

April 2018

# WFE IOMA 2017 derivatives report



## 2017 Derivatives Market Survey

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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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# 1 METHODOLOGY

The World Federation of Exchanges conducts an annual survey of the derivatives markets operated by its members, affiliates<sup>1</sup> and other exchanges that voluntarily submit data for this survey. Forty-eight exchanges responded to this year's survey (the full list can be found in Appendix 2). The survey report is compiled from questionnaire responses supplied by these exchanges as well as data collected from exchange websites.

The key derivatives markets statistics that have been collected through the survey and presented in this report are:

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

This year for the first time, in addition to aggregate commodity derivatives trading statistics, more granular data on commodity derivatives by underlying has also been collected. The categories by which contracts have been classified are as follows: Agriculture, Energy, Non-precious metals, Precious metals, Index commodity derivatives and Other.

The volume 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". Similarly, in instances where we did not have the figures for all exchanges, the totals have been reflected as "NA" for "not available".

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 value traded.

# 2 2017 IOMA SURVEY HIGHLIGHTS

2017 ended on a strong note for the global economy as well as stock markets worldwide. Benchmark market indices soared to record-high levels across many markets. There was a synchronised recovery in growth rates of GDP, low levels of inflation, low market volatility, a continuation of accommodative monetary policy in many regions and a recovery in commodity prices. This report focuses on trends in derivatives markets against this backdrop and examines how market participants have responded to shifts in the underlying market. Highlights from the report are:

- Volumes of derivatives contracts traded in 2017 were down slightly (0.2%) on 2016 with a total of 25.03 billion contracts traded.
- An increase in the volume traded in the Americas (up 5.8%) was offset by declines in the volumes traded in the Asia-Pacific and EMEA regions (down 3.5% and 5.3%) respectively.
- While volumes of equity and interest rate derivatives increased on 2016 – up 5.4% and 13.1% - volumes of currency, commodity and other derivatives traded were down 3.2%, 14.5% and 4.3% respectively on 2016.
- Over 3.9 billion interest rate derivative contracts were traded in 2017 - the largest number in the time period examined (since 2005).
- The fall in volumes of commodity derivatives traded was the first such year-on-year decline in volumes in the 13 year period under review and was driven by falls in volumes traded of agriculture and non-precious metals derivatives.
- As total volumes traded in 2017 were largely in line with 2016, the overall shares of volumes traded has shifted with equity and interest rate derivatives now making up 48% and 16% of the total respectively and commodity derivatives accounting for 24%.

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<sup>1</sup> 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.

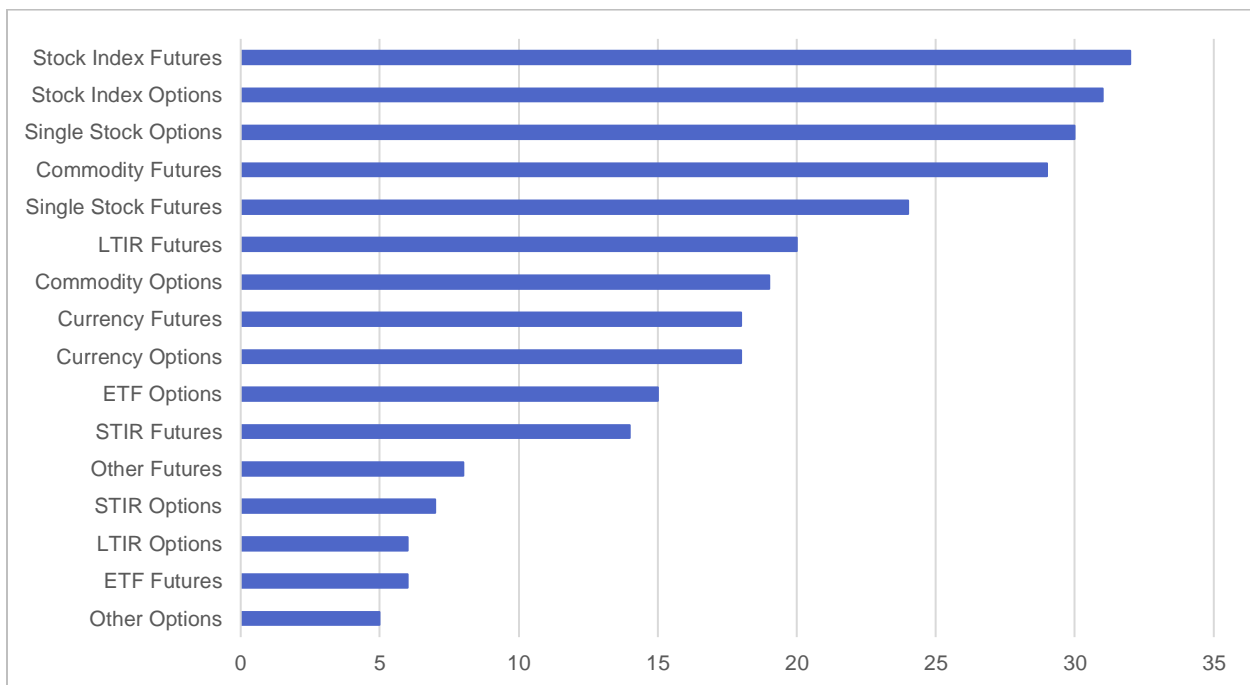
### 3 MARKET OVERVIEW

This report focuses on derivatives trading activity in 2017 and covers responses from forty-eight exchanges/exchange groups (some of whom represent more than one trading venue). The figures presented in this report cover a full set of indicators (number of contracts traded, notional value of traded contracts and open interest) and are presented across sixteen main product lines:

- Single Stock Options and Futures
- Stock Index Options and Futures
- Exchange Traded Funds Options and Futures<sup>2</sup>
- Short-Term Interest Rate (STIR) Options and Futures
- Long-Term Interest Rate (LTIR) Options and Futures
- Currency Options and Futures
- Commodity Options and Futures (including granular commodity data)
- Other Options and Futures

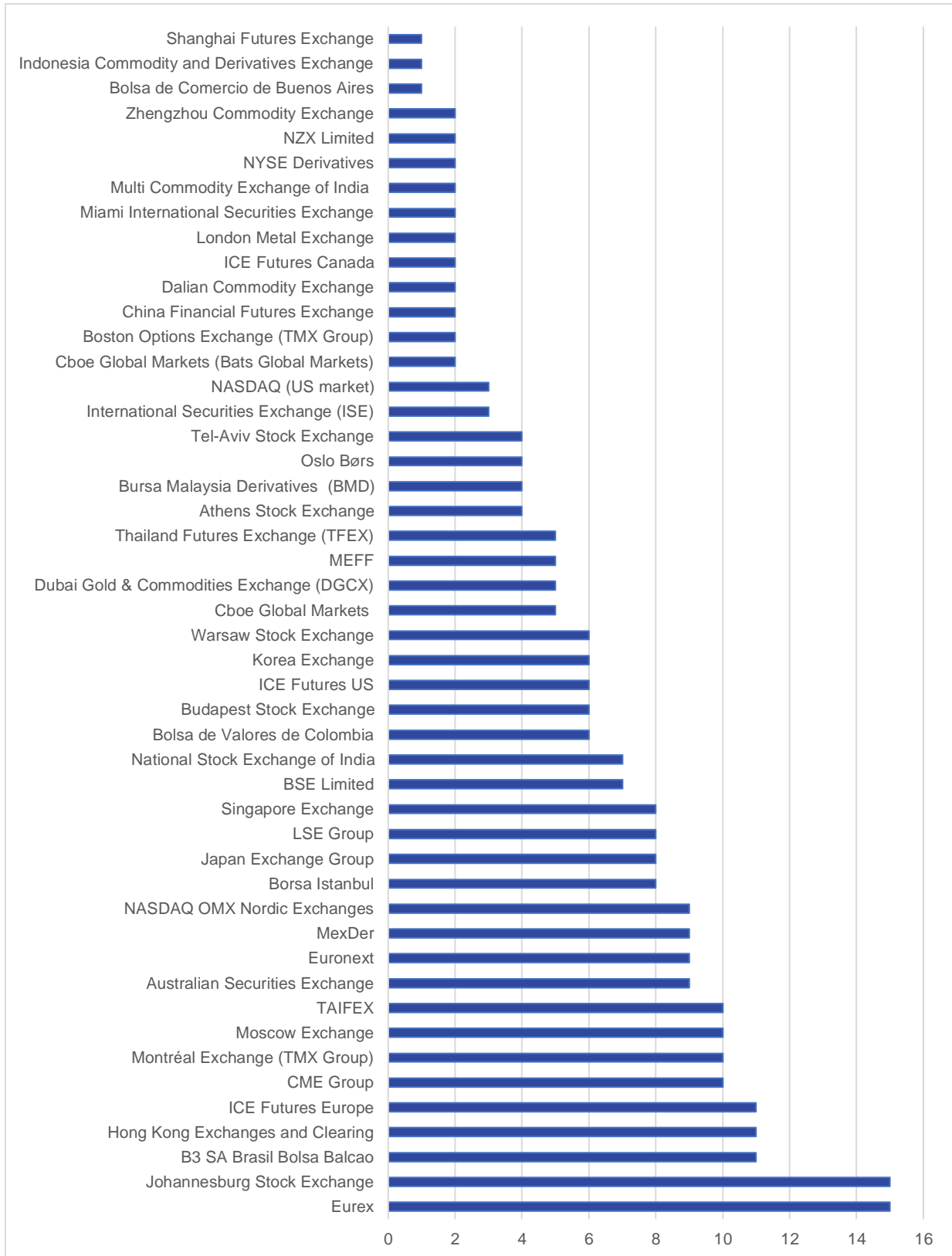
Some exchanges taking part in this survey provide a wide range of derivatives contracts, while others specialise in a single area of the market. The mean and median numbers of product lines offered by responding exchanges are both six. Eurex and the Johannesburg Stock Exchange, which offer 15 product types each, have the largest number of product lines. There are three exchanges with only one product line.

#### Number of trading venues by product line in 2017



<sup>2</sup> While we provide more granular information on ETF options and futures in the report, for purposes of overall reporting, we include these under equity derivatives. However, given the growth in this asset class, we will split these out in future reports.

**Number of product lines per exchange in 2017**



# 4 THE GLOBAL EXCHANGE TRADED DERIVATIVES MARKET

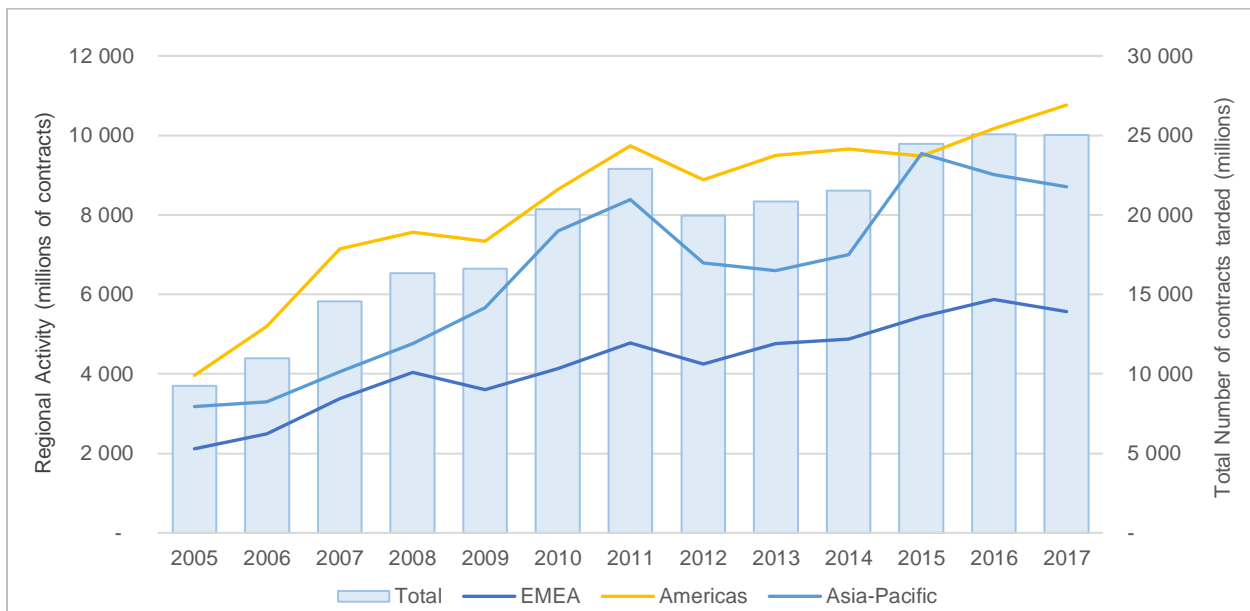
## 4.1 Volume activity

Amongst the respondent universe of forty-eight exchanges, there was a 0.2% decline in the volumes traded on 2016, with a total number of 25.03 billion derivatives contracts (10.5 billion options and 14.5 billion futures) traded in 2017. Total volumes traded as compared to 2005, are up 170.4%, representing an average annualised growth rate of 9.3% over the last twelve years.

Regionally, an increase in the volume traded in the Americas (up 5.8%) was offset by declines in the volumes traded in the Asia-Pacific and EMEA regions (down 3.5% and 5.3% respectively).

There were also variations in trends by asset class - while equity and interest rate derivatives volumes traded were up 5.4% and 13.1% respectively, currency, commodity and other derivatives volumes traded were down 3.2%, 14.5% and 4.3% respectively on 2016.

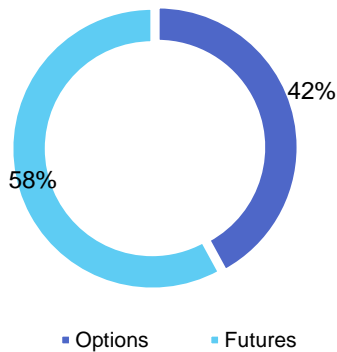
### Total volumes of exchange traded derivative contracts over time



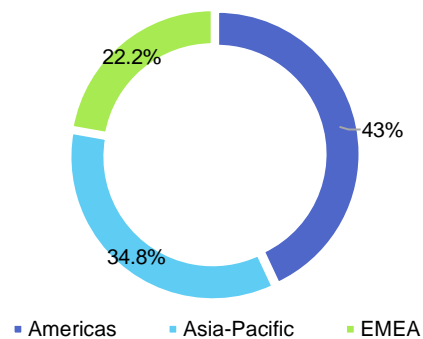
The overall growth in volumes traded in the Americas region (which accounts for 43% of total volumes traded) was driven by increases in volumes across all product lines except ETF options. Number of contracts traded in the Asia-Pacific region (where 34.8% of the total number of contracts were traded) were down largely due to the sharp fall in the volumes of commodity derivatives, which accounted for nearly 38% of the total volumes traded in the region. The EMEA region which accounted for the remaining 22.2% of total volumes recorded a decline in the number of contracts traded due falls in volumes across equity derivatives, currency derivatives and other derivatives.

Overall, options volumes were up 10.8% and futures volumes were down 6.9% on 2016, resulting in an increase in the share of options traded (of total volumes) from 38% in 2016 to 42% in 2017 and a decrease in the share of futures from 62% in 2016 to 58% in 2017.

**Breakdown by products in 2017**



**Breakdown by regions in 2017**



## 4.2 Asset breakdown

**Equity derivatives:** While equity derivatives remained the most actively traded exchange traded derivative product category, accounting for 48% of total volumes, this was the second consecutive year<sup>3</sup> in which they accounted for less than 50% of the total derivatives volume traded.

Overall equity derivatives volumes traded were up 5.4% on 2016, driven an increase in the volumes of single stock options and futures and stock index options - up 3.9%, 12% and 21.5% respectively. Stock index futures and ETF derivatives volumes traded were down 7.1% and 3.6% on 2016. While in the Americas and Asia-Pacific regions, where nearly 80% of equity derivatives volumes are traded, the numbers of contracts traded were up 2.4% and 23.9% respectively, there was a 10.9% decline in the volumes traded in the EMEA region.

**Interest rate derivatives:** Interest rate derivatives accounted for 16% of total derivatives contracts traded in 2017, with over 3.9 billion contracts traded in 2017. This was the largest number of interest rate derivatives contracts traded in the time period examined (since 2005). Volumes traded were up 13.1% on 2016 driven by increases in volumes of both STIR and LTIR options and futures. The Americas and EMEA regions, which accounted for nearly 94% of total interest rate derivatives volumes, saw an 11.7% and 18% increase in number of contracts on 2016.

**Currency derivatives:** Currency derivatives volumes traded (11% of the total derivatives volume traded) fell by 3.2% on 2016, largely due to a 19.9% drop in the volumes traded in the EMEA region, which accounts for 32% of total volumes. The Americas and Asia-Pacific regions on the other hand saw an uptick in volumes traded, up 18.8% and 3.8% respectively on 2016.

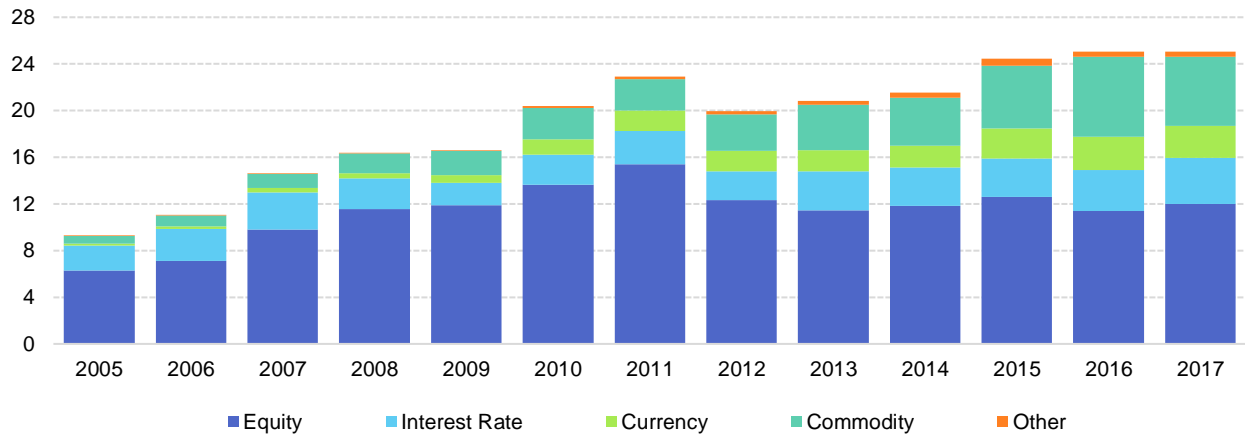
**Commodity derivatives:** For the first time in the period under review (since 2005) there was a year-on-year decline in commodity derivatives volumes traded, down 14.5% on 2016. This was due to a sharp fall in volumes traded in the Asia-Pacific region (down 25.3%) where 56% of the volumes were traded. The Americas and EMEA regions recorded increases in volumes traded (up 3.5% and 6% respectively). However, commodity derivatives remain the second most actively traded product type accounting for 24% of total exchange traded derivatives volumes.

**Other derivatives:** The “other derivatives” category comprises a wide range of products, including index volatility options and futures, REIT derivatives, dividend index derivatives, CFDs, and inflation indexed futures and options. Volumes in this category dropped by 4.3% on 2016, driven by the decline in volumes traded on Johannesburg Stock Exchange and Japan Exchange Group – down 36% and 6% respectively on 2016.

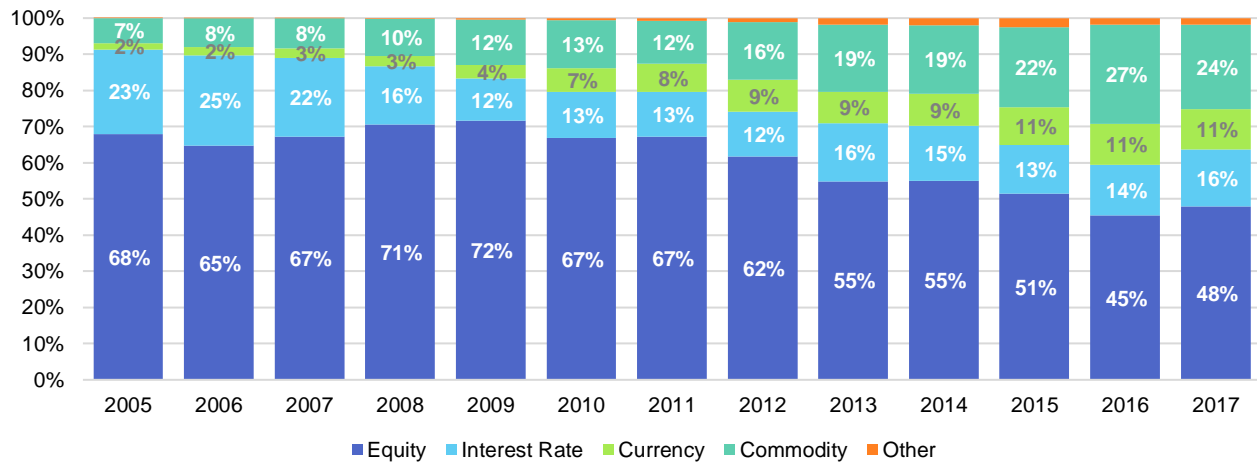
As total volumes traded in 2017 were largely in line with 2016, the overall shares of volumes traded has shifted with equity and interest rate derivatives now making up 48% and 16% of the total respectively (up from 45% and 14% in 2016) and commodity derivatives accounting for 24% of the total (down from 28% in 2016).

<sup>3</sup> WFE data goes back to 2005

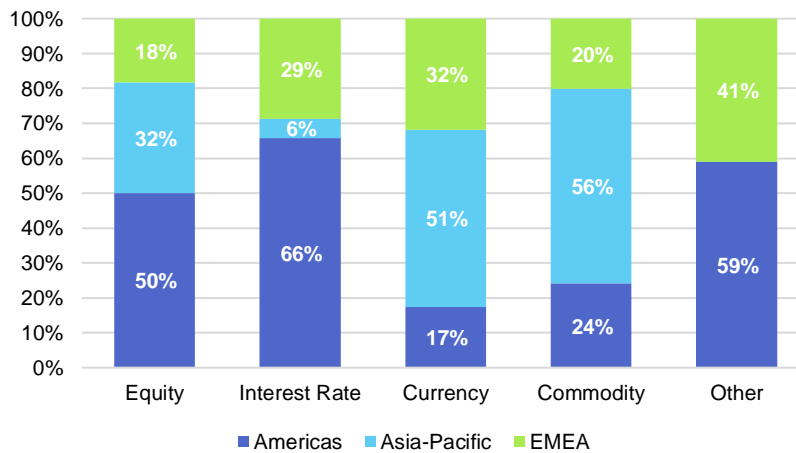
**Number of exchange traded derivatives contracts traded worldwide (billions of contracts) <sup>4</sup>**



**Product composition over time by number of contracts traded**



**Regional volume traded (% of total)**



<sup>4</sup> For purposes of these graphs, ETFs are included in Equity Derivatives



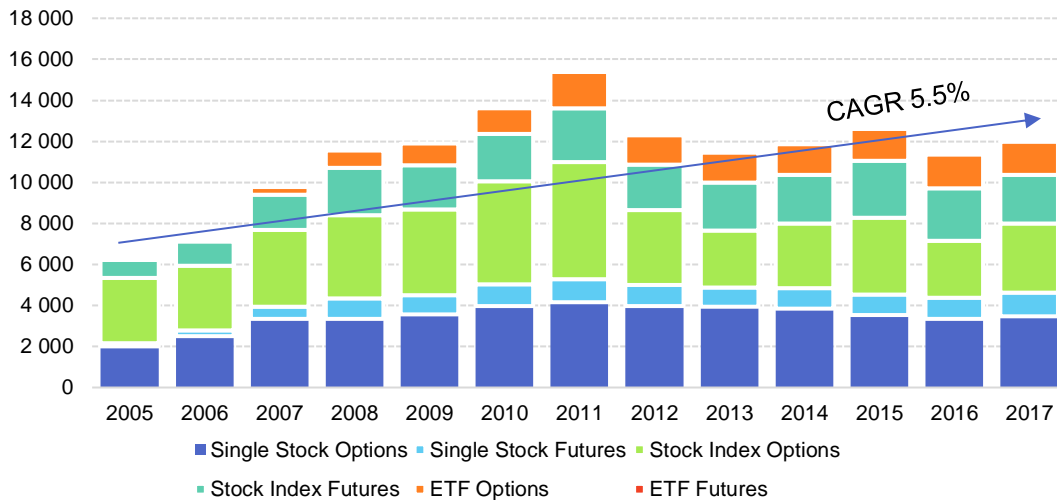
Number of exchange traded derivatives traded worldwide (millions of contracts)

	2016	2017	% change	% of total (asset class)	% of total (overall)
Single Stock Options	3 353	3 484	3.9%	29%	14%
Single Stock Futures	1 016	1 138	12.0%	9%	5%
Stock Index Options	2 771	3 368	21.5%	28%	13%
Stock Index Futures	2 565	2 383	-7.1%	20%	10%
ETF Options	1 671	1 611	-3.6%	13%	6%
ETF Futures	2.3	1.9	-18.2%	0%	0%
<b>Total Equity</b>	<b>11 379</b>	<b>11 987</b>	<b>5.4%</b>		<b>48%</b>
STIR Options	425	520	22.4%	13%	2%
STIR Futures	1 390	1 566	12.7%	39%	6%
LTIR Options	207	263	26.9%	7%	1%
LTIR Futures	1 481	1 612	8.9%	41%	6%
<b>Total Interest Rates</b>	<b>3 503</b>	<b>3 962</b>	<b>13.1%</b>		<b>16%</b>
Currency Options	650	814	25.2%	29%	3%
Currency Futures	2 205	1 949	-11.6%	71%	8%
<b>Total Currency</b>	<b>2 855</b>	<b>2 763</b>	<b>-3.2%</b>		<b>11%</b>
Commodity Options	256	261	2.0%	4%	1%
Commodity Futures	6 626	5 624	-15.1%	96%	22%
<b>Total Commodity</b>	<b>6 881</b>	<b>5 884</b>	<b>-14.5%</b>		<b>24%</b>
Other Options	158	197	25.2%	35%	1%
Other Futures	295	236	-20.0%	65%	1%
<b>Total 'Other'</b>	<b>452</b>	<b>433</b>	<b>-4.3%</b>		<b>2%</b>
<b>Grand Total</b>	<b>25 070</b>	<b>25 030</b>	<b>-0.2%</b>		

## 5 EQUITY DERIVATIVES

Overall equity derivatives contracts traded were up 5.4% in 2016 – driven by increases in volumes of single stock options and futures and stock index options. Equity derivatives volumes peaked in 2011 and have not reached that level since then. This downward trend was temporarily reversed in 2014 and 2015 though continued in 2016. Recovering from the decline in volumes traded in 2016 (-9.7% on 2015), the number of contracts traded rebounded to nearly 12 billion contracts traded in 2017.

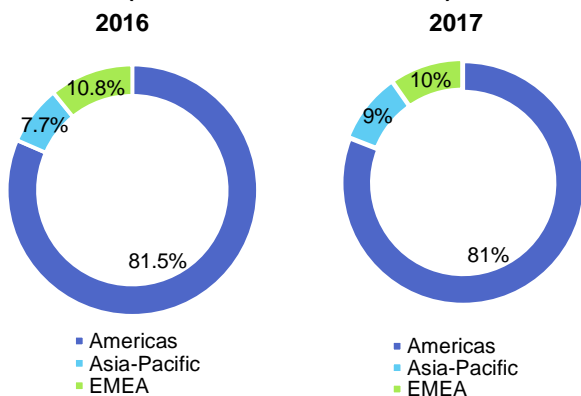
**Number of equity derivatives contracts traded worldwide (millions of contracts)**



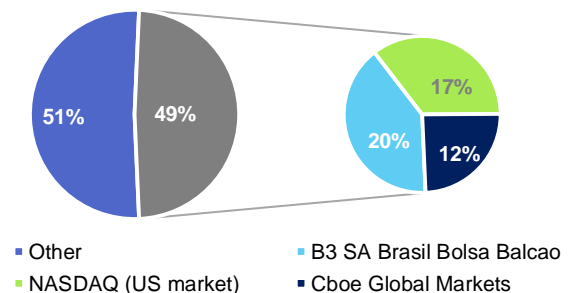
### 5.1 Single Stock Options

- There was a 3.9% increase in volume traded of single stock options in 2017 on 2016. With 3.48 billion contracts traded, single stock options were the second most traded derivatives product accounting for 14% of total volume.
- As in 2016, the Americas accounted for a bulk of the contracts traded (81%), followed by the Asia-Pacific and EMEA regions, which accounted for 9% and 10% respectively. While the Americas and the Asia-Pacific regions recorded an increase in the volume of contracts traded (up 3.2% and 26.6%) respectively, in the EMEA region the volume of contracts traded was down 6.7% on 2016.
- The market is somewhat dispersed with 49% of trading having occurred on three exchanges in the Americas region – B3 SA Brasil Bolsa Balcao (B3), Cboe Global Markets and NASDAQ (US market). The top 5 exchanges accounted for 66% of contracts traded.

**Single Stock Options - Regional activity (number of contracts traded)**



**Single Stock Options – Exchange activity (number of contracts traded)**



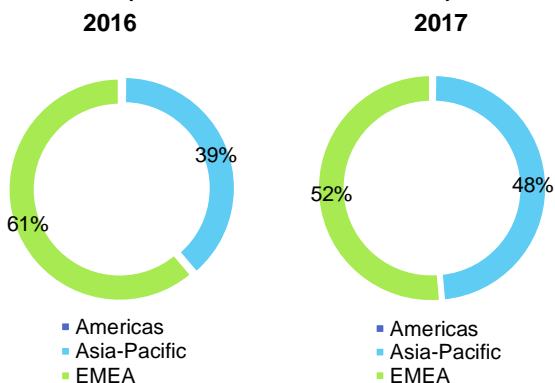
### Top 10 exchanges by number of single stock options contracts traded in 2017

		Volume		Notional Value		Open interest	
		2017	AGR	2017	AGR	2017	AGR
1	B3 SA Brasil Bolsa Balcao	681 905 063	-1%	435 877	32%	16 611 300	-4%
2	NASDAQ (US market)	598 660 102	17%	NA	NA	NA	NA
3	Cboe Global Markets	413 625 705	14%	NA	NA	190 867 000	7%
4	NYSE Derivatives	318 093 553	-14%	70 602	NA	NA	NA
5	International Securities Exchange	302 630 789	13%	NA	NA	NA	NA
6	Cboe Global Markets (Bats GM)	272 439 361	4%	NA	NA	NA	NA
7	Eurex	169 118 965	-9%	838 270	12%	42 206 211	11%
8	National Stock Exchange of India	116 497 267	31%	1 380 388	76%	236 635	56%
9	MIAX Options Exchange	116 016 897	-12%	NA	NA	NA	NA
10	Hong Kong Exchanges and Clearing	103 223 230	47%	302 584	86%	8 114 500	34%
	Others	392 506 892	-4%	NA	NA	NA	NA
	<b>Total</b>	<b>3 484 717 824</b>	<b>3.9%</b>				

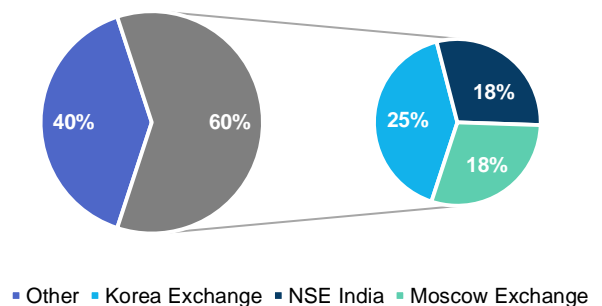
## 5.2 Single Stock Futures

- Single stock futures volumes traded was up 12% on 2016. This was a reversal of the year-on-year decline in volumes traded observed in 2016. However, this product line remained the second least traded equity product after ETF futures, with little over 1.1 billion contracts traded.
- The increase in volumes was almost entirely driven by the 40.1% increase in volume traded in the Asia-Pacific region. The Americas region, which accounted for a marginal share of the volumes (0.2%), saw volumes traded increase by 201%. The EMEA region on the other hand saw volume traded drop by 5.9% on 2016. These trends also resulted in a shift in the regional shares of volumes traded in 2017 when compared to 2016 – the Asia-Pacific region’s share in global volumes traded increased from 39% to 48%, while the EMEA region’s share fell from 61% to 52%.
- Trading activity (60% of volumes traded) was concentrated in three exchanges – the National Stock Exchange of India, the Korea Exchange and the Moscow Exchange. The increases in the Asia-Pacific region were explained by the uptick in volumes traded on the National Stock Exchange of India, the Korea Exchange, the Thailand Futures Exchange and TAIFEX (Taiwan Futures Exchange), while in the EMEA region, the Moscow Exchange and Johannesburg Stock Exchange among others recorded falls in volumes traded on 2016.

Single Stock Futures - Regional activity (number of contracts traded)



Single Stock Futures – Exchange activity (number of contracts traded)



**Top 10 exchanges by number of single stock futures contracts traded in 2017**

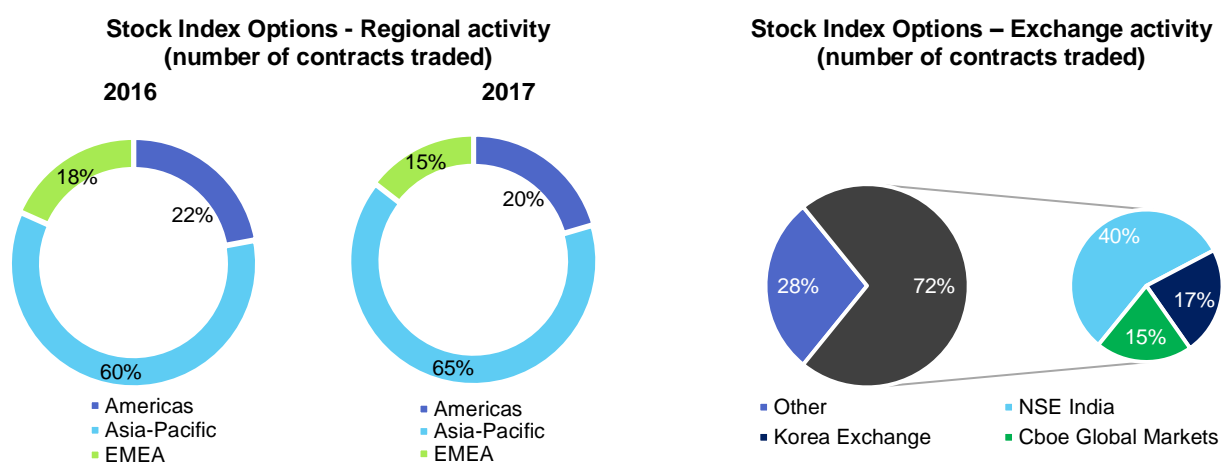
		Volume		Notional Value		Open interest	
		2017	AGR	2017	AGR	2017	AGR
<b>1</b>	Korea Exchange	280 064 162	63%	253 726	150%	2 157 120	86%
<b>2</b>	National Stock Exchange of India	201 923 887	17%	2 283 280	55%	1 704 820	55%
<b>3</b>	Moscow Exchange	201 803 966	-21%	58 721	1%	1 863 650	33%
<b>4</b>	Johannesburg Stock Exchange	139 060 767	-23%	17 345	13%	9 013 443	NA
<b>5</b>	Eurex	101 475 028	0%	444 051	47%	3 769 972	42%
<b>6</b>	ICE Futures Europe	82 062 501	97%	3 541 864	22%	995 812	-2%
<b>7</b>	Thailand Futures Exchange (TFEX)	47 480 762	40%	NA	NA	2 393 257	51%
<b>8</b>	TAIFEX	18 763 068	88%	112 748	124%	151 182	49%
<b>9</b>	Athens Stock Exchange	18 698 023	29%	1 884	58%	395 963	25%
<b>10</b>	Borsa Istanbul	18 440 819	158%	3 305	253%	853 204	95%
	Others	28 648 159	6%	NA	NA	NA	NA
	<b>Total</b>	<b>1 138 421 142</b>	<b>12%</b>				

**Top 10 single stock futures contracts traded in 2017**

	Contract Name	Size	Exchange	Volume		Notional Value		Open interest	
				2017	AGR	2017	AGR	2017	AGR
<b>1</b>	Futures on Sberbank ordinary shares	100 shares	Moscow Exchange	123 215 260	-29%	38 100	4%	584 274	1%
<b>2</b>	Futures on Gazprom ordinary shares	100 shares	Moscow Exchange	48 092 779	2%	10 770	-4%	527 078	20%
<b>3</b>	SK hynix	10 shares	Korea Exchange	41 521 210	177%	27 087	NA	294 986	665%
<b>4</b>	DRV Futures LG Display	10 shares	Korea Exchange	18 190 223	NA	5 457	NA	134 154	NA
<b>5</b>	MIRAE ASSET DAEWOO	10 shares	Korea Exchange	17 387 782	105%	1 611	NA	154 479	622%
<b>6</b>	DSINFRA	10 shares	Korea Exchange	13 294 536	-35%	1 110	NA	137 988	119%
<b>7</b>	DRV Futures LGELECTRONICS	10 shares	Korea Exchange	12 485 817	NA	9 554	NA	46 712	NA
<b>8</b>	Futures on VTB ordinary shares	100 000 shares	Moscow Exchange	11 580 763	2%	NA	NA	374 188	152%
<b>9</b>	SANTANDER	NA	MEFF	7 821 450	33%	5 337	107%	960 844	97%
<b>10</b>	Futures on Banco Santander SA	100 shares	Eurex	7 757 028	-63%	5 445	-38%	NA	NA

## 5.3 Stock Index Options

- Stock index options volumes traded increased by 21.5% on 2016. This product line accounted for 28% of the equity derivatives contracts traded in 2017.
- In the Asia-Pacific region, where 65% of the trading took place, volumes traded were up 32.6% on 2016. In the Americas region volumes traded were up 12.7%, while the EMEA region experienced a 3.8% decline.
- The market for this product was highly concentrated - three exchanges accounted for 72% of the total volume traded. The National Stock Exchange of India and the Korea Exchange together accounted for 57% of the total volume traded. Cboe Global Markets accounted for about 72% of the contracts traded in the Americas region and 15% of the global volumes traded.
- The top 5 contracts traded accounted for 73% of total volume traded in 2017. Trends in volumes traded of stock index options contracts were mixed. While options on Bank Nifty Index, S&P 500 and RTS Index options were up on 2016, the CNX Nifty Index, EURO STOXX 50 and Nikkei 225 options saw a decline in volumes on 2016.



### Top 10 exchanges by number of stock index options contracts traded in 2017

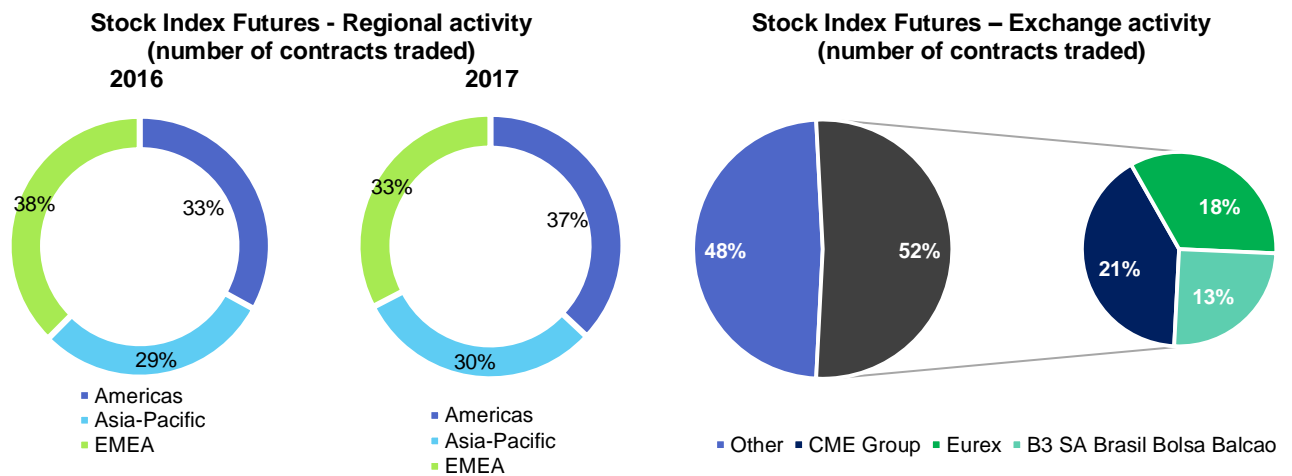
Exchange	Volume		Notional Value		Open interest	
	2017	AGR	2017	AGR	2017	AGR
1 National Stock Exchange of India	1 362 724 693	32%	18 124 076	88%	1 778 350	2%
2 Korea Exchange	554 765 334	55%	43 699 884	27%	2 757 470	115%
3 Cboe Global Markets	496 337 160	15%	NA	NA	25 896 900	31%
4 Eurex	372 741 102	-4%	15 743 394	18%	35 138 231	2%
5 TAIFEX	186 736 963	11%	3 224 524	43%	1 201 209	48%
6 CME Group	168 773 253	5%	27 345 300	24%	4 541 650	14%
7 Moscow Exchange	38 061 837	24%	77 081	36%	1 606 300	4%
8 Japan Exchange Group	33 347 953	-2%	NA	NA	2 163 030	10%
9 Tel-Aviv Stock Exchange	32 388 214	-14%	1 335 027	NA	281 821	NA
10 Hong Kong Exchanges and Clearing	31 935 369	5%	299 515	NA	24 649 600	NA
Others	89 798 705	-4%	NA	NA	NA	NA
<b>Total</b>	<b>3 367 610 583</b>	<b>22%</b>				

**Top 10 stock index options contracts traded in 2017**

	Contract Name	Size	Exchange	Volume		Notional Value		Open interest	
				2017	AGR	2017	AGR	2017	AGR
1	Bank Nifty Index	40 units	National Stock Exchange of India	800 401 601	150%	11 734 078	259%	280 027	38%
2	CNX Nifty Index	75 points	National Stock Exchange of India	562 315 794	-21%	6 389 924	0.3%	1 498 323	-93%
3	KOSPI 200	Price* KRW 250,000	Korea Exchange	540 103 609	60%	43 459 042	-37%	2 583 267	128%
4	S&P 500 Index	\$100 x S&P 500 Index	Cboe Global Markets	292 029 953	13%	71 520 366	32%	14 496 829	12%
5	EURO STOXX 50	EUR 10	Eurex	263 152 091	-8%	10 447 812	20%	29 317 341	4%
6	TAIEX options	Index Point* NTD 50	TAIFEX	186 410 859	11%	3 220 525	43%	1 191 910	48%
7	E-MINI S&P 500	\$50 x S&P 500 Index	CME Group	151 920 227	5%	18 566 516	23%	4 018 684	16%
8	RTS Index	1 point	Moscow Exchange	38 010 457	33%	77 060	38%	1 605 548	4%
9	OPT ON EURO STOXX Banks	EUR 50	Eurex	33 944 306	23%	266 882	NA	2 468 398	-12%
10	Nikkei 225 Options	Nikkei 225 x ¥1,000	Japan Exchange Group	33 088 569	-3%	NA	NA	2 086 075	9%

## 5.4 Stock Index Futures

- Stock index futures volumes fell by 7.1% in 2017 to 2.3 billion contracts traded.
- The decline in overall volumes traded was due to a drop in the volumes traded in the Asia-Pacific and EMEA regions (down 4% and 19.3% respectively). Only the Americas recorded an increase (4.2%) in the number of contracts traded.
- Global volumes traded were fairly evenly distributed with each region accounting for about a third of the total. The top 3 exchanges (in terms of volumes traded) – two from the Americas region and one from the EMEA region - accounted for 52% of total volume traded.
- The overall decline in volumes was driven by the sharp fall in volumes traded of some of the most actively traded stock index futures: the E-MINI S&P500 futures (-23%), the EURO STOXX 50 (-25%) and the Nikkei 225 mini Index futures (-6%).



### Top 10 exchanges by number of stock index futures contracts traded in 2017

Exchange	Volume		Notional Value		Open interest	
	2017	AGR	2017	AGR	2017	AGR
1 CME Group	504 155 607	-17%	60 326 200	-3%	4 693 160	33%
2 Eurex	417 178 059	-16%	22 900 987	8%	7 988 327	31%
3 B3 SA Brasil Bolsa Balcao	309 127 546	82%	1 636 367	96%	4 385 480	994%
4 Japan Exchange Group	278 761 006	-5%	11 786 573	18%	1 965 071	7%
5 Moscow Exchange	152 629 708	-35%	320 904	-25%	375 296	-39%
6 Singapore Exchange	141 164 086	-1%	NA	NA	1 756 116	18%
7 Hong Kong Exchanges and Clearing	75 546 018	-9%	60 800	3%	61 161 900	16%
8 Korea Exchange	66 332 720	50%	4 184 668	20%	536 400	264%
9 ICE Futures US	61 057 693	4%	5 734 978	NA	1 451 319	NA
10 TAIFEX	57 798 917	-5%	2 797 751	25%	164 222	17%
Others	319 669 483	-13%	NA	NA	NA	NA
<b>Total</b>	<b>2 383 420 843</b>	<b>-7.1%</b>				



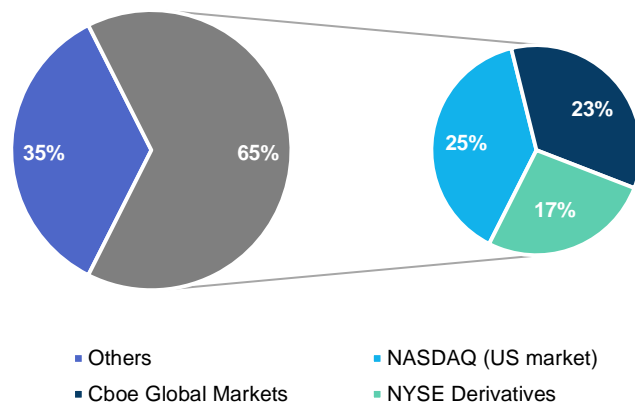
**Top 10 stock index futures contracts traded in 2017**

	Contract Name	Size	Exchange	Volume		Notional Value		Open interest	
				2017	AGR	2017	AGR	2017	AGR
1	E-MINI S&P500 futures	\$50 x S&P 500 Index	CME Group	365 601 616	-23%	44 647 489	-9%	3 019 522	8%
2	Bovespa Mini Index futures	Contract* index point value BRL (each point BRL0.2)	B3 SA Brasil Bolsa Balcao	290 827 570	93%	NA	NA	71 013	-12%
3	FUT ON EURO STOXX 50	EUR 10	Eurex	282 107 311	-25%	11 745 806	0.1%	3 454 398	0.3%
4	Nikkei 225 mini index futures	Nikkei 225 x ¥100	Japan Exchange Group	219 518 050	-6%	3 951 087	17%	683 633	18%
5	RTS Index Futures contract	1 point	Moscow Exchange	134 467 991	-35%	297 983	-27%	346 932	-38%
6	E-MINI NASDAQ 100	\$20 x NASDAQ-100 Index	CME Group	69 559 095	6%	8 088 494	36%	280 298	24%
7	FTSE China A50 Index Futures	US\$ 1 x SGX FTSE China A50 Index Futures Price	Singapore Exchange	67 407 030	-4%	NA	NA	699 621	18%
8	FUT ON EURO STOXX BANKS	EUR 50	Eurex	55 560 883	30%	429 387	NA	1 448 909	94%
9	KOSPI 200 Futures	KOSPI 200 Futures price*KRW 250,000	Korea Exchange	45 874 367	35%	NA	-100%	321 899	119%
10	NIFTY 50 Index futures	75 points	National Stock Exchange of India	34 779 564	-50%	392 899	-9%	319 248	-45%

## 5.5 ETF Derivatives

- ETF derivatives volumes traded fell by 3.6% on 2016. ETF options accounted for more than 99% of the ETF derivatives traded. ETF futures which constituted the remaining marginal share of ETF derivatives recorded about 1.9 million contracts traded in 2017.
- ETF options are primarily traded in the Americas region. The nine largest exchanges by volumes traded were all from the Americas region and accounted for over 99% of global volumes traded. Three American exchanges (NYSE, Nasdaq and Cboe Global Markets) accounted for 65% of the global volumes traded.

**ETF Derivatives – Exchange activity  
(number of contracts traded)**



### Top 10 exchanges by number of ETF options and futures contracts traded in 2017

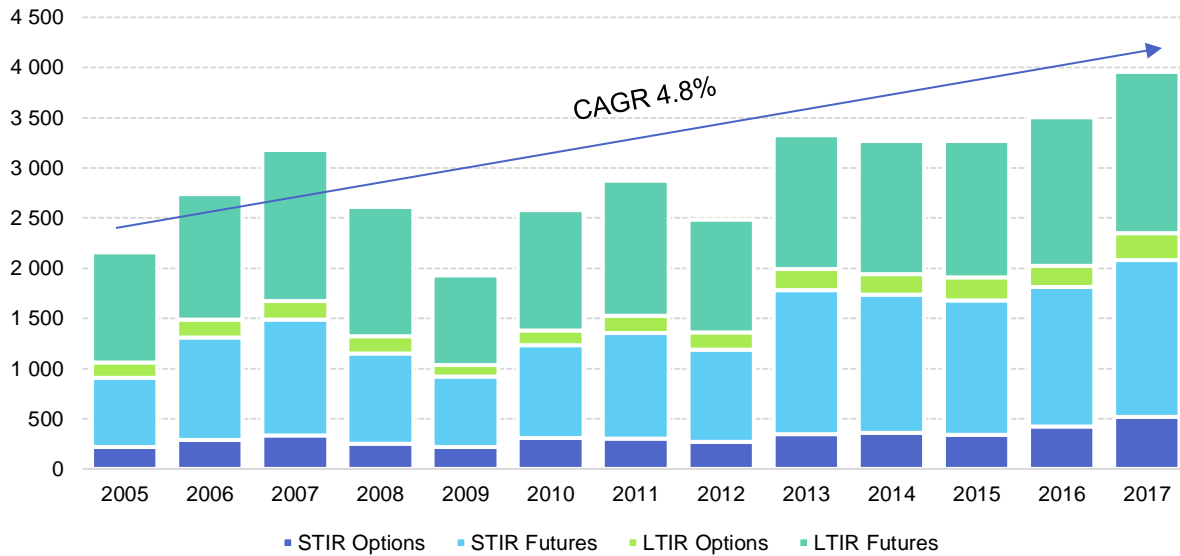
Exchange	Volume		Notional Value		Open interest	
	2017	AGR	2017	AGR	2017	AGR
1 NASDAQ (US market)	405 040 187	6%	NA	NA	NA	NA
2 Cboe Global Markets	363 702 371	11%	NA	NA	94 154 800	4%
3 NYSE Derivatives	277 938 488	-12%	40 179	-18%	NA	NA
4 International Securities Exchange	227 656 519	-20%	NA	NA	NA	NA
5 Cboe Global Markets (Bats GM)	190 099 210	2%	NA	NA	NA	NA
6 MIAX Options Exchange	75 136 976	-35%	NA	NA	NA	NA
7 B3 SA Brasil Bolsa Balcao	31 666 541	642%	NA	NA	204 685	455%
8 Boston Options Exchange	25 553 513	-38%	NA	NA	NA	NA
9 Montréal Exchange	11 417 417	-3%	20 978	49%	1 467 245	-16%
10 Hong Kong Exchanges and Clearing	2 626 530	-26%	24 353	-25%	192 443	0.4%
Others	2 486 636	-17%	NA	NA	NA	NA
<b>Total</b>	<b>1 613 324 388</b>	<b>-3.6%</b>				

## 6 INTEREST RATE DERIVATIVES

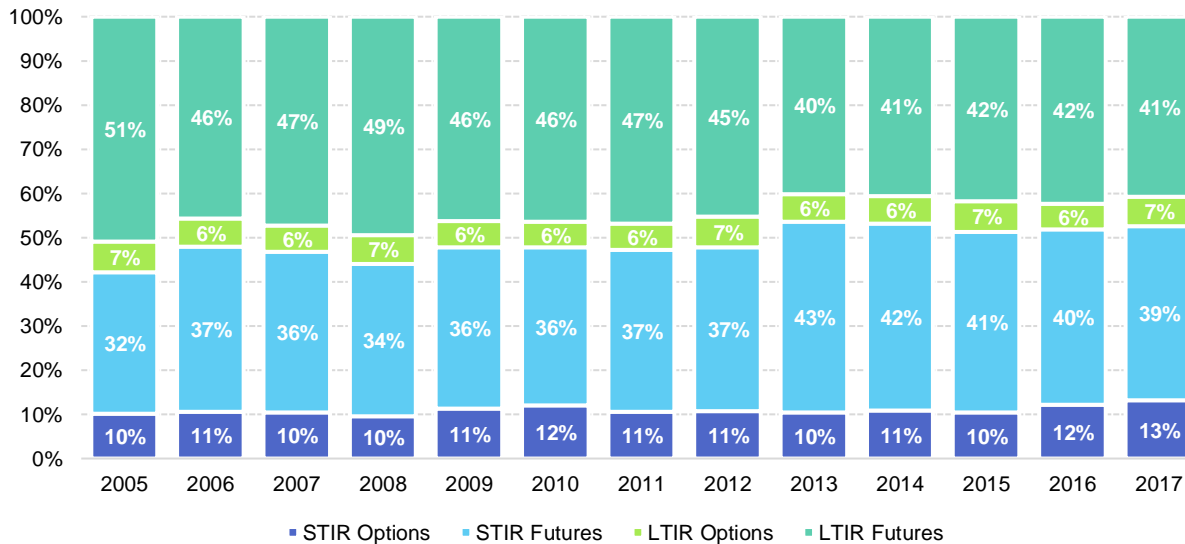
Volumes traded of interest rate derivatives contracts were up 13.1% on 2016 taking the total number of contracts traded to over 3.9 billion contracts in 2017. This was the largest number of interest rate derivatives contracts traded in the time period examined. All regions recorded an increase in volumes traded when compared to 2016. The Americas region, where over 66% of the total volumes are traded, saw volumes increase by 11.7% while in the Asia-Pacific and EMEA regions, volumes were up by 5.5% and 18% respectively.

In 2017, LTIR futures and STIR futures together accounted for over 80% of total volume of interest rate derivatives traded.

**Number of interest rate exchange traded derivatives traded worldwide (millions of contracts)**



**Product composition over time by number of contracts traded**

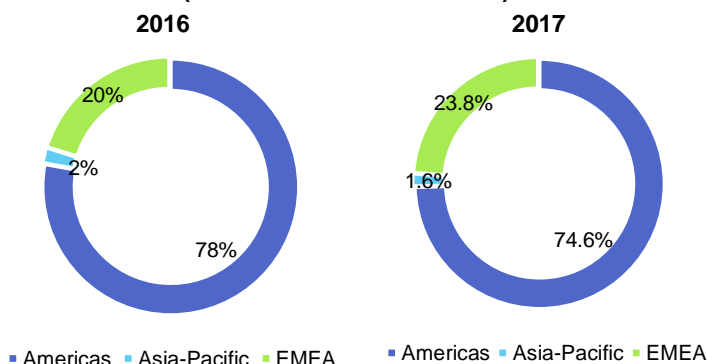


The interest rate derivatives market remains highly concentrated, with the top four exchanges - CME Group, Eurex, ICE Futures Europe and B3 - representing 92% of total interest rate contracts traded in 2017. CME Group continues to account for the highest share of volume traded (55%), followed by Eurex (15%) and ICE Futures Europe (12%).

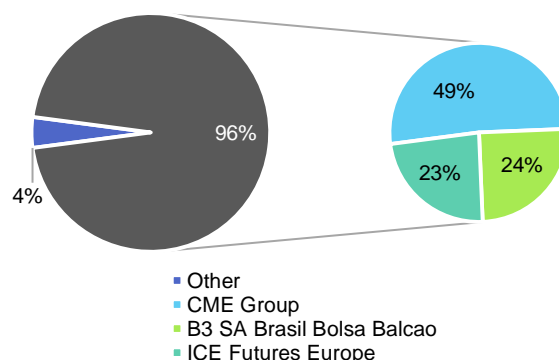
## 6.1 STIR Options and Futures

- STIR derivatives volumes traded increased by 15% to exceed 2 billion contracts traded in 2017. STIR options and futures which accounted for 25% and 75% of total volumes traded respectively, saw volumes traded increase by 22.4% and 12.7% respectively.
- The Americas region, where 74.6% of the volumes were traded, recorded a 10.2% increase in volumes traded, while the EMEA region experienced a significant 35.4% increase in the number of contracts traded. Only the Asia-Pacific region saw a decline in volume traded on 2016 (down 4.5%).
- Ninety-six percent of the trading activity took place on three exchanges - CME Group, ICE Futures Europe and B3 SA Brasil Bolsa Balcao exchange - reflecting the highly concentrated market for this product.
- Eight out of top ten contracts (by volumes) saw increases in volumes traded on 2016. In the Americas region some of the fastest growing and most actively traded contracts were the CME Group's Eurodollar futures and options contracts and B3's Interbank deposit futures. In the EMEA region, ICE Futures Europe's Three Month Sterling futures and the Three Month Euribor futures were the most actively traded contracts. The Australian Securities Exchange's 90 Days Bank Accepted Bills futures were the most traded contract in the Asia-Pacific region.

**STIR Options and Futures - Regional activity  
(number of contracts traded)**



**STIR Options and Futures – Exchange activity  
(number of contracts traded)**



### Top 10 exchanges by number of short-term interest rate derivatives contracts traded in 2017

	Volume		Notional Value		Open interest	
	2017	AGR	2017	AGR	2017	AGR
CME Group	1 031 339 496	3%	1 223 336 577	8%	49 706 934	8%
B3 SA Brasil Bolsa Balcao	494 700 355	28%	12 236 545	14%	56 071 696	-79%
ICE Futures Europe	472 904 970	32%	436 688 564	50%	18 430 580	38%
Australian Securities Exchange	33 785 830	-4%	29 468 637	-5%	1 273 237	-4%
Montréal Exchange (TMX Group)	29 763 406	10%	23 714 690	18%	855 454	-28%
Nasdaq OMX Nordic Exchanges	11 283 566	41%	13 518 174	61%	2 101 216	52%
Johannesburg Stock Exchange	10 331 717	25671%	92 708	136825%	NA	NA
LSE Group	1 734 491	635%	1 460 298	755%	162 372	314%
Eurex	76 822	-57%	23 037	-51%	33 766	-100%
MexDer	25 938	-95%	131	-95%	86 004	-85%
Others	45 854	36.8%	NA	NA	NA	NA
<b>Total</b>	<b>2 085 992 445</b>	<b>15.0%</b>				

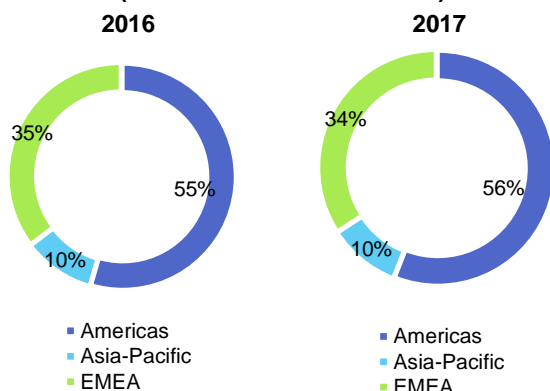
**Top 10 STIR contracts traded in 2017**

	Contract Name	Size	Exchange	Volume		Notional Value		Open interest	
				2017	AGR	2017	AGR	2017	AGR
1	Eurodollar futures	NA	CME Group	639 847 185	-2%	639 847 185	-2%	12 678 251	14%
2	Interbank Deposits (ID) futures	Unit price (PU)*BRL1.00	B3 SA Brasil Bolsa Balcao	354 870 457	17%	9 144 956	22%	24 746 207	-88%
3	Three Month Sterling Future	£500 000	ICE Futures Europe	198 843 763	29%	136 269 732	39%	3 157 872	40%
4	Three Month Euro (Euribor) Future	€1 000 000	ICE Futures Europe	197 286 277	46%	236 357 041	66%	4 243 101	39%
5	Eurodollar Mid-Curve options	NA	CME Group	190 004 215	35%	189 889 492	35%	13 694 983	-4%
6	Eurodollar options	NA	CME Group	153 426 834	-9%	153 425 834	-9%	21 832 135	11%
7	Options on Avg One-Day Interbank Deposit Rate	Value of index*BRL1.00.	B3 SA Brasil Bolsa Balcao	97 997 077	95%	1 795	53%	24 902 981	286%
8	ID x US Dollar FRA Futures	Unit price*point value in USD	B3 SA Brasil Bolsa Balcao	61 401 079	5%	NA	NA	NA	NA
9	Fed Fund futures	\$5 000 000	CME Group	47 978 260	44%	239 891 300	44%	1 489 243	53%
10	90 Day Bank Accepted Bill Futures	\$1 000 000	Australian Securities Exchange	30 326 252	1%	23 675 201	10%	947 257	-8%

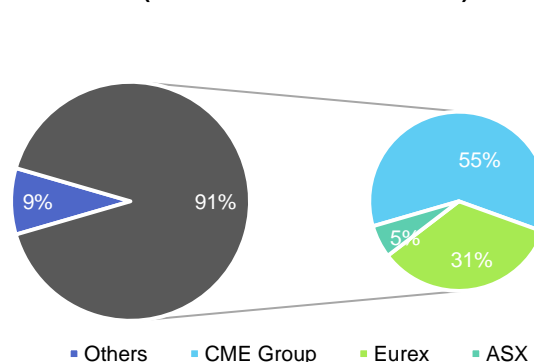
## 6.2 LTIR Options and Futures

- The number of LTIR contracts traded in 2017 exceeded 1.87 billion contracts, up 11.1% on 2016. LTIR futures accounted for a bulk (86%) of the contracts traded, with over 1.6 billion contracts traded.
- The overall increases in volumes was driven by increases across all three regions. In the Americas, where 56% of the contracts were traded, volumes were up 14.1%, while in the Asia-Pacific and EMEA regions volumes traded increased by 7.6% and 7.5% respectively.
- The market was fairly concentrated with over half of all volumes traded on a single exchange (CME Group). Three exchanges (one from each region) were responsible for over 90% of the contracts traded and contributed to the increase in volumes of contracts traded.
- The top 5 contracts accounted for nearly 57% of the total volume traded. The contracts with the highest volumes traded were the 5-year and 10-year Treasury Note futures in the Americas, the Euro Bund and Long Gilt futures in the EMEA region and Australian Securities Exchange's (ASX) 3 year Treasury bond futures in the Asia-Pacific region.

**LTIR Options and Futures - Regional activity  
(number of contracts traded)**



**LTIR Options and Futures – Exchange activity  
(number of contracts traded)**



### Top 10 exchanges by number of long-term interest rate options and futures contracts traded in 2017

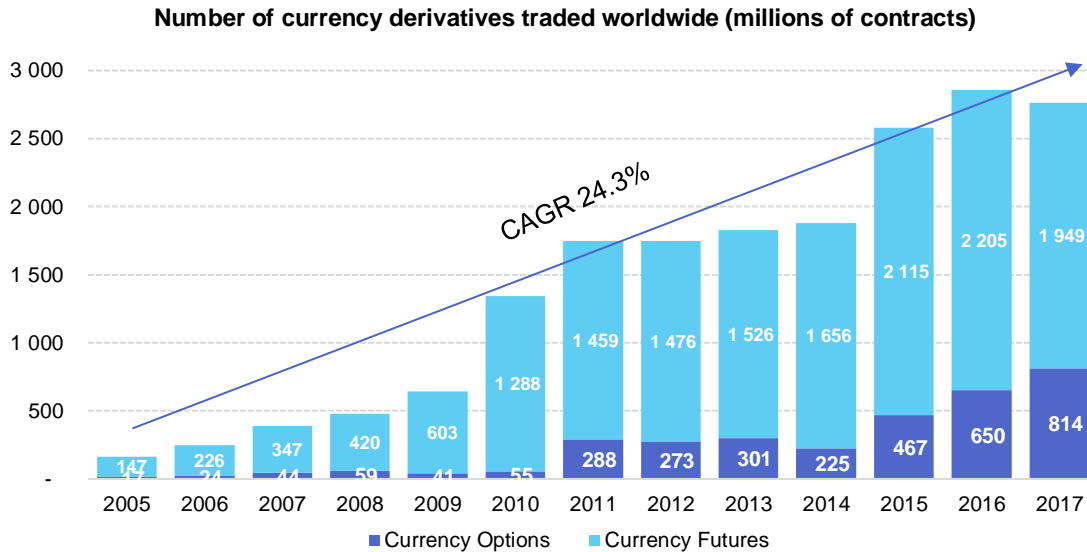
Exchange	Volume		Notional Value		Open interest	
	2017	AGR	2017	AGR	2017	AGR
1 CME Group	1 024 185 059	14%	93 373 051	12.8%	14 549 803	-85%
2 Eurex	582 058 894	11%	99 592 480	24%	8 326 415	-96%
3 Australian Securities Exchange	100 873 246	7%	7 875 006	17%	2 046 318	14%
4 ICE Futures Europe	51 568 953	-4%	7 050 464	2%	780 152	26%
5 Korea Exchange	34 287 487	-12%	3 679 020	-3%	306 124	15%
6 Montréal Exchange (TMX Group)	24 316 431	15%	1 937 468	-87%	528 715	20%
7 National Stock Exchange of India	16 325 501	7%	52 210	13%	83 651	NA
8 China Financial Futures Exchange	14 770 315	65%	2 161 422	58%	107 403	34%
9 BSE Limited	9 338 072	51%	29 776	60%	5 901	208%
10 Japan Exchange Group	9 053 884	8%	NA	NA	117 309	29%
Others	8 733 655	-53%	NA	NA	NA	NA
<b>Total</b>	<b>1 875 511 497</b>	<b>11.1%</b>				

**Top 10 LTIR contracts traded in 2017**

	Contract Name	Size	Exchange	Volume		Notional Value		Open interest	
				2017	AGR	2017	AGR	2017	AGR
1	10-YR NOTE futures	\$100 000	CME Group	375 338 442	7%	37 533 844	7%	3 223 938	4%
2	5-YR NOTE futures	\$100 000	CME Group	226 441 088	12%	22 644 109	12%	3 103 029	5%
3	FUT 8 1/2-10 1/2 Y.GOV.BOND 6%	\$100 000	Eurex	195 580 025	5%	38 102 479	18%	1 752 160	11%
4	FUT 4 1/2-5 1/2Y.GOV.BONDS 6%	€100 000	Eurex	135 394 434	4%	21 458 405	18%	1 514 707	21%
5	10-YR NOTE options	\$100 000	CME Group	128 546 313	30%	12 854 631	30%	2 342 971	6%
6	2-YR NOTE futures	\$200 000	CME Group	97 249 457	19%	19 449 891	19%	1 784 427	59%
7	FUT 1 3/4-2 1/4 Y.GOV.BONDS 6%	\$100 000	Eurex	86 000 890	17%	11 561 636	33%	1 505 220	20%
8	30-YR BOND futures	\$100 000	CME Group	73 337 240	4%	7 333 724	4%	758 846	26%
9	YT FUTURES (3 YEAR BOND)	\$100 000	Australian Securities Exchange	55 928 705	8%	4 366 261	17%	996 712	12%
10	Long Gilt Future	\$100 000	ICE Futures Europe	51 162 862	-4%	7 003 931	3%	752 130	NA

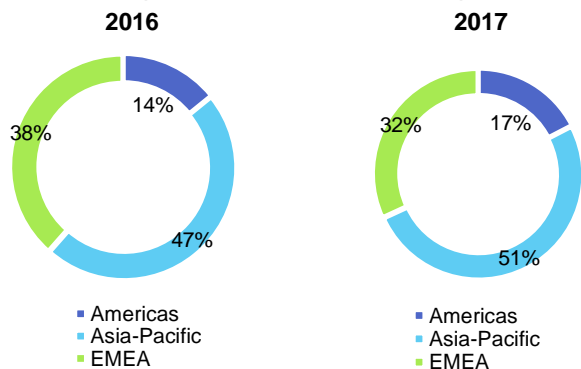
## 7 CURRENCY DERIVATIVES

- Overall, currency derivatives volumes traded fell by 3.2% on 2016. This was due to the 11.6% decline in volumes of currency futures traded. Currency options, which account for about 30% of currency derivatives traded, recorded a 25.2% increase in volumes traded on 2016.

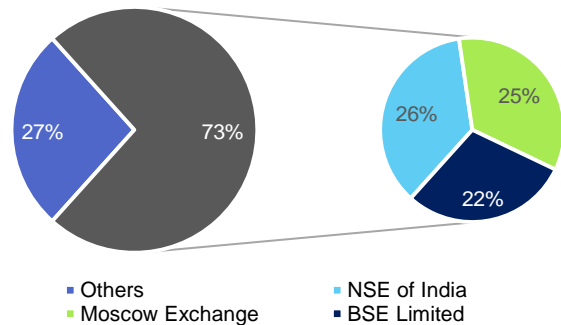


- The decline in volumes traded was almost entirely driven by the EMEA region which recorded a 19.9% drop in volumes traded. The Moscow Exchange which accounted for nearly 80% of the volumes traded in the region saw a 28% decline in the number of contracts traded. The Americas and Asia-Pacific regions on the other hand saw an uptick in volumes traded, of 18.8% and 3.8% respectively on 2016. B3 SA Brasil Bolsa Balcao and CME Group which together accounted for about 96% of volume traded in the Americas, drove up the regional volumes. BSE Ltd was a key driver of the growth in the Asia-Pacific region with a 13% growth in volume traded.
- These volume traded figures must be interpreted taking into account the large variation in contract sizes across markets. The sizes of the contracts that have been ranked among the top 10 in terms of volumes traded range from 100 RUB (~17.3 USD) to 125 000 EUR (~149 755 USD). A large share (nearly 80%) of contracts were those that tracked local currency dollar exchange rates.

**Currency Options and Futures - Regional activity (number of contracts traded)**



**Currency Options and Futures – Exchange activity (number of contracts traded)**





**Top 10 exchanges by number of currency options and futures contracts traded in 2017**

	Exchange	Volume		Notional Value		Open interest	
		2017	AGR	2017	AGR	2016	AGR
1	National Stock Exchange of India	729 855 486	-2%	757 663	0%	3 805 136	-13%
2	Moscow Exchange	697 169 026	-28%	722 908	-34%	6 642 796	37%
3	BSE Limited	599 048 109	13%	611 069	22%	1 258 826	6%
4	B3 SA Brasil Bolsa Balcao	231 637 860	35%	6 668 792	33%	5 008 147	1%
5	CME Group	231 063 683	7%	23 139 849	11%	2 410 458	15%
6	Borsa Istanbul	78 270 323	61%	77 316	78%	818 766	-32%
7	Johannesburg Stock Exchange	68 368 701	41%	53 666	39%	6 592 692	183%
8	Korea Exchange	62 203 981	-5%	660 891	5%	850 048	3%
9	Dubai Gold & Commodities Exchange	15 206 275	-18%	99 817	-9%	228 886	-7%
10	Tel-Aviv Stock Exchange	13 514 802	3%	141 175	7%	547 393	23.1%
	Others	36 907 811	7%	NA	NA	NA	NA
	<b>Total</b>	<b>2 763 246 057</b>	<b>-3.2%</b>				

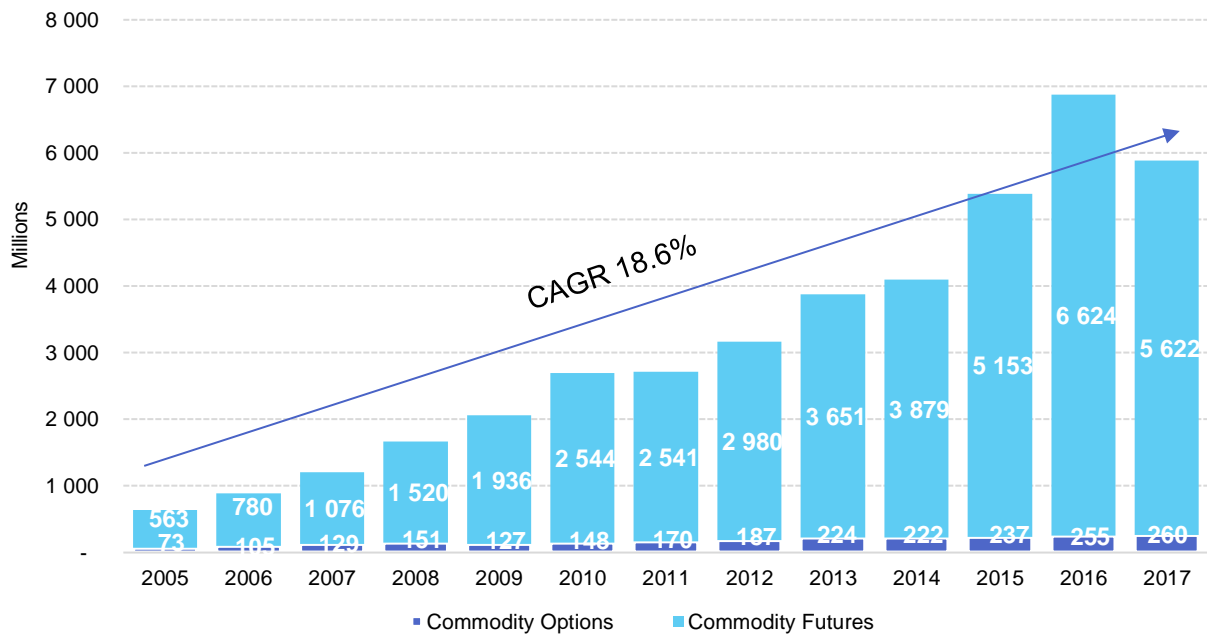
**Top 10 currency contracts traded in 2017**

	Contract Name	Size	Exchange	Volume		Notional Value		Open interest	
				2017	AGR	2017	AGR	2017	AGR
1	Futures on USD/RUB	1000 RUB	Moscow Exchange	590 260 376	-32%	603 759	-38%	4 405 946	68%
2	USDINR options	1000 USD	National Stock Exchange of India	371 600 526	6%	382 861	9%	1 779 471	-26%
3	USD INR options	1000 USD	BSE Limited	334 052 119	75%	339 314	78%	283 114	-54%
4	USDINR futures	1000 USD	National Stock Exchange of India	312 477 915	-11%	320 106	-8%	1 798 285	-3%
5	USD INR futures	1000 USD	BSE Limited	262 138 344	-10%	268 343	-7%	946 539	65%
6	Mini U.S. Dollar futures	10 000 USD	B3 SA Brasil Bolsa Balcao	146 458 100	59%	NA	NA	70 503	124%
7	U.S. Dollar futures	50 000 USD	B3 SA Brasil Bolsa Balcao	74 087 470	4%	NA	NA	1 025 346	7%
8	TRY/USD futures	1 000 USD	Borsa İstanbul	65 408 761	74%	64 300	93%	501 871	17%
9	USD futures	1 000 USD	Korea Exchange	60 298 280	6%	640 277	3%	739 125	-5%
10	EURO FX futures	125 000 EUR	CME Group	56 455 834	14%	8 021 230	17%	530 121	30%

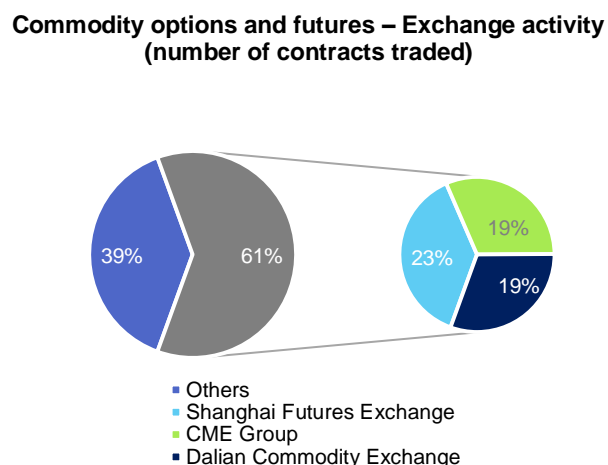
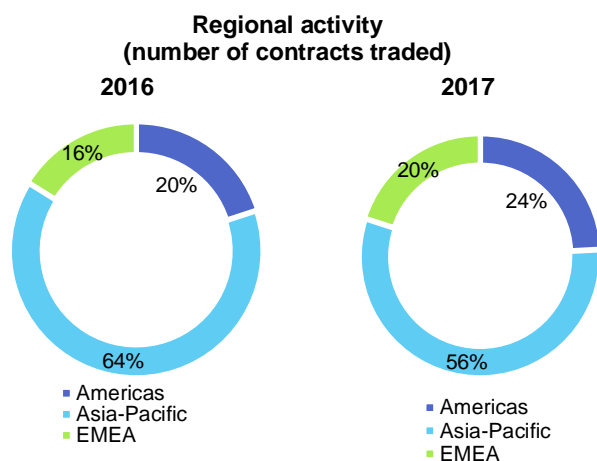
## 8 COMMODITY DERIVATIVES

- Volumes traded of commodity derivatives fell by 14.5% on 2016.
- This was the first year-on-year decline in the commodity derivatives volumes traded, in the period examined. Volumes traded in 2017 fell by nearly one billion contracts to 5.8 billion contracts. However, commodity derivatives (options and futures) remain among the most actively traded product lines.

**Number of commodity options and futures traded worldwide (millions of contracts)**



- The decrease in volumes traded was entirely due to the 25.3% decline in the Asia-Pacific region which accounted for over 56% of the global trade volumes. The Americas and EMEA regions recorded increases in volumes traded (up 3.5% and 6% respectively on 2016).
  - Three Chinese exchanges (Dalian Commodity Exchange, Shanghai Futures Exchange and Zhengzhou Commodity Exchange) which accounted for over 90% of the volumes traded in the Asia-Pacific region, all recorded declines in volumes traded on 2016.
  - The trading in the Americas region was dominated by CME Group and ICE Futures US which accounted for 99% of the regional volumes. While volumes traded on CME Group were up 6%, ICE Futures US recorded a 6% decline in number of contracts traded compared to 2016.
  - Increases in the EMEA region are explained by the increases in volumes traded on the Moscow Exchange, ICE Futures Europe and the London Metal Exchange, among others.
- As observed in 2016, trading of these products remains concentrated on three exchanges – the Dalian Commodity Exchange, the Shanghai Futures Exchange and the CME Group accounted for 61% of the volume traded in 2017.
- The Steel Rebar futures and the Iron Ore futures traded on the Shanghai Futures Exchange and the Dalian Commodity Exchange respectively, Moscow Exchange's Crude Oil Brent futures and the Corn futures traded on CME Group were among the most traded commodity derivatives contracts in 2017.



**Top 10 exchanges by number of commodity options and futures contracts traded in 2017**

	Exchange	Volume		Notional Value		Open interest	
		2017	AGR	2017	AGR	2017	AGR
1	Shanghai Futures Exchange	1 364 243 528	-19%	13 800 402	13%	4 061 900	8%
2	CME Group	1 129 021 590	6%	55 634 000	20%	32 048 700	-8%
3	Dalian Commodity Exchange	1 101 280 152	-28%	79 804 335	-10%	10 218 912	-3%
4	Zhengzhou Commodity Exchange	586 030 140	-35%	3 278 745	-62%	2 730 510	1%
5	Moscow Exchange	491 353 590	4%	286 257	13%	1 023 572	7%
6	ICE Futures Europe	483 539 429	12%	23 883 543	48%	13 645 570	6%
7	ICE Futures US	284 935 514	-6%	2 045 583	NA	2 498 025	NA
8	Multi Commodity Exchange of India	198 614 562	-19%	805 699	-11%	325 354	25%
9	London Metal Exchange	157 369 710	1%	12 724 394	24%	2 760 749	1%
10	Singapore Exchange	18 034 182	6%	NA	NA	1 223 397	80.1%
	Others	69 885 214	-7%	NA	NA	NA	NA
	<b>Total</b>	<b>5 884 307 611</b>	<b>-14.5%</b>				

**Top 10 commodity contracts traded in 2017**

	Contract Name	Size	Exchange	Volume		Notional Value		Open interest	
				2017	AGR	2017	AGR	2017	AGR
<b>1</b>	Steel Rebar futures	10 tons/lot	Shanghai Futures Exchange	702 019 499	-25%	3 724 449	11%	1 459 373	9%
<b>2</b>	Crude Oil Brent Futures	10 barrels	Moscow Exchange	451 643 376	3%	250 589	16%	562 138	25%
<b>3</b>	Iron Ore futures	100 MT/Contract	Dalian commodity exchange	328 743 737	-4%	2 620 934	17%	1 018 663	85%
<b>4</b>	Brent Crude futures	1,000 barrels	ICE Futures Europe	241 538 069	15%	14 004 143	52%	2 337 295	7%
<b>5</b>	Soybean Meal futures	10 MT/contract	Dalian commodity exchange	162 877 864	-58%	703 652	-59%	1 138 022	-19%
<b>6</b>	Corn futures	10 MT/contract	Dalian commodity exchange	127 323 949	4%	323 344	10%	647 042	-45%
<b>7</b>	Hot Rolled Coil Futures	10 tons/lot	Shanghai Futures Exchange	103 131 555	138%	579 744	214%	360 958	96%
<b>8</b>	Bitumen futures	10 tons/lot	Shanghai Futures Exchange	97 440 530	-48%	388 652	-31%	184 983	-53%
<b>9</b>	Zinc futures	5 tons/lot	Shanghai Futures Exchange	91 449 266	25%	1 642 375	69%	225 992	9%
<b>10</b>	Corn futures	5 000 bushels (~ 127 Metric Tons)	CME Group	89 876 782	-17%	1 665 387	-17%	1 538 886	-26%

## 8.1 Granular commodity derivatives data

This year, in addition to aggregate commodity derivatives trading statistics, more granular data on commodity derivatives by underlying 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.

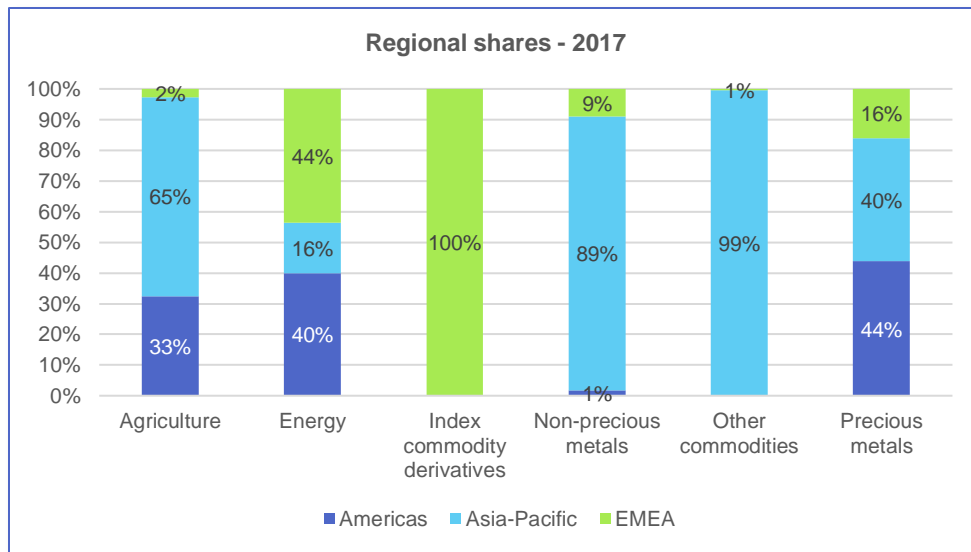
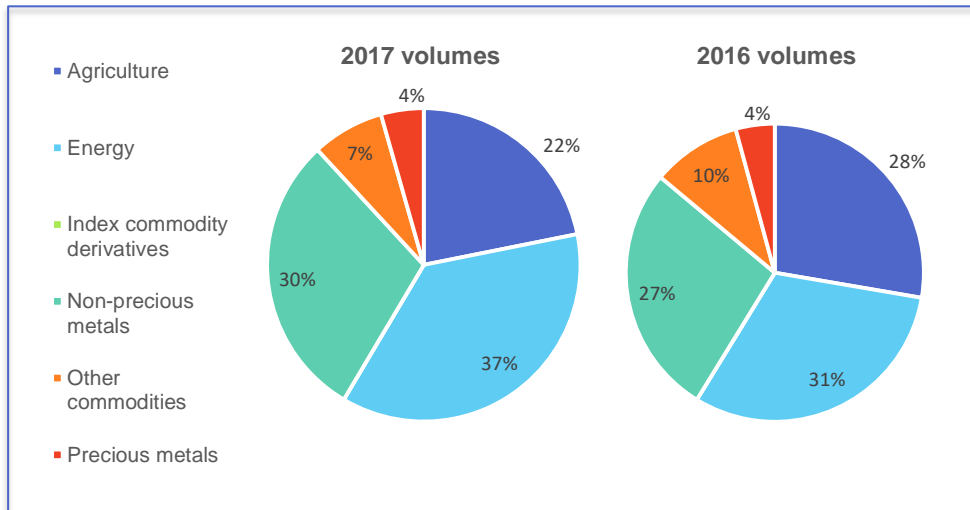
Key trends and highlights from this data are as follows:

- In 2017 and 2016, energy related contracts accounted for the largest commodity derivatives volumes traded followed by non-precious metals, agriculture, other commodities, precious metals and index commodity derivatives.
- Total volumes of commodity derivatives contracts traded in 2017 fell by 14.5% largely due to falls in volumes of agriculture, non-precious metals and other commodity contracts. Energy and index commodity derivatives were up on 2016.
- As with other products, there is a large variation in contract sizes across markets. For instance, metal contract sizes vary from 10 tons to 100MT per contract, agricultural contracts from 10MT to 127MT per contract and crude oil contracts from 10 barrels to a 1000 barrels. Hence, the regional shares of volumes traded chart must be interpreted in this context.
  - The Americas region accounted for 33%, 40% and 44% respectively of volumes traded of agriculture, energy and precious metals contracts
  - The Asia-Pacific region accounted for the majority of the agriculture (65%), non-precious metals (89%) and other derivatives contracts traded (99%).
  - The EMEA region accounted for a sizeable share of the energy (44%), index commodity derivatives (100%) and precious metals contracts (16%) by volumes traded.

Category	Vol-2017	Vol-2016	% change Y-o-Y
<b>Agriculture</b>	1 286 069 380	1 905 467 550	-32.5%
<b>Energy</b>	2 157 755 365	2 137 544 593	0.9%
<b>Non-precious metals</b>	1 741 973 887	1 879 061 336	-7.3%
<b>Precious metals</b>	259 667 301	291 363 464	-10.9%
<b>Index commodity derivatives</b>	113 076	96 228	17.5%
<b>Other commodities</b>	438 749 917	666 449 261	-34.2%
<b>Total</b>	<b>5 884 328 926</b>	<b>6 879 982 432<sup>5</sup></b>	<b>-14.5%</b>

<sup>5</sup> Excludes data for Indonesia Commodity and Derivatives exchanges. Some contract categories include commodity derivatives swaps figures.

Top 5 exchanges by volumes traded in 2017 and % change on 2016				
Agriculture	Volume	%/'16	Notional Value	%/'16
Dalian Commodity Exchange	533 107 585	-39%	148 013	-97%
CME Group	339 625 678	2%	10 040 654	-0.2%
Zhengzhou Commodity Exchange	195 632 377	-59%	1 482 109	-49%
Shanghai Futures Exchange	89 341 052	-8%	2 110 180	19%
ICE Futures US	70 654 342	-6%	NA	NA
<b>Energy</b>				
CME Group	646 869 556	6%	30 726 815	25%
ICE Futures Europe	465 903 095	13%	23 499 921	50%
Moscow Exchange	458 295 729	3%	254 242	16%
ICE Futures US	214 281 172	-6%	NA	NA
Zhengzhou Commodity Exchange	167 712 795	-10%	842 872	12%
<b>Non-precious metals</b>				
Shanghai Futures Exchange	1 104 871 255	-13%	9 978 422	27%
Dalian Commodity Exchange	328 743 737	-4%	2 620 934	26%
London Metal Exchange	156 633 873	0%	NA	NA
Multi Commodity Exchange of India	65 506 594	2%	308 571	27%
Zhengzhou Commodity Exchange	41 199 193	1936%	216 631	-26%
<b>Precious metals</b>				
CME Group	113 634 957	23%	12 927 959	23%
Shanghai Futures Exchange	72 589 259	-40%	1 323 102	-37%
Moscow Exchange	33 056 639	22%	32 015	-5%
Multi Commodity Exchange of India	27 756 148	-33%	216 733	-36%
Borsa Istanbul	7 223 579	47%	2 767	84%
<b>Index commodity derivatives</b>				
Eurex	113 076	18%	2 015	46%
<b>Other commodities</b>				
Zhengzhou Commodity Exchange	181 485 775	-24%	737 135	NA
Dalian Commodity Exchange	157 113 026	-33%	101 256	-10%
Shanghai Futures Exchange	97 440 530	-48%	388 652	-92%
Nasdaq OMX Nordic Exchanges	2 216 830	-22%	15 165	-26%
Singapore Exchange	493 756	-11%	NA	116%





## 9 OTHER OPTIONS & FUTURES

Other options and futures include products which do fall into the categories that have been analysed above such as index volatility options and futures, dividend options and futures, and inflation indexed derivatives. Eight out of forty-eight exchanges that were surveyed submitted data on other options and futures. While volumes traded of other options were up 25.2%, volumes traded of other futures were down 20% on 2016.

Most exchanges recorded an uptick in the volumes of their other options contracts traded. Cboe Global Market's SPX VIX Index options, which accounted for over 90% of the other options traded, recorded a 22% increase with over 181 million contracts traded in 2017. Eurex's options on VStoxx futures also recorded a 51% increase in volumes on 2016 with over 7.9 million contracts traded in 2017.

The decline in the volumes of other futures contracts traded was largely due to a decline in volumes traded on the Johannesburg Stock Exchange, where volumes, which accounted for about 57% of total other futures volumes traded, recorded a 36% drop in volumes traded on 2016. Cboe Global Markets, which accounted for about 30% of the total other futures volumes traded, experienced a 23% increase in volumes traded due to an uptick in the trading of VIX futures (73.8 million contracts traded in 2017, up 22.7% on 2016) as well as introduction of the new Bitcoin futures in late 2017.

Eurex's futures on VStoxx, Japan Exchange Group's REIT Index futures and Euronext's CAC40 Dividend Index futures were among the most traded other futures contracts.

### Exchanges by number of 'other' options contracts traded in 2017

	Volume		Notional Value		Open interest	
	2017	AGR	2017	AGR	2017	AGR
Cboe Global Markets	181 314 269	22%	201 083	0	9 885 413	86%
Eurex	11 049 393	67%	39 135	30%	1 410 031	-97%
Johannesburg Stock Exchange	4 341 412	84%	128	-1%	225 288	-51%
ICE Futures Europe	728 794	40%	397	79%	128 020	401%
Japan Exchange Group	184	-83%	NA	NA	22	NA
<b>Total</b>	<b>197 434 052</b>	<b>25.2%</b>				

### Exchanges by number of 'other' futures contracts traded in 2017

	Volume		Notional Value		Open interest	
	2017	AGR	2017	AGR	2017	AGR
Johannesburg Stock Exchange	133 448 625	-36%	3 781	-57%	NA	NA
Cboe Global Markets	73 991 390	23%	820 121	-14%	566 140	43%
Eurex	21 841 926	12%	91 319	-1%	3 268 522	-97%
ICE Futures Europe	5 443 343	-2%	38 910	25%	1 013 249	11%
Euronext	412 263	135%	835	202%	104 538	43%
Japan Exchange Group	329 990	-6%	4 698	12%	31 244	-12%
LSE Group	95 909	76%	101	89%	29 295	-10%
Singapore Exchange	90 946	NA	NA	NA	30 040	NA
<b>Total</b>	<b>235 654 392</b>	<b>-20%</b>				

## 10 ANNEX 1 – TRADING STATISTICS

**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** (USD millions) 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)

## 11 ANNEX 2 - LIST OF EXCHANGES THAT HAVE CONTRIBUTED TO THE REPORT

Athens Exchange	Moscow Exchange
Australian Securities Exchange	Multi Commodity Exchange of India
Cboe Global Markets (Bats GM)	Nasdaq OMX Nordic Exchanges
B3 SA Brasil Bolsa Balcao	NASDAQ (US market)
Bolsa de Comercio de Buenos Aires	National Stock Exchange of India
Bolsa de Valores de Columbia	NYSE Derivatives
Borsa Istanbul	NZX Ltd.
Boston Options Exchange	Oslo Børs
BSE Limited	Shanghai Futures Exchange
Budapest Stock Exchange	Singapore Exchange
Bursa Malaysia Derivatives	TAIFEX
Cboe Global Markets	Tel Aviv Stock Exchange
China Financial Futures Exchange	Thailand Futures Exchange (TFEX)
CME Group	Warsaw Stock Exchange
Dalian Commodity Exchange	Zhengzhou Commodity Exchange
Dubai Gold & Commodities Exchange	
Eurex	
Euronext	
Hong Kong Exchanges and Clearing	
ICE Futures Canada	
ICE Futures Europe	
ICE Futures US	
Indonesia Commodity and Derivatives Exchange	
International Securities Exchange	
Japan Exchange Group	
Johannesburg Stock Exchange	
Korea Exchange	
London Metal Exchange	
LSE Group	
MEFF	
Mexder	
MIAX Options Exchange	
Montréal Exchange	

## 12 ANNEX 3 – PRODUCT LEVEL DATA TABLES

### Single Stock Options

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
Cboe Global Markets (Bats GM)	272 439 361	261 582 632	NA	NA	NA	NA
Bolsa de Comercio de Buenos Aires	32 561 351	39 984 964	NA	NA	NA	NA
Boston Options Exchange	61 350 871	67 846 228	NA	NA	NA	NA
International Securities Exchange	302 630 789	268 857 090	NA	NA	NA	NA
MexDer	300 820	322 308	39	36	2 000	62 581
MIAX Options Exchange	116 016 897	131 845 029	NA	NA	NA	NA
Montréal Exchange (TMX Group)	23 178 799	25 302 965	90 494	64 209	3 217 216	3 073 150
NASDAQ (US market)	598 660 102	512 237 363	NA	NA	NA	NA
NYSE Derivatives	318 093 553	368 820 227	70 602	NA	NA	NA
B3 SA Brasil Bolsa Balcao	681 905 063	692 006 943	435 877	329 060	16 611 300	17 310 200
Cboe Global Markets	413 625 705	364 374 899	NA	NA	190 867 000	178 225 228
<b>Asia-Pacific</b>						
Australian Securities Exchange	86 902 467	85 174 090	167 147	140 489	7 128 500	7 619 410
BSE Limited	3	126 898	NA	848	NA	NA
Hong Kong Exchanges and Clearing	103 223 230	70 074 425	302 584	163 114	8 114 500	6 076 940
Japan Exchange Group	747 416	845 225	NA	NA	51 253	28 641
Korea Exchange	17 674 231	11 564 672	285	256	305 906	108 478
National Stock Exchange of India	116 497 267	88 815 026	1 380 388	785 957	236 635	152 141
TAIFEX	215 425	289 101	843	593	5 558	3 315
<b>EMEA</b>						
Athens Stock Exchange	24 572	11 853	11	6	922	291
Borsa Istanbul	3 441 016	2 878 262	669	573	825 057	631 849
Eurex	169 118 965	186 375 693	838 270	748 731	42 206 211	38 173 401
Euronext	70 084 311	57 015 075	245 377	145 975	12 826 261	10 008 073
ICE Futures Europe	15 555 105	22 437 012	253 934	2 365 433	3 620 970	3 913 970
Johannesburg Stock Exchange	9 244 496	8 688 159	540	284	1 288 741	1 012 850
MEFF	20 316 354	22 900 619	19 550	17 030	5 904 677	6 403 287
Moscow Exchange	2 154 952	6 226 062	615	1 433	65 572	133 874
Nasdaq OMX Nordic Exchanges	22 681 858	25 873 807	35 008	35 171	2 269 840	2 786 210
Oslo Børs	2 737 475	3 243 158	3 463	3 238	420 886	573 009
Tel-Aviv Stock Exchange	727 458	989 523	4 339	4 104	61 409	60 540
LSE Group	22 607 912	26 515 896	75 174	56 565	NA	NA
<b>Grand Total</b>	<b>3 484 717 824</b>	<b>3 353 225 203</b>				

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
Bolsa de Valores de Colombia	419 785	602 897	374	437	10 036	45 382
MexDer	277 720	8 750	42	2	300	NA
Montréal Exchange (TMX Group)	1 145 427	608	4 472	20	227 470	571
<b>Asia-Pacific</b>						
Australian Securities Exchange	2 921 155	4 718 169	3 996	4 333	600 619	664 005
BSE Limited	647	3 672	8	35	7	16
Hong Kong Exchanges and Clearing	114 083	192 738	696	625	5 360	5 076
Korea Exchange	280 064 162	172 120 372	253 726	101 623	2 157 120	1 157 668
National Stock Exchange of India	201 923 887	172 712 809	2 283 280	1 468 836	1 704 820	1 102 410
TAIFEX	18 763 068	9 954 514	112 748	50 386	151 182	101 317
Thailand Futures Exchange (TFEX)	47 480 762	33 826 624	NA	NA	2 393 257	1 589 460
<b>EMEA</b>						
Athens Stock Exchange	18 698 023	14 496 353	1 884	1 190	395 963	317 780
Borsa Istanbul	18 440 819	7 146 015	3 305	936	853 204	436 671
Budapest Stock Exchange	214 606	197 416	1 305	844	10 035	6 823
Dubai Gold & Commodities Exchange	1 357 379	91 491	2 340	74	973	373
Eurex	101 475 028	101 067 641	444 051	301 480	3 769 972	2 652 595
Euronext	389 909	270 573	1 704	956	10 716	6 463
ICE Futures Europe	82 062 501	41 588 273	3 541 864	2 913 311	995 812	1 013 070
Johannesburg Stock Exchange	139 060 767	181 498 194	17 345	15 335	9 013 443	0
MEFF	12 018 650	9 835 839	9 086	6 016	1 365 404	780 441
Moscow Exchange	201 803 966	254 711 570	58 721	58 034	1 863 650	1 405 840
Nasdaq OMX Nordic Exchanges	3 523 309	3 891 525	6 588	3 837	199 715	263 756
Oslo Børs	1 032 993	1 430 865	525	650	130 834	154 798
Warsaw Stock Exchange	1 651 089	1 537 581	3 227	1 991	19 958	21 252
LSE Group	3 581 407	4 309 070	15 564	13 209	NA	NA
<b>Grand Total</b>	<b>1 138 421 142</b>	<b>1 016 213 559</b>				

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
CME Group	168 773 253	160 368 404	27 345 300	22 135 100	4 541 650	3 970 180
ICE Futures US	63 559	57 708	8 748	NA	600	NA
International Securities Exchange (ISE)	1 353 210	747 567	NA	NA	NA	NA
MexDer	22 685	56 413	558	1 214	292	4 814
Montréal Exchange (TMX Group)	193 038	671 466	1 411	3 922.4	91 090	40 447
NASDAQ (US market)	2 758 019	2 513 798	NA	NA	NA	NA
B3 SA Brasil Bolsa Balcao	19 972 818	14 025 305	224 935	182 403	381 184	325 683
Cboe Global Markets	496 337 160	433 316 741	NA	NA	25 896 900	19 693 978
<b>Asia-Pacific</b>						
Australian Securities Exchange	10 887 815	12 383 226	492 620	477 481	887 744	790 215
BSE Limited	118	6 550 838	1	47 916	NA	NA
Bursa Malaysia Derivatives (BMD)	20 285	10 171	160	NA	462	NA
Hong Kong Exchanges and Clearing	31 935 369	30 468 429	299 515	302 173	24 649 600	19 221 400
Japan Exchange Group	33 347 953	34 166 274	NA	NA	2 163 030	1 967 820
Korea Exchange	554 765 334	359 036 315	43 699 884	34 474 994	2 757 470	1 284 700
National Stock Exchange of India	1 362 724 693	1 034 997 570	18 124 076	9 637 066	1 778 350	1 742 600
Singapore Exchange	8 531 404	6 207 176	NA	NA	1 539 987	770 123
TAIFEX	186 736 963	167 732 568	3 224 524	2 261 600	1 201 209	813 785
Thailand Futures Exchange (TFEX)	1 081 681	428 810	NA	NA	35 939	13 582
<b>EMEA</b>						
Athens Stock Exchange	95 203	61 128	448	132	4 250	2 306
Borsa Istanbul	275 030	315 783	857	845	19 266	25 686
Eurex	372 741 102	388 835 166	15 743 394	13 369 847	35 138 231	34 457 377
Euronext	14 677 562	10 866 435	912 317	501 959	706 614	445 724
ICE Futures Europe	11 034 747	15 918 533	16 676	22 271	1 870 420	2 114 610
Johannesburg Stock Exchange	4 420 461	4 323 258	2 639	3 025	782 813	824 324
MEFF	4 303 701	3 222 390	51 759	29 633	655 186	366 845
Moscow Exchange	38 061 837	30 798 206	77 081	56 484	1 606 300	1 543 490
Nasdaq OMX Nordic Exchanges	6 111 718	8 506 735	120 628	129 908	437 847	441 427
Oslo Børs	781 785	497 956	6 276	4 677	74 380	77 917
Tel-Aviv Stock Exchange	32 388 214	37 708 688	1 335 027	NA	281 821	NA
Warsaw Stock Exchange	304 494	377 232	2 030	1 635	17 621	23 196
LSE Group	2 909 372	6 098 200	164 139	267 032	NA	NA
<b>Grand Total</b>	<b>3 367 610 583</b>	<b>2 771 268 489</b>				

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
Bolsa de Valores de Colombia	1 734	474	21	5	24	40
CME Group	504 155 607	609 691 636	60 326 200	62 128 100	4 693 160	3 523 180
ICE Futures US	61 057 693	58 606 763	5 734 978	NA	1 451 319	NA
MexDer	1 024 760	1 502 576	22 309	23 959	41 663	35 711
Montréal Exchange (TMX Group)	6 243 977	6 114 184	899 647	633 954	261 098	245 634
B3 SA Brasil Bolsa Balcao	309 127 546	170 157 338	1 636 367	835 305	4 385 480	401 046
<b>Asia-Pacific</b>						
Australian Securities Exchange	12 600 200	12 339 297	1 388 332	1 136 033	310 688	281 587
BSE Limited	47 257	63 932	540	550	NA	NA
Bursa Malaysia Derivatives (BMD)	2 034 237	2 750 951	40 870	48 761	23 190	27 829
China Financial Futures Exchange	9 825 623	9 401 843	1 612 384	1 435 968	87 712	99 127
Hong Kong Exchanges and Clearing	75 546 018	82 693 876	60 800	59 196	61 161 900	52 714 700
Japan Exchange Group	278 761 006	293 749 363	11 786 573	9 979 071	1 965 071	1 836 840
Korea Exchange	66 332 720	44 352 678	4 184 668	3 478 683	536 400	147 169
National Stock Exchange of India	54 332 172	74 873 789	674 200	662 515	354 552	295 421
NZX Limited	0	12	NA	1	NA	NA
Singapore Exchange	141 164 086	142 186 086	NA	NA	1 756 116	1 485 440
TAIFEX	57 798 917	60 595 256	2 797 751	2 245 515	164 222	140 911
Thailand Futures Exchange (TFEX)	26 321 073	32 192 984	NA	NA	318 464	283 692
<b>EMEA</b>						
Athens Stock Exchange	629 413	895 527	2 927	1 529	6 383	7 705
Borsa Istanbul	44 363 062	46 113 549	144 352	124 645	449 750	413 725
Budapest Stock Exchange	307 897	229 085	422	209	4 429	4 520
Dubai Gold & Commodities Exchange	140 615	174 984	1 198	1 256	1 144	707
Eurex	417 178 059	498 173 245	22 900 987	21 196 346	7 988 327	6 114 092
Euronext	41 912 510	44 265 259	3 103 765	NA	540 643	1 267
ICE Futures Europe	36 545 692	42 808 306	3 761 944	3 454 538	1 394 180	1 379 787
Johannesburg Stock Exchange	20 397 512	21 794 769	475 181	479 008	561 322	849 456
MEFF	7 938 272	9 395 136	787 779	646 492	141 990	110 374
Moscow Exchange	152 629 708	236 104 126	320 904	429 876	375 296	613 064
Nasdaq OMX Nordic Exchanges	39 065 778	43 064 945	706 182	634 113	950 577	849 198
Oslo Børs	2 810 099	3 426 747	22 703	21 310	47 515	66 094
Tel-Aviv Stock Exchange	12 457	7 371	515	NA	316	NA
Warsaw Stock Exchange	4 582 943	4 793 681	61 359	41 566	60 267	73 235
LSE Group	8 532 200	12 042 307	911 773	976 983	NA	NA
<b>Grand Total</b>	<b>2 383 420 843</b>	<b>2 564 562 075</b>				

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
Cboe Global Markets (Bats GM)	190 099 210	186 860 476	NA	NA	NA	NA
Boston Options Exchange (TMX Group)	25 553 513	41 356 496	NA	NA	NA	NA
International Securities Exchange (ISE)	227 656 519	283 223 551	NA	NA	NA	NA
MexDer	247	293	NA	NA	NA	NA
MIAX Options Exchange	75 136 976	115 267 450	NA	NA	NA	NA
Montréal Exchange (TMX Group)	11 417 417	11 724 768	20 978	14 125	1 467 245	1 745 250
NASDAQ (US market)	405 040 187	381 040 628	NA	NA	NA	NA
NYSE Derivatives	277 938 488	316 462 583	40 179	48 873	NA	NA
B3 SA Brasil Bolsa Balcao	31 666 541	4 269 833	NA	NA	204 685	36 850
Cboe Global Markets	363 702 371	326 683 968	NA	NA	94 154 800	90 286 721
<b>Asia-Pacific</b>						
Hong Kong Exchanges and Clearing	2 619 081	3 507 689	24 338	32 313	191 957	189 939
Japan Exchange Group	168 187	76 063	NA	NA	26 807	3 902
TAIFEX	165 967	330 369	1 698	2 571	6 075	7 136
<b>EMEA</b>						
Eurex	241 319	286 160	1 157	1 118	6 986	19 533
Euronext	28 903	10 394	110	31	9 198	1 267
Johannesburg Stock Exchange	0	3 987	NA	NA	NA	NA
<b>Grand Total</b>	<b>1 611 434 926</b>	<b>1 671 104 708</b>				

**ETF Futures**

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Asia-Pacific</b>						
Hong Kong Exchanges and Clearing	7 449	33 240	15	67	486	1 821
TAIFEX	1 224 271	1 748 371	13 806	16 181	21 573	20 410
<b>EMEA</b>						
Borsa Istanbul	5 653	5 728	4	4.1	NA	NA
Budapest Stock Exchange	2	0	0.01	0	NA	NA
Eurex	252	0	2.4	0	NA	NA
Johannesburg Stock Exchange	651 835	521 850	NA	73	NA	NA
<b>Grand Total</b>	<b>1 889 462</b>	<b>2 309 189</b>				

### Short Term Interest Rate Options

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
CME Group	343 447 929	308 877 968	343 399 726	309 068 204	35 527 683	33 836 464
Montréal Exchange (TMX Group)	801 051	683 247	638 256	508 482	120 390	250 940
B3 SA Brasil Bolsa Balcao	105 078 412	51 459 255	2 090	67	27 587 460	5 916 165
<b>Asia-Pacific</b>						
Australian Securities Exchange	0	5 500	0	3 964	0	0
<b>EMEA</b>						
Eurex	2 317	10 215	680	2 687	2 201	4 635 822
ICE Futures Europe	70 255 733	63 608 628	63 279 320	50 172 047	10 778 181	7 774 279
Johannesburg Stock Exchange	111 779	0	9	0	NA	0
Nasdaq OMX Nordic Exchanges	285 000	20 000	341 442	21 050	195 000	NA
<b>Grand Total</b>	<b>519 982 221</b>	<b>424 664 813</b>				

### Short Term Interest Rate Futures

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
Bolsa de Valores de Colombia	19 267	29 775	3 449	5 006	11 397	15 706
CME Group	687 891 567	688 266 468	879 936 851	821 503 622	14 179 251	12 125 022
MexDer	25 938	545 100	131	2 623	86 004	582 696
Montréal Exchange (TMX Group)	28 962 355	26 316 537	23 076 434	19 585 128	735 064	936 688
B3 SA Brasil Bolsa Balcao	389 621 943	336 225 890	12 234 455	10 769 008	28 484 236	259 824 484
<b>Asia-Pacific</b>						
Australian Securities Exchange	33 785 830	35 367 906	29 468 637	30 911 221	1 273 237	1 331 103
Bursa Malaysia Derivatives (BMD)	0	40	NA	NA	NA	NA
Hong Kong Exchanges and Clearing	588	52	93	8	20	40
Singapore Exchange	0	15	NA	NA	NA	3 291
<b>EMEA</b>						
Eurex	74 505	169 335	22 357	44 676	31 565	2 684 064
ICE Futures Europe	402 649 237	294 627 100	373 409 244	240 821 892	7 652 399	5 550 479
Johannesburg Stock Exchange	10 219 938	40 091	92 699	68	NA	NA
Moscow Exchange	23 462	3 295	32	4	14 010	2 520
Nasdaq OMX Nordic Exchanges	10 998 566	7 958 004	13 176 733	8 375 956	1 906 216	1 382 450
Warsaw Stock Exchange	2 537	336	79	9	100	10
LSE Group	1 734 491	235 912	1 460 298	170 841	162 372	39 207
<b>Grand Total</b>	<b>1 566 010 224</b>	<b>1 389 785 856</b>				



### Long Term Interest Rate Options

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
CME Group	187 704 008	145 442 505	18 996 872	14 712 457	4 240 057	3 695 350
Montréal Exchange (TMX Group)	11 650	4 553	928	339	2 358	1 576
<b>Asia-Pacific</b>						
Australian Securities Exchange	961 877	1 458 722	75 092	105 126	2 000	13 296
Japan Exchange Group	861 714	958 472	NA	NA	20 995	9 997
<b>EMEA</b>						
Eurex	73 337 940	59 277 386	12 708 581	9 068 141	2 304 833	59 798 376
Johannesburg Stock Exchange	195 543	205 539	30	22	NA	NA
<b>Grand Total</b>	<b>263 072 732</b>	<b>207 347 177</b>				

### Long Term Interest Rate Futures

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
Bolsa de Valores de Colombia	267 446	170 555	25 281	15 080	8 077	6 787
CME Group	836 481 051	751 606 737	93 373 051	82 786 254	10 309 746	91 543 189
MexDer	708 263	1 839 390	4 106	10 891	34 302	57 741
Montréal Exchange (TMX Group)	24 304 781	21 085 080	1 936 540	14 965 028	526 357	438 119
B3 SA Brasil Bolsa Balcao	41 698	16 189	5 030	2 188	2 417	7 105
<b>Asia-Pacific</b>						
Australian Securities Exchange	99 911 369	92 517 625	7 799 914	6 647 023	2 044 318	1 789 335
BSE Limited	9 338 072	6 179 322	29 776	18 618	5 901	1 919
China Financial Futures Exchange	14 770 315	8 934 012	2 161 422	1 371 801	107 403	80 298
Hong Kong Exchanges and Clearing	8 539	0	646	0	NA	NA
Japan Exchange Group	8 192 170	7 389 883	NA	NA	96 314	80 905
Korea Exchange	34 287 487	38 824 185	3 679 020	3 789 044	306 124	266 096
National Stock Exchange of India	16 325 501	15 281 634	52 210	46 124	83 651	42 350 746
Singapore Exchange	548 951	607 675	NA	NA	18 093	14 496
<b>EMEA</b>						
Eurex	508 720 954	467 102 126	86 883 899	70 983 378	6 021 582	162 147 729
ICE Futures Europe	51 568 953	53 765 296	7 050 464	6 885 345	780 152	617 965
Johannesburg Stock Exchange	1 726 406	9 167 378	14 890	71 569	NA	NA
MEFF	0	360	0	38	0	0
Moscow Exchange	1 436 424	2 643 296	256	433	7 012	49 124
Nasdaq OMX Nordic Exchanges	3 780 060	3 727 019	4 528 667	3 922 761	220 128	188 457
Warsaw Stock Exchange	4 862	3 971	155	108	1	3
LSE Group	15 463	16 610	2 394	1 959	20	138
<b>Grand Total</b>	<b>1 612 438 765</b>	<b>1 480 878 343</b>				

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
CME Group	19 537 355	18 139 184	2 245 508	2 071 347	659 172	656 510
ICE Futures US	10 210	22 893	1 004	NA	675	NA
MexDer	94 134	32 904	899	296	44 983	85
Montréal Exchange (TMX Group)	9 008	19 006	72	91	678	741
B3 SA Brasil Bolsa Balcao	8 641 075	7 386 410	4 552	9 492	622 666	818 467
<b>Asia-Pacific</b>						
BSE Limited	334 052 119	207 386 529	339 314	206 816	283 114	613 868
Hong Kong Exchanges and Clearing	10 473	0	1 046	0	3 113	0
National Stock Exchange of India	371 600 526	351 632 420	382 861	351 609	1 779 471	2 420 397
Singapore Exchange	1 534	208	NA	NA	NA	NA
TAIFEX	138 690	150 310	4 079	3 734	10 497	5 189
<b>EMEA</b>						
Borsa Istanbul	8 935 808	7 053 487	8 667	6 290	254 160	721 389
Budapest Stock Exchange	21 100	10 550	24	11	300	1 500
Dubai Gold & Commodities Exchange	302 576	334 823	10	11	12 303	8 963
Eurex	3 474	13 294	413	1 426	NA	1 614
Euronext	18 399	55 430	220	583	4 505	4 253
Johannesburg Stock Exchange	20 574 664	14 030 889	563	401	4 526 266	1 240 499
Moscow Exchange	36 821 832	30 905 844	37 918	34 846	1 871 144	1 984 956
Tel-Aviv Stock Exchange	13 514 802	13 136 366	141 175	131 812	547 393	444 534
<b>Grand Total</b>	<b>814 287 779</b>	<b>650 310 547</b>				

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
Bolsa de Valores de Colombia	407 796	599 863	15 146	24 332	3 623	3 553
CME Group	211 526 328	196 951 833	20 894 341	18 857 126	1 751 286	1 435 748
ICE Futures US	8 437 876	8 459 291	728 720	NA	82 070	NA
MexDer	8 576 719	8 632 764	83 778	79 224	865 529	836 895
B3 SA Brasil Bolsa Balcao	222 996 785	163 892 083	6 664 240	5 018 516	4 385 481	4 115 890
<b>Asia-Pacific</b>						
BSE Limited	264 995 990	322 747 312	271 756	295 882	975 712	577 757
Hong Kong Exchanges and Clearing	747 152	544 891	3 227	6 092	573 055	10 065
Korea Exchange	62 203 981	65 606 504	660 891	632 331	850 048	828 377
National Stock Exchange of India	358 254 960	396 431 206	374 802	402 612	2 025 665	1 969 063
Singapore Exchange	9 996 635	6 282 730	NA	NA	94 191	NA
TAIFEX	533 918	692 443	16 879	22 055	6 697	5 976
Thailand Futures Exchange (TFEX)	346 890	204 470	NA	NA	13 150	8 180
<b>EMEA</b>						
Borsa Istanbul	69 334 515	41 670 839	68 650	37 245	564 606	476 723
Budapest Stock Exchange	6 477 100	7 368 768	7 384	7 697	580 216	635 847
Dubai Gold & Commodities Exchange	14 903 699	18 097 302	99 807	109 449	216 583	238 185
Johannesburg Stock Exchange	47 794 037	34 393 431	53 103	38 114	2 066 426	1 090 978
Moscow Exchange	660 347 194	930 716 193	684 990	1 061 804	4 771 652	2 874 122
Warsaw Stock Exchange	1 076 703	1 259 323	1 194	1 222	42 180	46 398
<b>Grand Total</b>	<b>1 948 958 278</b>	<b>2 204 551 246</b>				

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
CME Group	153 435 890	155 743 566	6 530 200	6 265 000	10 091 600	10 298 800
ICE Futures Canada	154 524	186 290	21	31	10 986	17 128
ICE Futures US	53 134 517	52 777 649	331 722	NA	955 465	NA
B3 SA Brasil Bolsa Balcao	679 199	352 058	115	65	60 648	43 359
<b>Asia-Pacific</b>						
Australian Securities Exchange	31 119	22 199	6 166	3 686	16 558	12 303
Bursa Malaysia Derivatives (BMD)	38 916	40 120	0.9	1.3	26 016	10 000
Dalian Commodity Exchange	3 635 682	0	366	0	159 370	0
Multi Commodity Exchange of India	25 036	0	1 168	0	1 341	0
NZX Limited	40 267	18 156	4.1	2.2	6 392	10 261
Singapore Exchange	3 009 882	3 283 140	NA	NA	572 197	NA
TAIFEX	40 075	73 749	312	558	331	633
Zhengzhou Commodity Exchange	1 492 393	0	220	0	76 741	0
<b>EMEA</b>						
Eurex	6 377	840	105	54	5	211
Euronext	994 987	1 643 378	2 423	387	183 907	192 188
ICE Futures Europe	29 163 171	29 129 853	36 298	43 003	3 838 110	3 816 980
Johannesburg Stock Exchange	291 204	471 061	262	1 060	50 578	36 968
London Metal Exchange	7 637 725	7 102 541	612 594	464 403	507 269	529 548
Moscow Exchange	6 695 060	4 601 746	3 690	2 334	102 274	103 330
Nasdaq OMX Nordic Exchanges	145 616	94 885	3 773	1 596	83 213	66 520
<b>Grand Total</b>	<b>260 651 640</b>	<b>255 541 231</b>				

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
Bolsa de Valores de Colombia	430	1 011	3	11	132	605
CME Group	975 585 700	906 840 979	49 103 800	40 169 100	21 957 100	24 398 400
ICE Futures Canada	5 391 355	6 245 256	43 517	45 700	151 861	185 582
ICE Futures US	231 800 997	250 241 851	1 713 861	NA	1 542 560	NA
B3 SA Brasil Bolsa Balcao	1 548 894	1 390 766	13 012	14 387	45 196	41 790
<b>Asia-Pacific</b>						
Australian Securities Exchange	447 573	424 216	24 077	13 455	83 860	81 038
Bursa Malaysia Derivatives (BMD)	11 921 925	11 433 749	206	199	245 188	198 841
Dalian Commodity Exchange	1 097 644 470	1 537 479 768	79 803 968	88 433 108	10 059 542	10 519 914
Hong Kong Exchanges and Clearing	187 075	29 171	112	7	55 573	2 641
Multi Commodity Exchange of India	198 589 526	245 077 515	804 531	901 301	324 013	259 804
NZX Limited	271 408	180 147	731	419	45 771	39 804
Shanghai Futures Exchange	1 364 243 528	1 680 711 841	13 800 402	12 238 071	4 061 900	3 768 910
Singapore Exchange	15 024 300	13 673 778	NA	NA	651 200	679 375
TAIFEX	88 375	111 875	1 347	1 681	791	757
Thailand Futures Exchange (TFEX)	3 760 168	2 923 276	NA	NA	52 226	24 995
Zhengzhou Commodity Exchange	584 537 747	901 240 809	3 278 525	8 559 154	2 653 769	2 696 540
Indonesia Commodity and Derivatives Exchange	234 030	558 409	NA	NA	132	250
<b>EMEA</b>						
Borsa Istanbul	7 269 300	5 195 760	2 911	2 294	112 262	67 447
Budapest Stock Exchange	542	2 616	11	60	4	186
Dubai Gold & Commodities Exchange	735 389	971 186	6 834	8 904	3 764	4 457
Eurex	106 699	95 714	1 910	1 364	7 627	7 878
Euronext	12 170 346	12 115 438	158 438	132 825	435 917	374 948
ICE Futures Europe	454 376 258	402 153 516	23 847 245	16 083 849	9 807 460	9 072 480
Johannesburg Stock Exchange	2 718 489	2 955 019	45 814	68 853	117 783	65 553
London Metal Exchange	149 731 985	149 410 189	12 111 800	9 816 380	2 253 480	2 212 500
MEFF	17 930 084	24 083 621	1 024	1 076	8 009 262	9 061 967
Moscow Exchange	484 658 530	466 782 771	282 567	250 548	921 298	857 334
Nasdaq OMX Nordic Exchanges	2 679 502	3 436 031	46 356	44 418	628 898	779 669
LSE Group	1 346	3 610	62	306	441	1 578
<b>Grand Total</b>	<b>5 623 655 971</b>	<b>6 625 769 888</b>				

**Other Options**

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
Cboe Global Markets	181 314 269	148 253 619	201 083	234 624	9 885 413	5 325 332
<b>Asia-Pacific</b>						
Japan Exchange Group	184	1 053	NA	NA	22	NA
<b>EMEA</b>						
Eurex	11 049 393	6 608 662	39 135	30 003	1 410 031	54 570 279
ICE Futures Europe	728 794	522 161	397	221	128 020	25 565
Johannesburg Stock Exchange	4 341 412	2 357 241	128	129	225 288	463 313
<b>Grand Total</b>	<b>197 434 052</b>	<b>157 742 736</b>				

**Other Futures**

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
Cboe Global Markets	73 991 390	60 177 810	820 121	952 356	566 140	396 909
<b>Asia-Pacific</b>						
Hong Kong Exchanges and Clearing	0	606 161	0	14 667	0	10 065
Japan Exchange Group	329 990	351 000	4 698.2	4 204.9	31 244	35 401
<b>EMEA</b>						
Eurex	21 841 926	19 466 427	91 319	92 641	3 268 522	119 940 870
Euronext	412 263	175 087	835	276	104 538	72 980
ICE Futures Europe	5 443 343	5 565 367	38 910	31 007	1 013 249	915 628
Johannesburg Stock Exchange	133 448 625	208 265 868	3 781	8 816	0	0
LSE Group	95 909	54 351	101	54	29 295	32 511
<b>Grand Total</b>	<b>235 654 392</b>	<b>294 662 071</b>				

# 13 ANNEX 4 – GRANULAR COMMODITY DERIVATIVES DATA

## Agriculture

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
CME Group	339 625 678	332 644 744	10 040 654	10 059 346	7 169 327	6 334 952
ICE futures US	70 654 342	75 108 987	NA	NA	NA	NA
ICE Futures Canada	5 545 879	6 431 546	NA	NA	NA	NA
B3 SA Brasil Bolsa Balcao	2 176 488	1 811 367	13 319	14 925	120 858	81 029
<b>Asia-Pacific</b>						
Dalian Commodity Exchange	533 107 585	867 733 509	148 013	4 310 096	3 214 613	4 074 071
Zhengzhou Commodity Exchange	195 632 377	471 884 170	1 482 109	2 889 323	177 915	941 622
Shanghai Futures Exchange	89 341 052	97 371 256	2 110 180	1 780 487	218 426	153 697
Bursa Malaysia	11 958 341	11 455 875	199	167	271 133	208 648
Multi Commodity Exchange of India	2 437 131	3 216 150	18 412	20 089	25 747	26 165
Singapore Exchange	1 475 592	1 413 696	NA	NA	84 356	51 976
NZX	311 675	198 303	1 036	570	52 163	50 065
Australian Securities Exchange	82 007	115 172	330	410	11 238	14 961
Thailand Futures Exchange (TFEX)	10 613	250	NA	NA	521	37
<b>EMEA</b>						
ICE Futures Europe	17 637 624	19 062 589	383 622	418 737	730 292	912 009
Euronext	13 165 273	13 758 816	160 861	133 211	619 824	567 136
Johannesburg Stock Exchange	2 906 705	3 256 438	45 397	69 099	164 113	95 777
Budapest Stock Exchange	542	2 616	11	60	4	186
Moscow Exchange	283	1 343	0.1	1	14	40
LSE Group	174	719	2	9	0	80
Borsa Istanbul	19	4	NA	NA	NA	NA
<b>Grand Total</b>	<b>1 286 069 380</b>	<b>1 905 467 550</b>				

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
Bolsa de Valores de Colombia	19 267	29 775	3 449	5 006	11 397	15 706
CME Group	687 891 567	688 266 468	879 936 851	821 503 622	14 179 251	12 125 022
MexDer	25 938	545 100	131	2 623	86 004	582 696
Montréal Exchange (TMX Group)	28 962 355	26 316 537	23 076 434	19 585 128	735 064	936 688
B3 SA Brasil Bolsa Balcao	389 621 943	336 225 890	12 234 455	10 769 008	28 484 236	259 824 484
<b>Asia-Pacific</b>						
Australian Securities Exchange	33 785 830	35 367 906	29 468 637	30 911 221	1 273 237	1 331 103
Bursa Malaysia Derivatives (BMD)	0	40	NA	NA	NA	NA
Hong Kong Exchanges and Clearing	588	52	93	8	20	40
Singapore Exchange	0	15	NA	NA	NA	3 291
<b>EMEA</b>						
Eurex	74 505	169 335	22 357	44 676	31 565	2 684 064
ICE Futures Europe	402 649 237	294 627 100	373 409 244	240 821 892	7 652 399	5 550 479
Johannesburg Stock Exchange	10 219 938	40 091	92 699	68	NA	NA
Moscow Exchange	23 462	3 295	32	4	14 010	2 520
Nasdaq OMX Nordic Exchanges	10 998 566	7 958 004	13 176 733	8 375 956	1 906 216	1 382 450
Warsaw Stock Exchange	2 537	336	79	9	100	10
Euronext	60	0	238	0	0	0
LSE Group	1 734 491	235 912	1 460 298	170 841	162 372	39 207
<b>Grand Total</b>	<b>2 157 755 365</b>	<b>2 137 525 517</b>				



### Non-precious metals

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
CME Group	28 952 371	23 457 226	NA	NA	NA	NA
<b>Asia-Pacific</b>						
Shanghai Futures Exchange	1 104 871 255	1 275 262 332	9 978 422	7 842 290	3 232 185	2 654 720
Dalian Commodity Exchange	328 743 737	342 265 309	2 620 934	2 085 060	1 018 663	550 722
Multi Commodity Exchange of India	65 506 594	64 140 891	308 571	243 211	105 980	91 784
Zhengzhou Commodity Exchange	41 199 193	2 024 010	216 631	291 489	149 787	11 487
Singapore Exchange	16 016 160	15 324 271	NA	NA	1 044 631	1 186 112
Hong Kong Exchanges and Clearing	20 940	29 171	184	341	451	53
<b>EMEA</b>						
London Metal Exchange	156 633 873	156 512 730	NA	NA	NA	NA
Dubai Gold Communities Exchanges	17 818	7 632	544	191	152	59
Johannesburg Stock Exchange	11 007	5 721	100	35	285	670
Moscow Exchange	939	32 043	1	17	0	20
<b>Grand Total</b>	<b>1 741 973 887</b>	<b>1 879 061 336</b>				

### Precious metals

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Americas</b>						
CME Group	113 634 957	92 507 259	NA	NA	NA	NA
B3 SA Brasil Bolsa Balcao	35 548	1 580	9	NA	476	92
<b>Asia-Pacific</b>						
Shanghai Futures Exchange	72 589 259	121 261 084	1 323 102	2 086 737	426 301	566 738
Multi Commodity Exchange of India	27 756 148	41 706 752	216 733	339 055	122 214	103 335
Thailand Futures Exchange (TFEX)	3 749 555	2 903 950	NA	NA	51 705	24 958
Hong Kong Exchanges and Clearing	166 135	0	6 927	0	422	0
TAIFEX	128 450	185 624	1 659	2 239	1 122	1 390
Bursa Malaysia	2 500	8 997	11	33	65	193
<b>EMEA</b>						
Moscow Exchange	33 056 639	27 058 302	32 015	33 840	362 694	413 878
Borsa Istanbul	7 223 579	4 917 561	2 767	1 500	110 127	64 292
London Metal Exchange	735 171	0	NA	NA	NA	NA
Dubai Gold Communities Exchanges	570 921	788 191	20 390	27 842	3 048	3 754
Johannesburg Stock Exchange	18 439	23 838	223.2	260	192	266
Eurex	0	326	0	39	0	2
<b>Grand Total</b>	<b>259 667 301</b>	<b>291 363 464</b>				

**Other commodity derivatives**

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>Asia-Pacific</b>						
Zhengzhou Commodity Exchange	181 485 775	240 300 693	737 135	817 007	1 825 604	1 404 570
Dalian Commodity Exchange	157 113 026	235 942 473	101 256	1 319 147	655 582	469 038
Shanghai Futures Exchange	97 440 530	186 814 247	388 652	528 482	184 983	393 663
Singapore Exchange	493 756	554 118	NA	NA	90 298	84 623
<b>EMEA</b>						
Nasdaq OMX Nordic Exchanges	2 216 830	2 837 730	15 165	7 022	532 856	658 582
<b>Grand Total</b>	<b>438 749 917</b>	<b>666 449 261</b>				

**Index commodity derivatives**

	Volume		Notional Value		Open interest	
	2017	2016	2017	2016	2017	2016
<b>EMEA</b>						
Eurex	113 076	96 228	2 015	1 379	7 632	8 087
<b>Grand Total</b>	<b>113 076</b>	<b>96 228</b>				