035	2%	1,587,601,294	9%	57,886,686	3%
B3 SA Brasil Bolsa Balcao	481,027,598	0.3%	10,826,592	30%	32,933,037	-11%
ICE Futures Europe	451,327,749	-15%	387,323,435	-18%	23,210,357	-2%
ASX Australian Securities Exchange	40,318,343	11%	36,367,753	36%	1,564,438	6%
Bourse de Montreal	30,850,962	2%	23,749,778	7%	1,285,926	32%
Nasdaq Nordic and Baltics	8,106,206	-38%	9,087,675	-39%	2,074,886	-19%
LSE Group	5,736,916	73%	4,938,130	76%	394,245	13%
Moscow Exchange	108,086	0.3%	135	13%	51,650	163%
Eurex	38,912	-46%	10,759	-48%	6,306	-63%
Hong Kong Exchanges and Clearing	270	-64%	42	-64%	60	-78%
Others	0	NA	0	NA	0	NA
Total	2,230,390,077	-2.4%	2,059,905,593	2%	119,407,591	-2%

Table 12: Top 10 STIR contracts traded in 2019

Contract Name	Size (lot)	Exchange	Volume	Notional Value	Open interest
			2019	2019	2019
Eurodollar futures	US\$ 2,500 x Contract IMM Index	CME Group	687,072,595	687,072,595	10,939,959
Interbank Deposits futures	Unit price (PU) x 1 real. The contract values 100,000 point at the maturity	B3 - Brasil Bolsa Balcão	476,189,923	43,058,938	31,936,635
Eurodollar options	US\$ 2,500 x Contract IMM Index	CME Group	278,764,545	278,764,545	36,266,803
Options on Average One-Day Interbank Deposit Rate	Value of index x 1 real	B3 - Brasil Bolsa Balcão	214,451,390	32,914	61,187,322
Three Month Euro (Euribor) future	€ 1,000,000	ICE Futures Europe	185,435,139	185,435,139	3,821,640
Three Month Sterling future	£ 500,000	ICE Futures Europe	177,433,667	101,375,276	3,839,413
Euro Mid-Curve options	US\$ 2,500 x Contract IMM Index	CME Group	145,928,255	145,928,255	8,237,474
Fed Funds futures	US\$ 4,167 x Contract IMM Index	CME Group	89,714,542	448,572,710	1,911,620
Three Month Sterling option	One Three Month Sterling Futures Contract	ICE Futures Europe	46,168,361	26,364,627	8,287,290
90 Day Bank Bill (Code: IR) futures	AU\$ 1,000,000 face value	ASX Australian Securities Exchange	33,516,907	32,956,056	1,088,624

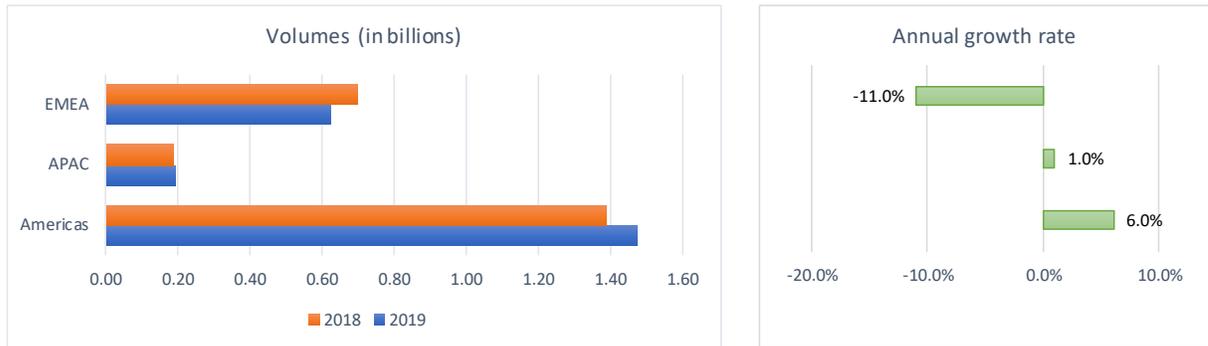
7.2 LTIR options and futures

- Over 2.2 billion LTIR derivatives contracts were traded in 2019, up 0.4% compared to 2018. LTIR options accounted for 1% of total derivatives volumes in 2019, while LTIR futures amounted to 5.9%.
- LTIR futures which accounted for the major share (52.6%) of LTIR derivatives saw volumes increase by 0.04%, while LTIR options increased by 2.6%.

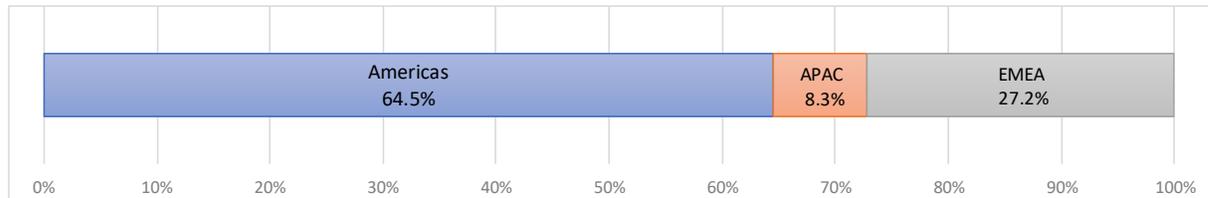
- The Americas region where the majority (64.5%) of the LTIR derivatives are traded saw volumes increase by 6%. Asia-Pacific also saw volumes rise, by 1%, while in EMEA LTIR volumes decreased by 11%.
- The market remained fairly concentrated with more than half of all volumes traded on a single exchange (CME Group) as figure 19C shows
- The contracts with the highest volumes traded were the CME group’s 5-year and 10-year Treasury 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

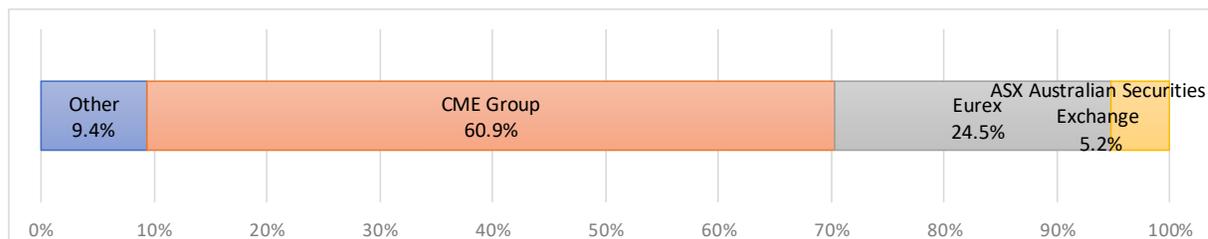


Table 13: Top 10 exchanges by number of long-term interest rate options and futures contracts traded in 2019

	Volume		Notional Value		Open interest	
	2019	YoY change	2019	YoY change	2019	YoY change
CME Group	1,394,987,091	6%	158,365,682	8%	20,699,997	-1%
Eurex	560,736,041	-11%	93,157,386	-8%	6,807,840	-20%
ASX Australian Securities Exchange	119,645,838	11%	8,157,976	11%	2,390,829	5%
ICE Futures Europe	58,089,475	-11%	7,444,148	-12%	680,257	-14%
B3 - Brasil Bolsa Balcão	44,578,570	4%	4,200,238	9%	3,491,662	-21%
Korea Exchange	44,472,045	17%	4,553,507	17%	378,069	-11%
Bourse de Montreal	35,831,631	23%	2,758,402	29%	667,903	24%
National Stock Exchange of India	16,391,410	20%	46,702	25%	156,677	97%
Japan Exchange Group*	10,245,316	-8%	0	NA	83,610	-29%
Nasdaq Nordic and Baltics	3,546,552	-7%	3,975,955	-9%	208,913	-4%
Others	1,115,018	-11%	2,332	-45%	66,760	41%
Total	2,289,638,987	1.3%	282,662,328	2%	35,632,517	-7%

*Japan Exchange Group did not provide notional value.

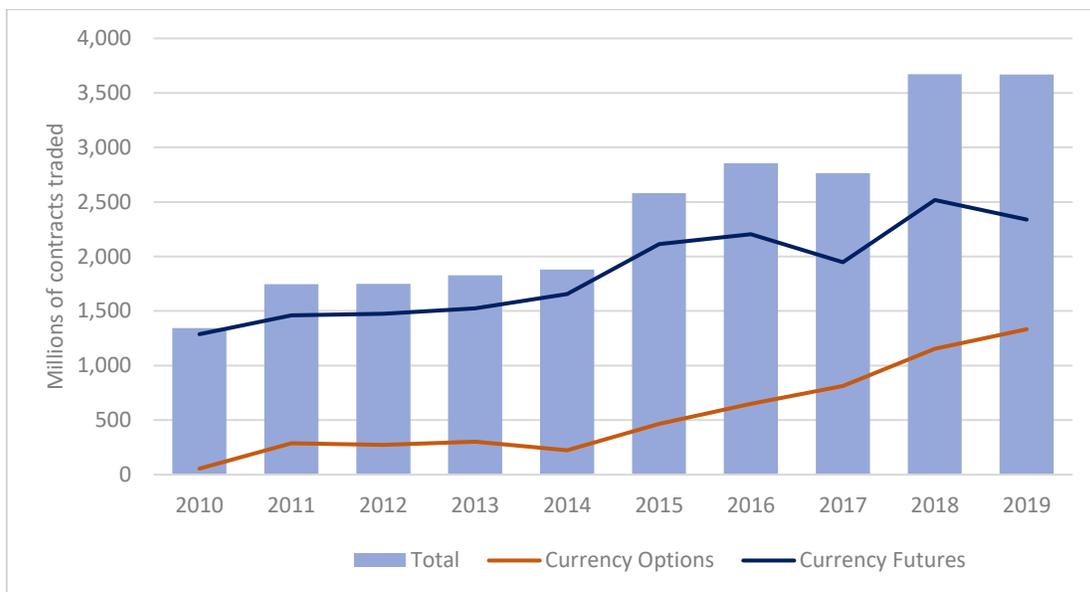
Table 14: Top 10 LTIR contracts traded in 2019

Contract Name	Size (lot)	Exchange	Volume	Notional Value	Open interest
			2019	2019	2019
10-YR NOTE future	Face value at maturity of US\$ 100,000	CME Group	449,829,752	44,982,975	3,624,029
5-YR NOTE future	Face value at maturity of US\$ 100,000	CME Group	294,399,748	29,439,975	4,278,094
FUT 8 1/2-10 1/2 Y.GOV.BOND 6% future	US\$ 100,000	Eurex	184,787,059	31,420,513	1,356,478
2-YR NOTE future	Face value at maturity of US\$ 200,000	CME Group	182,623,959	36,524,792	3,580,082
10-YR NOTE options	Face value at maturity of US\$ 100,000	CME Group	171,150,782	17,115,078	3,124,549
FUT 4 1/2-5 1/2Y.GOV.BONDS 6% future	€ 100,000	Eurex	120,893,813	16,203,709	1,061,724
FUT 1 3/4-2 1/4 Y.GOV.BONDS 6% future	€ 100,000	Eurex	89,976,582	10,085,502	1,342,874
30-YR BOND future	Face value at maturity of US\$ 100,000	CME Group	87,795,571	8,779,557	1,005,197
3 Year bonds (Code: YT) future	AU\$ 100,000 face value	ASX Australian Securities Exchange	63,562,102	6,206,014	1,084,882
Ultra 10-Year Note future	Face value at maturity of US\$ 100,000	CME Group	57,907,848	5,790,785	923,376

8 CURRENCY DERIVATIVES

- Currency derivatives saw a 1.8% increase in volumes traded compared with 2018.
- Volumes largely consist of currency futures contracts, which were down 4.5% year-on-year. Currency options volumes were up 15.4% year-on-year.
- The Asia-Pacific region, where the bulk of the volumes (63.2%) are traded, saw volumes increase by 7.2%. The Americas region, which accounts for 19.5% in terms of volumes traded, observed the same trend with a rise of 15.5%. Only in the EMEA region, which accounts for 17.2% of the currency trading, were volumes down, by 22.8% year-on-year.

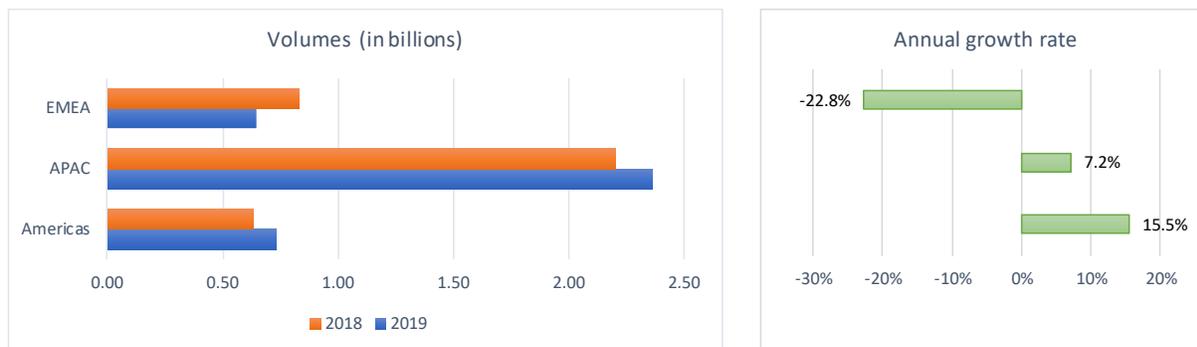
Figure 20: Volumes of currency derivatives (millions of contracts)



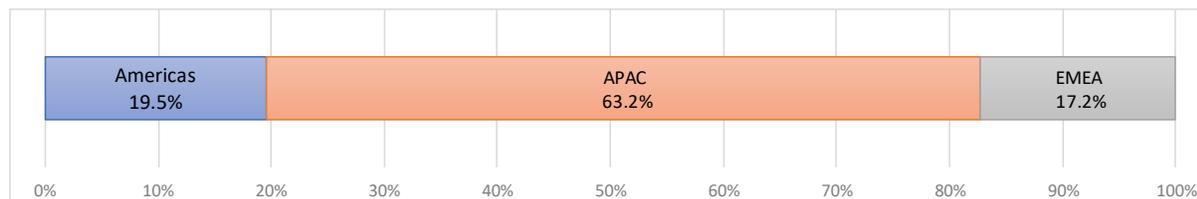
- In terms of volumes, three exchanges accounted for 74% of the currency derivatives trading: National Stock Exchange of India, BSE India and Moscow Exchange.
- In terms of contracts traded, NSE India's USDINR Options and USDINR futures were most traded by volume.

Figure 21: Currency options and futures

A. Volumes and yearly change



B. Share of volume by region



C. Share of volume by exchange

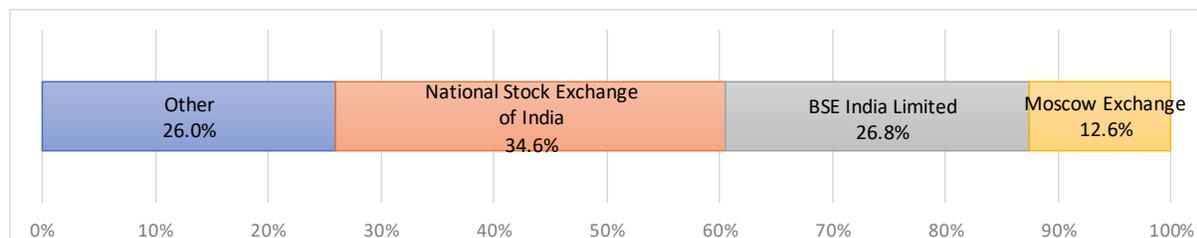


Table 15: Top 10 exchanges by number of currency options and futures contracts traded in 2019

	Volume		Notional Value		Open interest	
	2019	YoY change	2019	YoY change	2019	YoY change
National Stock Exchange of India	1,266,571,646	16%	1,263,856	16%	5,017,018	34%
BSE India Limited	983,059,471	-4%	970,464	-4%	0	NA
Moscow Exchange	461,243,142	-25%	492,050	-14%	4,538,820	9%
B3 - Brasil Bolsa Balcão	451,365,590	19%	8,129,339	3%	6,556,654	169%
CME Group	217,211,403	-9%	20,817,285	-50%	2,442,077	6%
Korea Exchange	87,012,521	14%	879,950	17%	740,395	17%
Borsa Istanbul	73,977,407	-29%	72,183	-24%	1,037,422	-22%
Johannesburg Stock Exchange	71,437,308	-4%	219,058	182%	12,067,678	75%
Dubai Gold and Commodities Exchange	20,795,473	10%	107,671	-9%	312,590	12%
Tel-Aviv Stock Exchange	11,085,138	-23%	114,888	-17%	472,074	12%
Others	21,053,615	-11%	761,790	-15%	1,288,287	16%
Total	3,664,812,714	0.3%	33,828,534	-37%	34,473,015	48%

*BSE India did not provide open interest

Table 16: Top 10 currency contracts traded in 2019

Contract Name	Size (lot)	Exchange	Volume 2019	Notional Value 2019	Open interest 2019
USDINR options*	US\$ 1,000	National Stock Exchange of India	648,945,670	45,913,489	2,404,080
USDINR futures*	US\$ 1,000	National Stock Exchange of India	551,281,470	38,930,923	2,355,701
Futures on USD/RUB Exchange Rate	1,000 roubles	Moscow Exchange	384,156,298	25,019,855	2,330,858
DLR futures	NA	Matba Rofex	206,120,932	10,044,001	2,652,169
U.S. Dollar futures	US\$ 50,000	B3 - Brasil Bolsa Balcão	94,587,950	18,702,850	1,092,538
DRV futures US\$	NA	Korea Exchange	83,996,666	981,104,343	688,640
USDTRY futures	US\$ 1,000	Borsa Istanbul	69,591,308	403,247	876,178
EURO FX futures	US\$ 1,000	CME Group	52,490,124	7,372,926	557,585
GBPINR futures*	NA	National Stock Exchange of India	33,793,268	3,052,741	117,330
Japanese yen futures	12,500,000 yen	CME Group	32,573,773	3,753,010	174,966

*Most recent information, when present (2018). Note that contract size is periodically revised based on SEBI guidelines, as reported by NSE India.

9 COMMODITY DERIVATIVES

- After equity derivatives, commodity derivatives recorded the highest increase in volumes: by 17.2% on 2018 to 6.9 billion in 2019.
- Commodity futures, which accounted for most of the trading among all derivatives with a share of 20%, saw volumes increase by 18.4%, while commodity options volumes were down by 6.3% on 2018.
- A 16.3% decline in number of commodity derivatives contracts traded in the Americas region was offset by increases in volumes in the EMEA and Asia-Pacific regions of 16.3% and 32.7% respectively. The largest share of commodity derivatives trading takes place in Asia-Pacific region (62%).
- Three exchanges – Shanghai Futures Exchange, CME Group and Dalian Commodity Exchange - accounted for more than half the overall volumes.

Figure 22: Volumes of commodity options and futures (millions of contracts)

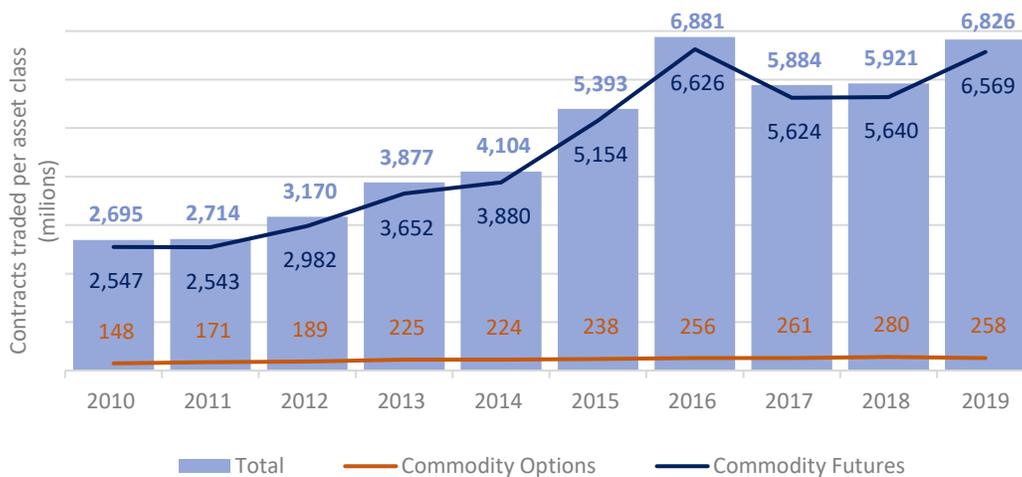
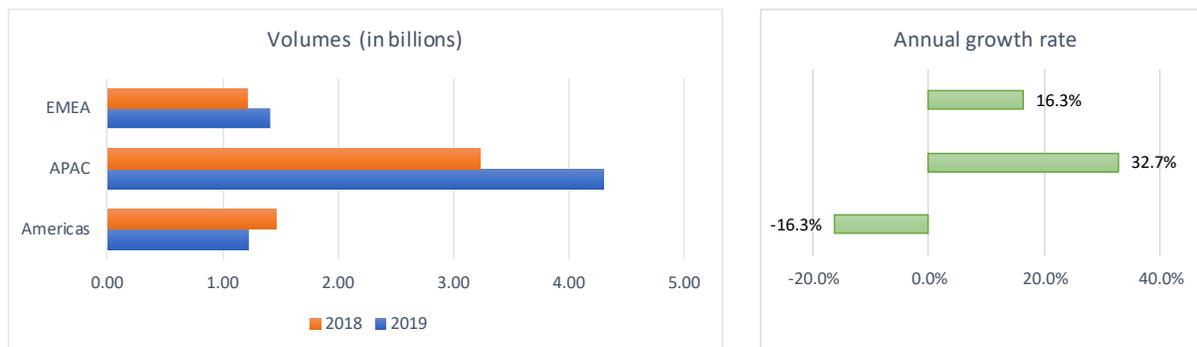
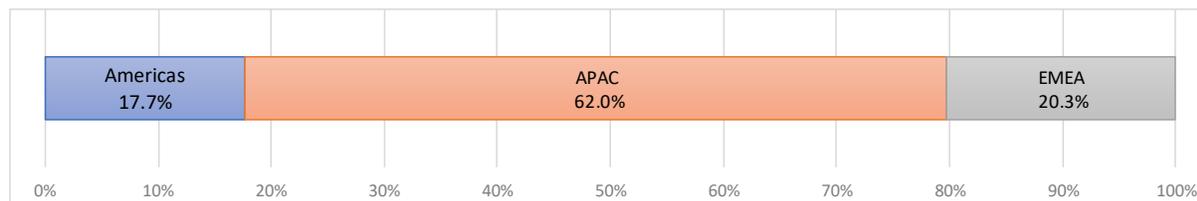


Figure 23: Commodity options and futures

A. Volumes and yearly change



B. Share of volume by region



C. Share of volume by exchange

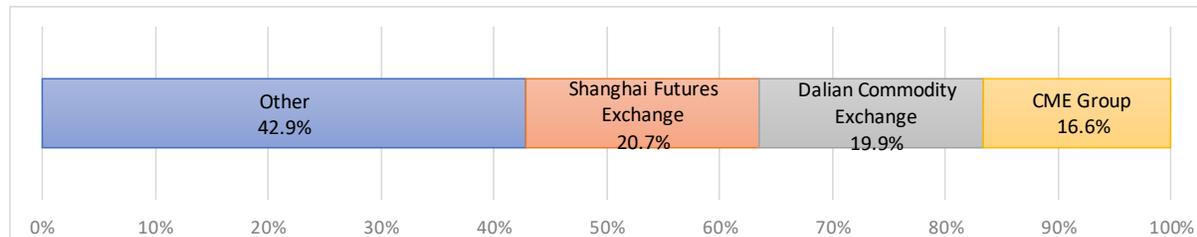


Table 17: Top 10 exchanges by number of commodity options and futures contracts traded in 2019

	Volume		Notional Value		Open interest	
	2019	YoY change	2019	YoY change	2019	YoY change
Shanghai Futures Exchange	1,411,969,733	20%	13,923,058	17%	5,748,273	37%
Dalian Commodity Exchange	1,355,584,225	38%	9,898,796	30%	9,686,951	113%
CME Group	1,133,124,055	-4%	60,597,611	-8%	24,486,658	-13%
Zhengzhou Commodity Exchange	1,092,486,045	34%	363,995	-93%	4,429,311	49%
Moscow Exchange	663,687,221	39%	450,110	47%	3,285,120	105%
ICE Futures Europe	482,608,092	-2%	23,296,908	-18%	13,491,751	2%
Multi Commodity Exchange of India	307,095,652	33%	1,108,564	18%	224,188	-34%
London Metal Exchange	176,260,936	-5%	17,939,963	14%	2,427,423	8%
ICE Futures US	92,613,557	-68%	2,020,422	-4%	3,094,748	5%
Borsa Istanbul	58,571,990	163%	11,751	195%	481,607	76%
Others	52,224,496	33%	706,864	60%	4,311,748	104%
Total	6,826,226,002	15.9%	130,318,041	-6%	71,667,778	15%

Table 18: Top 10 commodity contracts traded in 2019*

	Contract Name	Size (lot)	Exchange	Volume	Notional Value	Open interest
				2019	2019	2019
1	Futures on Brent oil	US\$ 10 per 1 barrel	Moscow Exchange	616,575,370	25,413,037	2,684,190
2	PTA futures	1 ton/lot	Zhengzhou Commodities Exchange	312,470,222	8,882,021	918,896
3	Iron Ore futures	100 Metric tonne/Contract	Dalian Commodity Exchange	296,538,010	19,873,140	702,827
4	CRUDE OIL futures	1,000 barrels	CME Group	291,648,494	16,596,793	2,146,037
5	Soybean Meal futures	100 Short Ton (~ 91 metric tons)	Dalian Commodity Exchange	272,869,691	7,603,012	2,925,246
6	Methanol futures	10,000 million British thermal units (mmBtu)	Zhengzhou Commodities Exchange	265,094,214	6,100,150	877,821
7	Brent Crude futures	1,000 barrels	ICE Futures Europe	221,329,190	10,490,953	2,594,785
8	Rapeseed meal futures	NA	Zhengzhou Commodities Exchange**	138,085,360	3,201,333	329,954
9	Palm Olein futures	10 Metric tonne/Lot	Dalian Commodity Exchange	135,504,196	7,129,820	888,380
10	CRUDEOILM futures	10 Barrels	Multi Commodity Exchange of India	134,909,828	5,390,660	45

*Shanghai Futures Exchange did not submit contract level information, which might have affected the rankings.

**Zhengzhou Commodities Exchange did not provide contract size

9.1 Commodity derivatives by type of underlying commodity

This year, in addition to aggregate commodity derivatives trading statistics, more granular data on commodity derivatives by underlying commodity has also been collected. These show categories of underlying commodities by which commodity derivatives contracts have been classified, and 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 for freight, plastic-polypropylene and glass.

Key trends and highlights from this data are as follows:

- Energy and agriculture accounted for the bulk (45.4% and 30.2% respectively) of global commodity derivatives volumes. While volumes of other commodities and energy based derivatives were up 54.5% and 25.4% respectively, agriculture-based commodities saw volumes fall 20.9% from 2018. The same trend was recorded by index commodity derivatives, which fell 96.8%, precious metals 11.5% and non-precious metals (76.2%).
- Volumes of agricultural commodity derivatives were up in the Asia-Pacific region by 17.8% where the bulk (74.1%) of contracts trading takes place. In the Americas, where 24.4% of the contracts were traded, volumes were down 20.2%. EMEA also registered a fall in contracts traded by 95.5% on 2018.
- Energy derivatives volumes were up 127% in the EMEA, where 47.9% of contracts are traded and in the Asia-Pacific region (where 25.8% of contracts are traded) by 20.1%, while in the Americas (where the remaining 26.3% of contracts are traded) volumes fell by 29.3%.
- The volume of non-precious metals registered a fall in all three regions: Asia-Pacific region, where 93.1% of the contracts are traded, saw a decline of 74.2%, the Americas which accounts for 6.9% registered a 24.8% decrease, while EMEA volumes fell to nearly zero.
- “Other” commodities, precious metals and index commodity derivatives accounted for the remaining share of commodity derivatives volumes. While volumes of other commodity derivatives increased by 54.5%, precious metals and index commodity volumes decreased 11.4% and 96.8% respectively.
- As with other products, there is a large variation in contract sizes across markets. Regional shares of volumes traded chart must be interpreted in this context.

Table 19: Breakdown of volumes by underlying commodity*

Category	2019 Volume	2018 Volume	% change YoY
Agriculture	1,510,756,653	1,906,498,461	-20.9%
Energy	2,276,447,660	1,815,789,033	25.4%
Index commodity derivatives	46,287	1,443,103	-96.8%
Non-precious metals	362,484,059	1,522,680,271	-76.2%
Other commodities	618,893,530	400,669,143	54.5%
Precious metals	240,700,687	271,817,771	-11.5%
Grand Total	5,009,328,876	5,918,897,782	-15.4%

*Shanghai Futures Exchange did not submit contract level information, which might have affected the rankings.

Table 20: Top five exchanges by volumes traded in 2019*

Top five exchanges by volumes traded in 2019 and % change on 2018				
Agriculture	Volume	%/'18	Notional Value	%/'18
Dalian Commodity Exchange	686,558,247	36%	3,597,144	47%
Zhengzhou Commodity Exchange	429,409,597	16%	195,104	-94%
CME Group	366,266,418	-2%	10,398,670	-6%
ICE Futures Europe	18,789,762	-96%	357,805	-99%
Johannesburg Stock Exchange	3,449,201	5%	803,264	1626%
Energy				
Moscow Exchange	626,054,142	39%	416,509	45%
CME Group	598,439,661	-7%	31,202,602	-17%
ICE Futures Europe	463,818,330	2541%	22,939,103	6645%
Zhengzhou Commodity Exchange	292,758,822	38%	70,848	-94%
Multi Commodity Exchange of India	215,356,526	78%	486,435	46%
Non-precious metals				
Dalian Commodity Exchange	296,901,876	26%	2,854,233	70%
Multi Commodity Exchange of India	49,223,300	-37%	255,423	-31%
CME Group	25,158,952	-25%	1,694,787	-31%
Zhengzhou Commodity Exchange	20,478,779	-49%	6,177	-97%
Singapore Exchange**	19,851,976	42%	0	NA
Precious metals				
CME Group	143,259,557	12%	17,301,588	21%
Borsa Istanbul	58,506,505	163%	11,388	197%
Multi Commodity Exchange of India	40,768,528	42%	353,496	60%
Moscow Exchange	37,631,623	31%	33,599	78%
Hong Kong Exchanges and Clearing	573,173	63%	31,413	102%
Index commodity derivatives				
Eurex	46,287	-97%	2,551	-54%
Other commodities				
Zhengzhou Commodity Exchange	349,838,847	78%	91,866	-90%
Dalian Commodity Exchange	268,999,946	116%	1,591,538	104%
Nasdaq Nordic and Baltics	54,737	-95%	691	-91%

*Shanghai Futures Exchange did not submit contract level information, which might have affected the rankings.

**Singapore Exchange did not provide notional value

Figure 24: Share of total volume by type of underlying commodity: 2019 compared with 2018

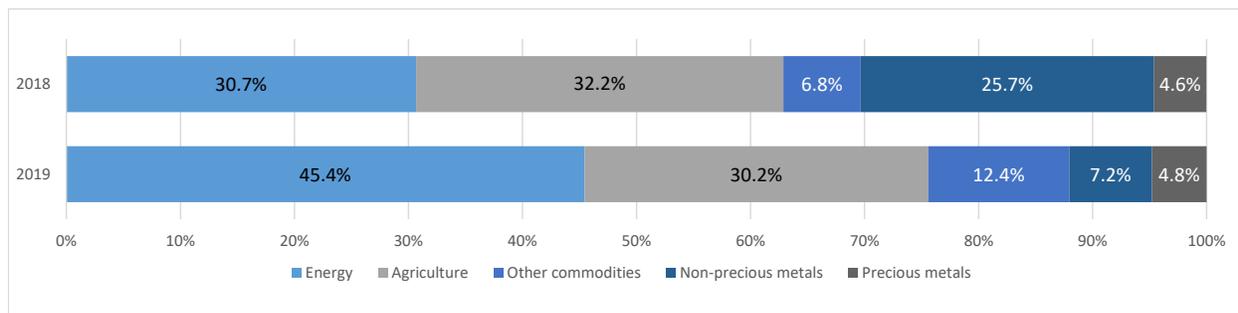
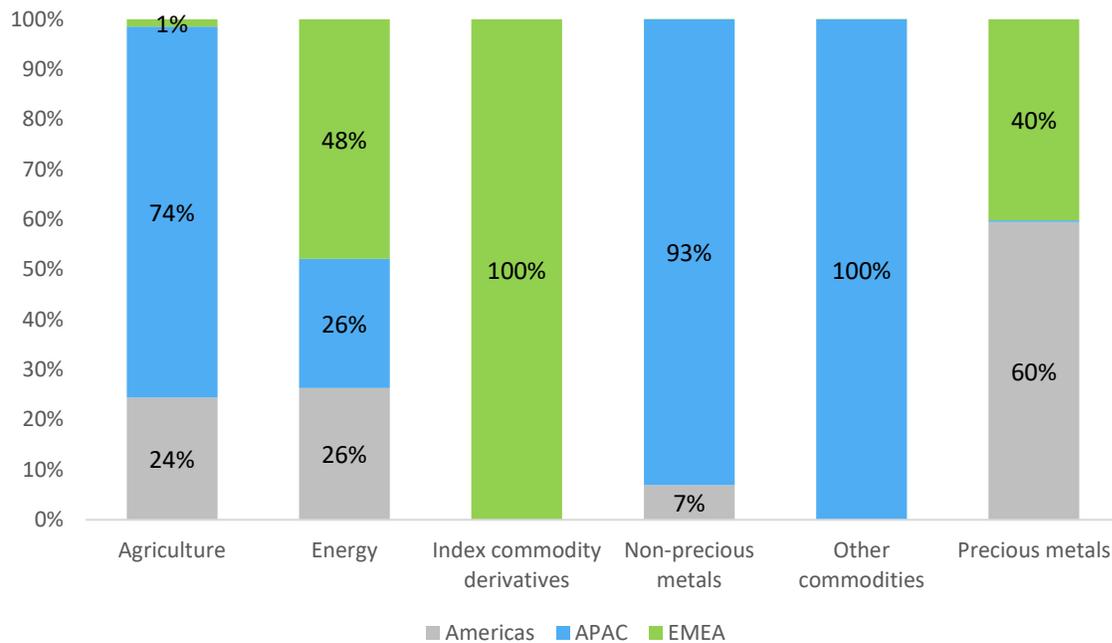


Figure 25: Share of total volume by commodity type and region in 2019



10 OTHER OPTIONS & FUTURES

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

Volumes traded of other options and other futures were down 23.6% and 80.2% on 2018.

The volume of other options and futures fell in the Americas by 22.1% and in EMEA by 60.8%. America's share of volumes traded is 79% while the rest is traded in Europe.

The decline in the volumes of other futures and other options was due to the falling volumes of Eurex and ICE Futures Europe.

Table 21: Exchanges by number of “other” options contracts traded in 2019*

	Volume		Notional Value		Open interest	
	2019	YoY change	2019	YoY change	2019	YoY change
Cboe Global Markets	126,627,356	-24%	0	-100%	4,894,892	-30%
Eurex	9,792,620	-11%	47,688	-10%	2,032,219	8%
ICE Futures Europe	2,631,225	5%	4,623	20%	225,304	3%
Total	139,051,201	-23%	52,311	-84%	7,152,415	-22%

*Cboe Global Markets did not provide notional values

Table 22: Exchanges by number of “other” futures contracts traded in 2019

	Volume		Notional Value		Open interest	
	2019	YoY change	2019	YoY change	2019	YoY change
Eurex	30,005,182	1%	120,960	-10%	4,271,293	-18%
ICE Futures Europe	7,930,484	-6%	219,529	32%	816,579	-18%
LSE Group	67,486	81%	156	60%	28,592	24%
Total	38,003,152	-0.4%	340,644	14%	5,116,464	-18%

II ANNEX I – LIST OF EXCHANGES THAT CONTRIBUTED TO THE REPORT

Athens Stock Exchange	Indian Commodity Exchange
ASX Australian Securities Exchange	Japan Exchange Group
B3 - Brasil Bolsa Balcão	Korea Exchange
BME Spanish Exchanges	LSE Group
Bolsa de Valores de Colombia	Matba Rofex
Bolsa Mexicana de Valores	MIAX Options Exchange
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
Bursa Malaysia Derivatives	National Stock Exchange of India
CBOE Global Markets	NZX Limited
China Financial Futures Exchange	Shenzhen Stock Exchange
CME Group	Singapore Exchange
Dalian Commodity Exchange	SPIMEX
Dubai Gold & Commodities Exchange	Taiwan Futures Exchange
Eurex Exchange	Tehran Stock Exchange
Euronext	Thailand Futures Exchange
Hong Kong Exchanges and Clearing	Warsaw Stock Exchange
ICE Futures Europe	Zhengzhou Commodity Exchange
ICE Futures US	

12 ANNEX 2 – 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 (US\$ millions) is the number of contracts traded multiplied by the contracts’ underlying value. The underlying contract value is calculated by multiplying the market price of the underlying asset for each contract by 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		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas						
B3 - Brasil Bolsa Balcão	983,518,149	831,271,250	859,817	633,203	27,733,479	19,414,603
Bolsa Mexicana de Valores	805,011	352,759	83	97	15,000	72,540
Bolsa y Mercados Argentinos	30,002,360	30,692,824	-	-	-	-
Bourse de Montreal	29,142,959	29,405,993	124,635	52,021	4,091,345	3,458,571
Cboe Global Markets	945,546,703	780,620,514	-	-	182,274,299	178,672,760
International Securities Exchange	129,615,098	325,921,170	-	-	-	-
MIAX Exchange Group	260,266,648	122,530,187	3,676,239	2,989,209	-	-
Nasdaq - US	826,435,818	702,389,037	-	-	-	-
NYSE	365,939,402	444,946,374	108,202	145,493	-	-
APAC						
ASX Australian Securities Exchange	67,999,671	72,126,000	135,318	140,317	6,299,500	6,113,202
Hong Kong Exchanges and Clearing	106,417,826	125,683,652	358,513	428,612	6,624,472	7,111,353
Japan Exchange Group	394,786	596,368	-	-	64,504	67,283
Korea Exchange	24,402,791	18,743,585	-	-	295,227	291,749
National Stock Exchange of India	201,931,170	170,098,254	1,442,007	1,742,409	330,203	282,037
Taiwan Futures Exchange	206,166	209,341	678	1,184	2,612	3,023
EMEA						
Athens Stock Exchange	20,813	9,404	8	3	903	1,099
BME Spanish Exchanges	17,492,103	20,237,873	16,990	17,640	5,950,233	6,155,926
Borsa Istanbul	5,024,915	2,593,550	498	410	758,065	202,879
Eurex	185,670,864	188,891,931	891,612	889,363	50,925,143	47,077,055
Euronext	62,692,638	7,816,261	258,441	233,261	11,168,760	12,395,283
ICE Futures Europe	12,686,408	14,955,606	207,484	225,282	2,825,166	2,875,197
Johannesburg Stock Exchange	6,864,671	7,783,111	14,135	522	1,954,404	996,186
Moscow Exchange	2,393,962	1,230,677	819	364	274,988	106,742
Nasdaq Nordic and Baltics	19,120,847	21,504,232	28,918	30,909	2,570,233	2,753,661
Oslo Bors	1,883,741	1,961,440	2,548	3,000	120,354	213,977
Tehran Stock Exchange	1,051,389,609	2,934,358	35	2	-	-
Tel-Aviv Stock Exchange	764,265	645,117	4,554	4,381	55,147	35,771
Grand Total	5,338,629,394	3,926,150,868	8,131,535	7,537,681	304,334,037	288,300,897

*the dash in the table represents missing values

Single Stock Futures

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas						
Bolsa de Valores de Colombia	244,663	143,416	391	238	13,357	10,872
Bolsa Mexicana de Valores	38,888	15,200	7	4	2,636	2,700
Bourse de Montreal	4,406,202	1,051,667	18,844	73,506	182,061	78,658
APAC						
ASX Australian Securities Exchange	3,117,588	2,837,126	3,979	3,533	626,336	686,251
BSE India Limited	201	295	0	3	-	-
Hong Kong Exchanges and Clearing	894,900	852,238	3,768	3,474	26,986	19,934
Korea Exchange	616,946,569	501,723,576	296,031	336,846	5,165,115	3,071,025
National Stock Exchange of India	255,120,205	252,932,988	2,055,257	2,421,409	1,846,372	1,750,523
Taiwan Futures Exchange	19,788,425	22,812,494	173,221	174,002	163,555	115,116
Thailand Futures Exchange	52,098,173	55,332,444	-	-	2,917,490	2,134,802
EMEA						
Athens Stock Exchange	9,656,078	11,708,668	2,281	1,641	340,861	242,066
BME Spanish Exchanges	16,056,727	11,175,006	8,328	6,693	1,394,130	1,274,822
Borsa Istanbul	196,631,519	54,692,782	28,271	9,545	2,830,090	741,946
Budapest Stock Exchange	142,978	155,148	915	1,008	7,772	6,532
Dubai Gold and Commodities Exchange	1,673,921	2,674,548	2,622	4,275	524	405
Eurex	232,226,570	176,257,731	746,928	624,163	8,469,519	5,960,187
Euronext	4,261,857	88,471	19,749	4,118	1,390,438	276,211
ICE Futures Europe	39,181,471	102,738,408	3,134,410	3,557,262	189,567	290,094
Johannesburg Stock Exchange	9,146,810	9,263,458	5,859	7,323	1,134,815	892,191
Moscow Exchange	205,898,967	235,942,570	70,154	63,909	1,586,442	1,486,386
Nasdaq Nordic and Baltics	2,844,250	3,725,479	3,730	5,945	417,821	507,578
Oslo Bors	622,795	653,959	478	555	86,466	66,625
Warsaw Stock Exchange	1,311,749	1,296,270	2,425	2,415	26,407	13,859
Grand Total	1,672,311,506	1,448,073,942	6,577,648	7,301,867	28,818,760	19,628,783

*the dash in the table represents missing values

Stock Index Options

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas						
B3 - Brasil Bolsa Balcão	41,785,034	23,396,046	445,361	179,886	533,799	420,797
Bolsa Mexicana de Valores	11,087	10,789	251	260	328	1,047
Bourse de Montreal	71,755	198,698	517	1,428	1,257	98,800
Cboe Global Markets	347,834,727	559,903,954	-	-	18,308,070	23,545,067
CME Group	162,279,982	207,538,061	28,353,445	35,045,555	3,468,387	3,900,006
International Securities Exchange	416,385	1,128,042	-	-	-	-
Nasdaq - US	2,806,343	3,514,163	-	-	-	-
APAC						
ASX Australian Securities Exchange	9,793,757	12,850,211	433,084	542,752	688,707	774,362
Bursa Malaysia Derivatives	13,833	10,486	1	25	536	244
Hong Kong Exchanges and Clearing	38,297,384	40,026,686	3,867,243	4,206,621	2,334,663	2,612,803
Japan Exchange Group	30,699,470	36,283,128	-	-	1,646,864	1,980,087
Korea Exchange	668,775,772	676,874,836	38,914,957	44,432,804	2,726,479	2,917,431
National Stock Exchange of India	4,165,447,121	2,214,848,247	33,477,121	27,392,452	1,936,926	1,996,691
Singapore Exchange	11,048,739	11,537,530	-	-	1,735,457	1,588,885
Taiwan Futures Exchange	170,194,590	194,808,912	3,066,370	3,381,578	605,441	570,241
Thailand Futures Exchange	1,677,323	1,362,520	-	-	22,127	18,439
EMEA						
Athens Stock Exchange	62,994	71,823	289	324	1,752	1,383
BME Spanish Exchanges	3,806,355	4,183,154	38,744	45,557	532,290	745,683
Borsa Istanbul	271,800	172,667	585	418	39,201	16,860
Eurex	431,575,858	419,177,371	15,965,111	16,227,218	43,598,835	41,697,152
Euronext	16,659,188	1,540,501	1,019,996	2,805,520	665,761	742,244
ICE Futures Europe	12,272,721	12,911,705	15,164	16,070	1,507,901	1,743,754
Johannesburg Stock Exchange	4,069,365	4,760,767	30,601	2,169	845,105	785,857
Moscow Exchange	18,607,697	31,123,228	50,173	63,889	272,132	259,824
Nasdaq Nordic and Baltics	6,911,720	6,745,132	117,622	117,176	612,564	424,532
Oslo Bors	612,705	740,580	5,620	43,947	73,133	71,696
Tel-Aviv Stock Exchange	23,749,755	33,097,322	1,092,303	254,179	170,329	200,210
Warsaw Stock Exchange	225,959	292,949	1,341	1,799	15,730	13,475
Grand Total	6,169,979,419	4,499,109,508	126,895,897	134,761,625	82,343,774	87,127,570

*the dash in the table represents missing values

Stock Index Futures

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas						
B3 - Brasil Bolsa Balcão	1,454,364,476	680,800,377	7,958,289	3,263,696	925,126	5,730,984
Bolsa de Valores de Colombia	23,106	2,782	75	31	3,415	282
Bolsa Mexicana de Valores	909,065	935,544	20,628	21,908	40,249	40,101
Bolsa y Mercados Argentinos	791,709	381,901	478	225,011	-	-
Bourse de Montreal	7,864,390	7,710,307	1,172,699	510,028	314,221	272,693
Cboe Futures Exchange	62,732,457	75,609,251	-	-	405,027	386,478
CME Group	709,464,213	696,741,217	88,643,988	92,325,625	4,312,102	4,201,586
ICE Futures US	52,452,506	47,752,834	2,708,214	2,707,039	1,930,436	1,617,309
APAC						
ASX Australian Securities Exchange	16,627,549	15,672,245	1,843,182	1,605,552	385,157	296,526
BSE India Limited	74	393	0	5	-	-
Bursa Malaysia Derivatives	2,078,506	4,798,485	44,217	52,030	28,786	19,779
China Financial Futures Exchange	53,251,311	16,344,327	78,707	2,289,042	349,263	178,625
Hong Kong Exchanges and Clearing	112,193,367	125,840,585	12,319,179	14,242,842	604,384	708,430
Japan Exchange Group	299,896,154	340,058,856	13,238,290	15,070,286	1,716,495	2,512,109
Korea Exchange	97,821,400	99,046,237	4,062,632	4,747,408	789,831	625,576
National Stock Exchange of India	83,490,232	69,003,655	842,530	836,892	244,548	393,741
Singapore Exchange	179,954,516	170,522,336	-	-	2,081,466	2,191,819
Taiwan Futures Exchange	68,026,954	87,615,517	3,096,680	3,991,940	148,862	152,709
Thailand Futures Exchange	42,450,171	42,544,040	-	-	280,520	241,787
EMEA						
Athens Stock Exchange	607,807	652,923	2,800	2,538	10,506	4,635
BME Spanish Exchanges	7,565,663	7,906,180	627,609	712,120	126,392	129,532
Borsa Istanbul	62,350,402	55,730,451	131,664	133,653	472,425	409,980
Budapest Stock Exchange	338,642	390,391	473	519	4,350	5,239
Eurex	504,431,237	496,862,545	24,894,993	25,324,052	10,228,038	9,436,065
Euronext	37,165,864	3,346,926	2,766,381	6,006,395	692,682	576,631
ICE Futures Europe	37,545,907	42,500,543	3,347,209	3,793,407	944,162	842,344
Johannesburg Stock Exchange	20,156,917	18,133,205	493,263	403,023	391,533	509,151
Moscow Exchange	102,759,520	138,999,745	266,472	275,866	490,498	242,126
Nasdaq Nordic and Baltics	37,449,249	42,318,183	631,728	712,589	499,312	579,181
Oslo Bors	2,437,427	2,285,626	22,261	19,326	40,170	44,684
Warsaw Stock Exchange	3,546,508	4,529,902	42,109	55,149	46,915	49,466
Grand Total	4,060,747,299	3,295,037,509	169,256,750	179,327,971	28,506,871	32,399,568

*the dash in the table represents missing values

ETF Options

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas						
B3 - Brasil Bolsa Balcão	36,989,550	19,636,550	9,125,392	3,924,214	186,372	114,665
Bolsa Mexicana de Valores	2	4	-	-	-	-
Bourse de Montreal	7,985,724	14,482,523	15,099	10,669	962,364	1,645,592
Cboe Global Markets	631,360,737	634,744,592	-	-	86,829,976	93,290,363
International Securities Exchange	80,321,461	285,368,872	-	-	-	-
MIAX Exchange Group	179,347,794	78,181,231	3,662,577	3,634,707	-	-
Nasdaq - US	479,746,704	464,343,181	-	-	-	-
NYSE	303,948,415	361,804,393	48,745	67,144	-	-
APAC						
Hong Kong Exchanges and Clearing	2,396,068	1,595,449	23,889	15,552	78,066	102,133
Japan Exchange Group	842,360	318,265	-	-	13,405	2,640
Taiwan Futures Exchange	156,358	153,669	1,471	1,425	2,030	3,437
EMEA						
Eurex	-	-	-	-	72,323	3,016
Grand Total	1,723,095,173	1,860,628,729	12,877,173	7,653,710	88,144,536	95,161,846

*the dash in the table represents missing values

ETF Futures

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas						
Bourse de Montreal	13,615	10,300	-	-	-	-
APAC						
Hong Kong Exchanges and Clearing	22,458	10,789	231	99	291	542
Taiwan Futures Exchange	1,064,343	1,520,673	13,526	17,076	11,063	16,322
EMEA						
Johannesburg Stock Exchange	103,919	423,035	11	57	-	-
Grand Total	1,204,335	1,964,797	13,768	17,232	11,354	16,864

*the dash in the table represents missing values

Long Term Interest Rate Options

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas						
Bourse de Montreal	16,876	43,447	1,299	3,188	2,240	6,674
CME Group	271,617,343	250,953,534	27,766,311	25,678,355	5,730,880	6,416,613
APAC						
ASX Australian Securities Exchange	1,328,959	781,113	93,326	55,109	49,878	5,440
Japan Exchange Group	631,807	783,545	-	-	4,411	7,720
EMEA						
Eurex	65,095,288	77,383,515	11,381,908	12,617,757	1,618,928	2,204,546
ICE Futures Europe	144,880	148,038	16,242	16,944	13,398	8,050
Grand Total	338,835,153	330,093,192	39,259,086	38,371,353	7,419,735	8,649,043

*the dash in the table represents missing values

Long Term Interest Rate Futures

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas						
Bolsa Mexicana de Valores	334,183	534,386	1,961	2,980	14,500	19,500
Bourse de Montreal	35,814,755	29,176,260	2,757,102	2,140,591	665,663	531,862
CME Group	1,123,369,748	1,068,042,134	130,599,371	120,350,648	14,969,117	14,481,150
B3 - Brasil Bolsa Balcão	44,578,570	42,675,958	4,200,238	3,868,831	3,491,662	4,396,041
APAC						
ASX Australian Securities Exchange	118,316,879	104,817,954	8,064,650	7,299,685	2,340,951	2,270,228
Japan Exchange Group	9,613,509	38,125,594	-	-	79,199	422,563
Korea Exchange	44,472,045	38,125,594	4,553,507	3,896,315	378,069	422,563
National Stock Exchange of India	16,359,218	13,670,880	46,610	37,481	150,997	79,656
Singapore Exchange	426,829	521,185	-	-	12,992	18,325
EMEA						
Eurex	495,640,753	551,003,098	81,775,478	88,282,476	5,188,912	6,244,199
ICE Futures Europe	57,944,595	65,366,426	7,427,906	8,436,533	666,859	784,865
LSE Group	2,773	7,578	313	1,266	454	50
Nasdaq Nordic and Baltics	208,913	217,698	3,546,552	3,820,379	3,975,955	4,372,644
Grand Total	1,947,082,770	1,952,284,745	242,973,688	238,137,185	31,935,330	34,043,646

*the dash in the table represents missing values

Short Term Interest Rate Options

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas						
Bourse de Montreal	1,034,240	1,095,579	796,182	803,800	288,136	149,370
CME Group	424,771,819	356,755,198	425,087,895	370,757,645	44,510,927	41,242,387
B3 - Brasil Bolsa Balcao	1,039,760	104,053,963	29	2,638	254,500	17,083,366
EMEA						
Eurex	439	610	121	173	487	1,611
ICE Futures Europe	81,827,795	81,688,752	65,043,692	70,403,663	15,334,090	14,369,524
Nasdaq Nordic and Baltics	20,000	585,000	604,500	917,500	677,691	1,050,132
Grand Total	508,694,053	544,179,102	491,532,419	442,885,419	61,065,831	73,896,390

*the dash in the table represents missing values

Short Term Interest Rate Futures

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas						
Bolsa Mexicana de Valores	-	-	-	-	3,420	-
Bourse de Montreal	29,816,722	29,018,180	22,953,597	21,289,934	997,790	822,968
CME Group	788,103,216	831,973,027	1,162,513,399	1,092,399,352	13,375,759	15,056,350
B3 - Brasil Bolsa Balcao	479,987,838	375,398,866	10,826,563	8,318,376	32,678,537	19,824,396
APAC						
ASX Australian Securities Exchange	40,318,343	36,412,419	36,367,753	26,815,264	1,564,438	1,477,671
Hong Kong Exchanges and Clearing	270	759	42	118	60	272
EMEA						
Borsa Istanbul	119	-	20	-	1	-
Eurex	38,473	71,709	10,638	20,531	5,819	15,451
ICE Futures Europe	369,499,954	451,647,563	322,279,742	403,026,662	7,876,267	9,261,141
LSE Group	5,736,916	3,315,984	4,938,130	2,802,437	394,245	347,940
Grand Total	1,713,501,851	1,727,838,507	1,559,889,884	1,554,672,674	56,896,336	46,806,189

*the dash in the table represents missing values

Currency Options

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas						
B3 - Brasil Bolsa Balcão	10,166,813	8,238,984	10,270	5,060	909,667	1,123,316
Bolsa de Valores de Colombia	1,833	6	-	-	-	-
Bolsa Mexicana de Valores	46,975	126,508	485	1,236	1,815	4,500
Bourse de Montreal	2,184	104	17	1	532	6
CME Group	12,893,630	18,599,601	1,465,916	2,191,566	543,969	638,449
ICE Futures US	9,775	5,708	946	537	1,010	1,472
APAC						
BSE India Limited	597,155,819	559,517,698	588,675	383,515	-	-
Hong Kong Exchanges and Clearing	15,429	30,067	1,545	2,979	1,643	5,625
National Stock Exchange of India	649,002,064	484,284,232	643,520	483,119	2,404,889	1,712,653
Singapore Exchange	165	75	-	-	-	-
Taiwan Futures Exchange	121,944	135,026	3,634	3,939	2,167	3,532
EMEA						
Borsa Istanbul	2,747,131	5,306,146	2,621	4,524	125,816	74,998
Budapest Stock Exchange	73,850	70,150	81	80	550	9,600
Dubai Gold and Commodities Exchange	28,326	187,174	1	7	199	1,037
Johannesburg Stock Exchange	27,199,540	32,230,327	171,672	37,189	6,033,839	5,489,721
Moscow Exchange	22,571,105	33,018,691	23,867	29,831	1,835,536	1,375,680
Tel-Aviv Stock Exchange	11,085,138	14,359,596	114,888	138,590	472,074	420,731
Grand Total	1,333,121,721	1,156,110,093	3,028,139	3,282,174	12,333,706	10,861,320

*the dash in the table represents missing values

Currency Futures

	Volume 2019	2018	Notional Value 2019	2018	Open interest 2019	2018
Americas						
B3 - Brasil Bolsa Balcão	441,198,777	342,642,806	8,119,069	88,362,381	5,646,987	5,730,984
Bolsa de Valores de Colombia	500,384	723,984	22,276	28,322	2,564	8,329
Bolsa Mexicana de Valores	5,095,447	6,265,311	52,588	62,606	533,976	336,466
CME Group	204,317,773	234,465,974	19,351,369	23,543,432	1,898,108	1,654,937
ICE Futures US	5,597,003	7,204,528	450,545	601,137	58,273	87,407
APAC						
BSE India Limited	385,903,652	455,441,592	381,788	369,268	-	-
Hong Kong Exchanges and Clearing	1,989,408	1,779,895	196,056	175,586	24,811	32,284
Korea Exchange	87,012,521	76,170,096	879,950	754,658	740,395	635,443
National Stock Exchange of India	617,569,582	603,051,797	620,336	602,716	2,612,129	2,037,413
Singapore Exchange	23,507,532	18,369,707	-	-	143,921	71,095
Taiwan Futures Exchange	961,762	624,532	27,238	18,346	3,419	6,563
Thailand Futures Exchange	674,060	685,847	-	-	39,014	18,627
EMEA						
Borsa Istanbul	71,230,276	99,545,803	69,562	91,077	911,606	1,262,205
Budapest Stock Exchange	5,963,561	5,533,192	6,380	6,057	618,289	592,018
Dubai Gold and Commodities Exchange	20,767,147	18,701,078	107,670	117,796	312,391	131,719
Eurex	-	-	-	-	20,308	902
Johannesburg Stock Exchange	44,237,768	41,972,958	47,386	40,406	6,033,839	1,408,969
Moscow Exchange	438,672,037	574,949,331	468,183	535,883	2,703,284	2,796,290
Grand Total	2,355,198,690	2,488,128,431	30,800,395	115,309,670	22,303,314	16,811,651

*the dash in the table represents missing values

Commodity Options

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas						
B3 - Brasil Bolsa Balcão	661,014	523,495	146	881,687	73,723	40,335
CME Group	145,913,322	150,929,182	6,971,773	7,409,580	9,192,815	10,516,351
ICE Futures US	12,681,619	12,878,902	315,127	349,412	1,123,750	1,150,005
APAC						
ASX Australian Securities Exchange	61,789	44,649	11,076	4,966	30,355	26,383
Bursa Malaysia Derivatives	53,100	66,066	-	-	24,850	11,200
Dalian Commodity Exchange	24,933,287	1,252,159	1,416	1,348	937,536	187,046
Multi Commodity Exchange of India	2,602,718	1,085,808	28,431	21,810	16,741	13,117
NZX Limited	64,537	77,121	231	232	10,625	11,596
Singapore Exchange	4,914,260	2,587,816	-	-	917,834	591,410
Taiwan Futures Exchange	44,076	45,385	384	343	635	576
Zhengzhou Commodity Exchange	10,601,385	4,593,395	88	31	274,880	100,712
EMEA						
Eurex	8,177,643	1,391,740	25,164	3,851	435,224	745,000
Euronext	829,521	138,273	9,568	11,761	159,646	208,688
ICE Futures Europe	36,204,302	37,864,180	47,249	51,899	3,898,058	4,274,879
Johannesburg Stock Exchange	304,220	351,110	337	285	43,126	71,176
London Metal Exchange	5,745,771	6,711,092	613,606	743,402	257,785	256,638
Moscow Exchange	8,756,076	7,781,922	5,776	5,084	217,254	306,740
Grand Total	262,548,640	228,322,295	8,030,374	9,485,691	17,614,837	18,511,852

*the dash in the table represents missing values

Commodity Futures

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas						
B3 - Brasil Bolsa Balcão	1,611,906	1,327,659	13,299	263,976,320	67,672	44,282
Bolsa de Valores de Colombia	319	713	3	3	220	292
CME Group	987,210,733	963,563,463	53,625,837	56,166,208	15,293,843	17,493,574
ICE Futures US	79,931,938	74,060,474	1,705,295	1,747,382	1,970,998	1,810,495
APAC						
ASX Australian Securities Exchange	484,745	505,829	29,193	21,812	94,987	89,760
Bursa Malaysia Derivatives	10,704,273	10,471,357	147,214	146,017	228,997	213,519
Dalian Commodity Exchange	1,330,650,938	969,405,778	9,897,380	7,589,203	8,749,415	4,369,783
Hong Kong Exchanges and Clearing	658,688	362,956	27,441	14,435	3,175	1,361
Indian Commodity Exchange	88,194,493	26,881,204	5,929	1,659	6,788	32,498
Indonesia Commodity and Derivatives Exchange	77,005	171,672	0	0	155	134
Multi Commodity Exchange of India	304,492,934	229,253,822	1,080,133	916,706	207,447	325,197
NZX Limited	294,391	268,530	1,307	940	32,870	58,980
Shanghai Futures Exchange	1,411,969,733	1,175,388,670	13,923,058	118,582	5,748,273	4,190,432
Singapore Exchange	17,876,782	13,401,896	-	-	762,601	689,189
Taiwan Futures Exchange	200,864	158,027	3,328	2,314	1,313	1,204
Thailand Futures Exchange	7,535,542	4,497,349	-	-	70,983	26,568
Zhengzhou Commodity Exchange	1,081,884,660	813,236,401	363,907	347,414	4,154,431	2,866,418
EMEA						
Borsa Istanbul	58,571,990	22,238,830	11,751	3,988	481,607	274,026
Budapest Stock Exchange	2	2	0	0	-	-
Dubai Gold and Commodities Exchange	596,749	622,110	7,648	6,531	1,613	1,839
Euronext	11,522,934	1,258,747	139,460	140,759	488,458	446,232
ICE Futures Europe	446,403,790	455,518,848	23,249,659	28,290,640	9,593,693	8,917,943
Johannesburg Stock Exchange	3,206,466	3,080,836	50,548	46,892	114,681	111,034
London Metal Exchange	170,515,165	178,104,967	17,326,357	19,227,721	2,169,638	1,997,911
LSE Group	1,066	1,475	44	100	200	310
Moscow Exchange	654,931,145	475,363,128	444,334	301,082	3,067,866	1,295,250
The Saint-Petersburg International Mercantile Exchange	9,374	40,973	244,896,797	199,071,120	363	186
Grand Total	6,669,538,625	5,419,185,716	366,949,919	578,137,828	53,312,287	45,258,417

*the dash in the table represents missing values

Other Options

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
EMEA						
Eurex	9,792,620	10,956,102	47,688	52,810	2,032,219	1,873,950
ICE Futures Europe	2,631,225	2,517,736	4,623	3,861	225,304	218,876
Grand Total	12,423,845	13,473,838	52,311	56,672	2,257,523	2,092,826

Other Futures

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
EMEA						
Eurex	30,005,182	22,785,442	120,960	127,254	4,271,293	1,446,797
ICE Futures Europe	7,930,484	8,463,989	219,529	165,786	816,579	993,717
Grand Total	37,935,666	31,249,431	340,489	293,040	5,087,872	2,440,514

12.2 Commodity derivatives by type of underlying commodity

Agriculture

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas	368,483,387	374,968,460	10,411,550	11,088,608	7,355,099	7,290,482
B3 - Brasil Bolsa Balcão	2,216,969	2,047,833	12,880	9,782	135,889	79,426
CME Group	366,266,418	372,920,627	10,398,670	11,078,826	7,219,210	7,211,056
APAC	1,120,034,064	877,976,223	3,807,404	5,847,319	8,472,254	4,439,787
ASX Australian Securities Exchange	84,291	87,650	409	9,352	9,507	628
Dalian Commodity Exchange	686,558,247	505,127,262	3,597,144	2,442,413	6,446,557	3,024,669
Multi Commodity Exchange of India	1,747,298	1,947,383	13,210	15,429	11,797	24,252
NZX Limited	358,928	336,732	1,538	70,233	43,495	7,394
Singapore Exchange	1,875,703	1,813,192	NA	NA	68,620	86,397
Zhengzhou Commodity Exchange	429,409,597	368,664,004	195,104	3,309,894	1,892,278	1,296,446
EMEA	22,239,202	479,115,921	1,161,070	28,048,991	896,049	12,686,627
Borsa Istanbul	6	835	0	NA	NA	NA
Budapest Stock Exchange	2	2	NA	0	NA	0
ICE Futures Europe	18,789,762	475,821,387	357,805	28,002,451	741,155	12,510,332
Johannesburg Stock Exchange	3,449,201	3,292,622	803,264	46,540	154,890	176,211
Moscow Exchange	231	1,075	0.07	0.28	4	84
Grand Total	1,510,756,653	1,732,060,604				

*the NA in the table represents missing values

Energy

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
Americas	598,495,882	645,456,777	31,203,167	37,717,842	14,283,185	18,288,413
B3 - Brasil Bolsa Balcão	56,221	39,284	565	525	5,606	3,870
CME Group	598,439,661	645,417,493	31,202,602	37,717,317	14,277,579	18,284,543
APAC	587,451,829	450,000,262	2,452,116	4,219,697	1,670,169	1,229,459
ASX Australian Securities Exchange	462,243	462,828	39,859	72,589	115,835	37,328
Dalian Commodity Exchange	78,554,734	115,537,123	1,854,592	2,692,596	273,772	304,820
Multi Commodity Exchange of India	215,356,526	120,996,599	486,435	333,762	78,129	93,323
Singapore Exchange	290,942	211,089	-	-	61,701	27,911
Taiwan Futures Exchange	28,562	27,118	381	397	170	356
Zhengzhou Commodity Exchange	292,758,822	212,765,505	70,848	1,120,353	1,140,562	765,721
EMEA	1,090,499,949	467,991,285	23,392,590	675,500	15,814,694	2,080,236
Borsa Istanbul	5,201	32,335	363	148	8,210	2,736
Dubai Gold and Commodities Exchange	96,380	118,736	1,426	5,844	404	902
ICE Futures Europe	463,818,330	17,561,633	22,939,103	340,087	12,750,596	682,198
Johannesburg Stock Exchange	37,010	64,631	2,971	358	2,298	1,777
LSE Group	1,066	1,475	44	100	200	310
Moscow Exchange	626,054,142	449,693,660	416,509	287,389	2,889,690	1,210,436
Nasdaq Nordic and Baltics	487,820	518,815	32,174	41,574	163,296	181,877
Grand Total	2,276,447,660	1,563,448,324				

*the dash in the table represents missing values

Non-precious metals

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
APAC						
Dalian Commodity Exchange	296,901,876	236,491,632	2,854,233	1,676,469	794,350	473,756
Hong Kong Exchanges and Clearing	85,515	11,250	1,090	104	2,038	1,125
Multi Commodity Exchange of India	49,223,300	78,679,184	255,423	368,243	39,527	118,148
Zhengzhou Commodity Exchange	20,478,779	40,410,987	6,177	13,300	142,554	97,874
Grand Total	366,689,470	355,593,053				

Precious Metals

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
APAC						
Hong Kong Exchanges and Clearing	573,173	351,706	31,413	15,563	1,137	236
Multi Commodity Exchange of India	40,768,528	28,716,464	353,496	221,083	94,735	102,591
National Stock Exchange of India	86,665	9,295	955	298	55	292
Taiwan Futures Exchange	216,378	176,294	3,332	2,260	1,778	1,424
Grand Total	41,644,744	29,253,759				

Other commodity derivatives

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
APAC						
Dalian Commodity Exchange	268,999,946	124,771,352	1,591,538	779,072	1,326,259	753,584
Zhengzhou Commodity Exchange	349,838,847	195,989,300	91,866	57,208	1,253,917	807,089
EMEA						
Nasdaq Nordic and Baltics	54,737	1,131,098	691	8,065	32,255	46,080
Grand Total	618,893,530	321,891,750				

Index Commodity Derivatives

	Volume		Notional Value		Open interest	
	2019	2018	2019	2018	2019	2018
EMEA						
Eurex	46,287	51,363	2,551	1,686	2,025	1,724
Grand Total	46,287	51,363				