

April 2017

# WFE IOMA 2016 derivatives report



## 2016 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-seven 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 and their clearinghouses 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),
- the notional value traded and
- the open interest as at year end.

The volume traded and the open interest are reported in full numbers. The notional value of the contracts traded is reported in million 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".

## 2 2016 IOMA SURVEY HIGHLIGHTS

Derivatives volumes continued to grow in 2016, increasing by 2.2% on 2015. This growth was driven by the growth in volumes traded in the Americas (up 6.7%) and the EMEA region (up 7.8%). In a reversal of the trend observed in 2015, the Asia-Pacific region saw a decline of 5.5% in volumes traded on 2015.

The overall increase in volume traded was driven by increases in all product lines except equity derivatives and 'other derivatives' which saw 11% and 1.1% decline in volumes traded on 2015. Commodity and currency derivatives continued their trend of strong growth in volumes (up 27.5% and 10.4% on 2015), while interest rate derivatives grew 5.5% in 2016.

## 3 MARKET OVERVIEW

This report focuses on derivatives trading activity in 2016 and covers responses from 47 exchanges (some of whom represent more than one trading and/or clearing venue). The figures presented in this report cover a full set of indicators (number of traded contracts, notional value of traded contracts and open interest) and are broken down into sixteen main product lines:

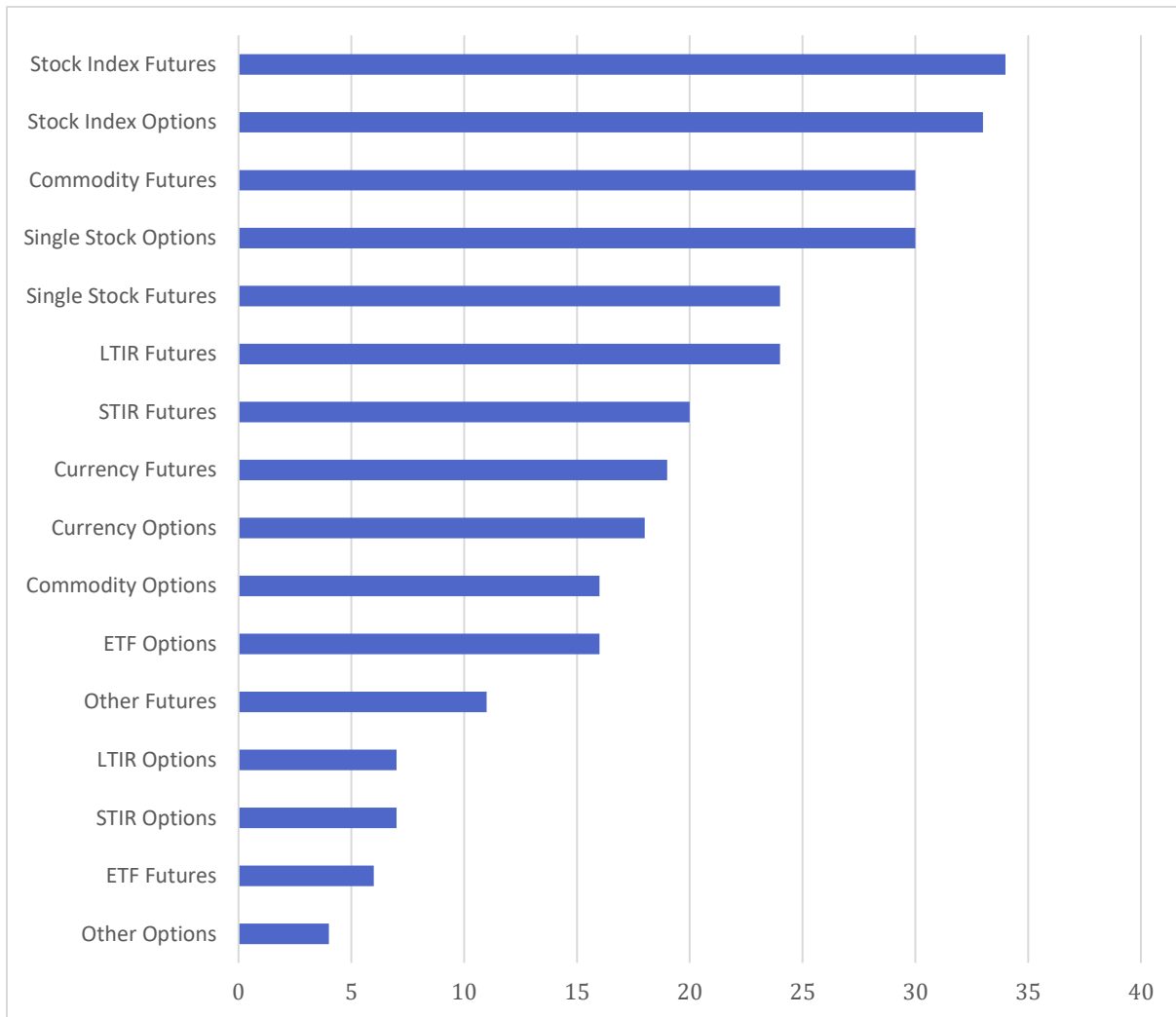
- Single Stock Options and Futures
- Stock Index Options and Futures
- Exchange Traded Funds Options and Futures
- Short-Term Interest Rate (STIR) Options and Futures
- Long-Term Interest Rate (LTIR) Options and Futures
- Currency Options and Futures
- Commodity Options and Futures
- Other Options and 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 6.3 and 6 products per exchange respectively. The Johannesburg Stock Exchange (JSE), which has 15 product lines, still has the largest number of product lines. There are six exchanges with only one product line.

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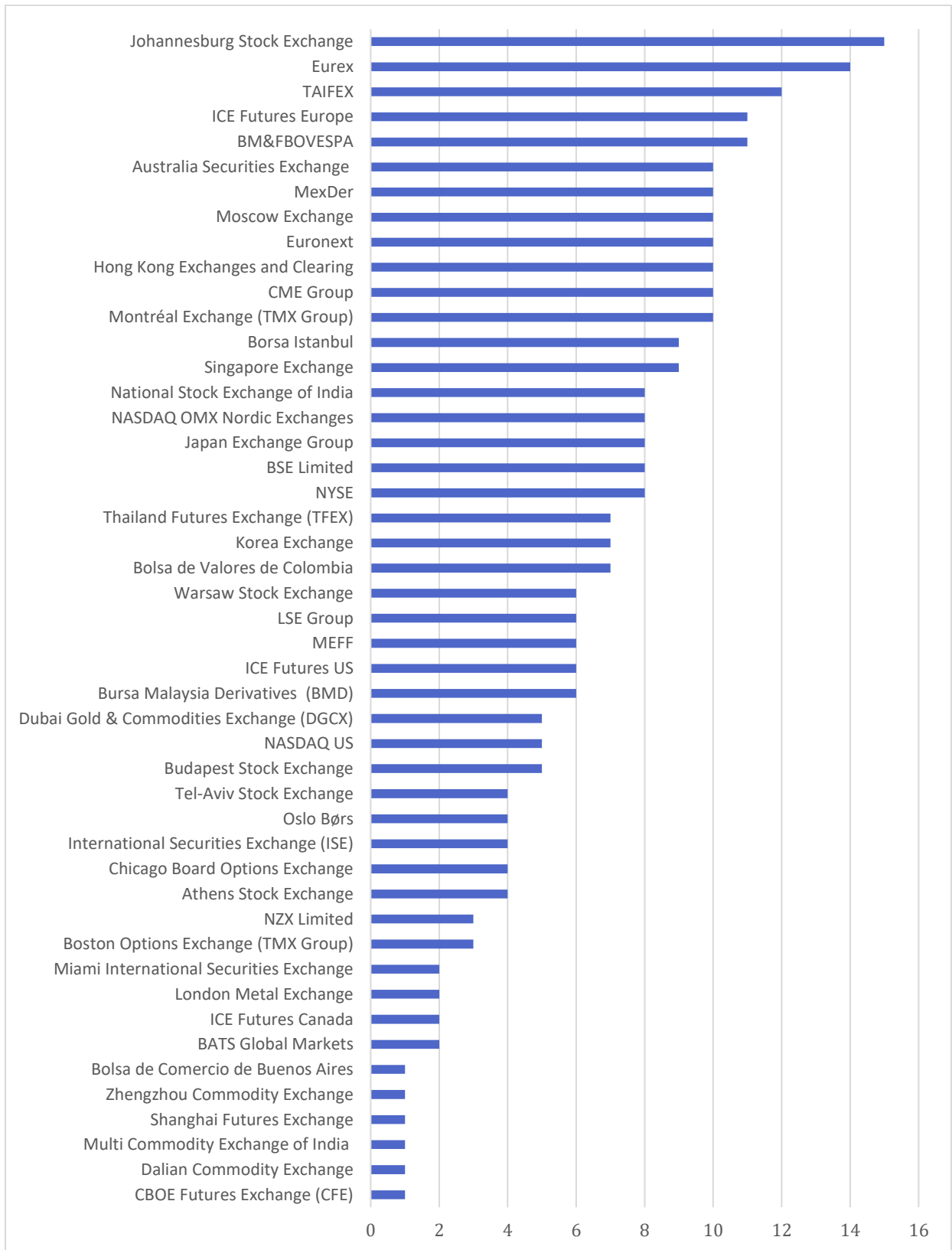
<sup>1</sup> Many newer, smaller regulated exchanges choose to become WFE Affiliates. The WFE Office requires that the regulatory authority of the applicant is already a member of IOSCO. However, Affiliate status does not imply fulfilment of WFE membership criteria and, unlike membership, is not subject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

**Number of trading venues by product line in 2016<sup>2</sup>**



<sup>2</sup> This table shows the number of trading venues that provide the various product lines. We do not have data for all products across all venues and there is therefore not a perfect match between the values in this chart and the values that would be derived if one were reconstructing this using the data tables.

**Number of product lines per exchange in 2016**



## 4 THE GLOBAL EXCHANGE TRADED DERIVATIVES MARKET

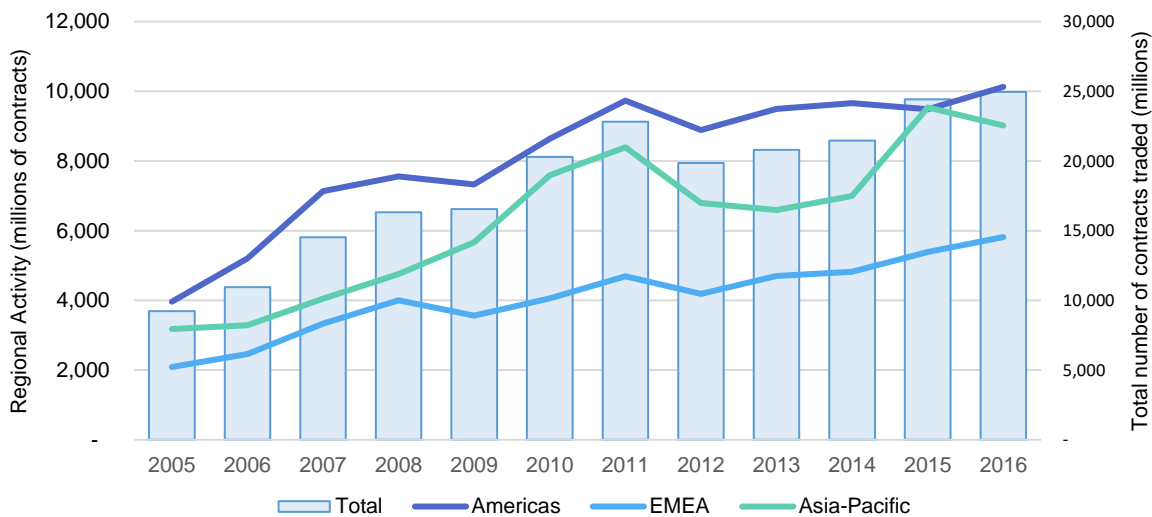
### 4.1 Volume activity

Amongst the respondent universe, there was a 2.2% increase in volumes traded on 2015, reaching a total number of 24.9 billion derivatives contracts (9.4 billion options and 15.5 billion futures) traded. Compared to 2011, which was a peak year in terms of volume traded, total volumes traded were up 9.4% representing an average annualized growth rate of 2.2% over the last five years.

Regionally, there was an increase in the volume traded in the Americas and the EMEA region (up 6.7% and 7.8% on 2015) and a decrease in the volume traded in the Asia Pacific region (down 5.5%).

There was an increase in volumes traded across all product lines except equity derivatives and other derivatives which instead saw 11% and 1.1% declines in volume traded on 2015. Commodity derivatives volumes saw the highest growth rate of 27.5% on 2015, with over 6.8 billion contracts traded in 2016. Interest rate and currency derivatives volumes traded were up 5.5% and 10.4% respectively in 2016.

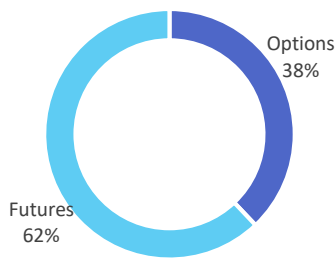
#### Total volumes of exchange traded derivative contracts over time



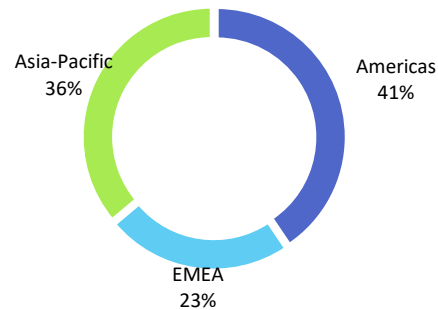
The overall growth in volumes traded was driven by the Americas (which account for 41% of total volumes traded) with increases in volume traded across stock index futures, interest rate, currency and commodity derivatives. The EMEA region (23% of the total) saw growth of 7.8% on 2015, driven by volume increases in stock index futures, interest rate and commodity derivatives. The Asia-Pacific region (36% of the total volume) however saw a 5.5% drop mainly due to the decrease in volumes of single stock derivatives and stock index derivatives.

In 2016, options accounted for 38% of the total volumes traded and futures, 62%. This is a change on 2015, when options accounted for 42% of global volumes traded. Overall, options volumes fell by 8%, while the number of futures contracts traded increased by 10% on 2015.

**Breakdown by products in 2016**



**Breakdown by regions in 2016**



## 4.2 Asset breakdown

**Equity derivatives:** Overall, equity derivatives remain the most actively traded exchange traded derivative product though for the first time<sup>3</sup> their contribution has declined to under 50% of the total volume traded, ending 2016 at 45%. Equity derivatives volumes fell by 11% in 2016 with declines experienced across almost all product lines. Single stock options were down 4.9% on 2015 while volumes traded in stock index options and futures were down 26.1% and 7.3% respectively.

Despite the decline in volumes, these were still among the most actively traded derivatives products in 2016, accounting for over 75% of all equity derivatives traded and for 34% of all exchange traded derivatives. While the EMEA and the Asia-Pacific region (which together accounted for 47.5% of the equity derivatives volumes traded) saw declines of 20.7% and 26.1% in volumes traded respectively, the Americas had a 5.5% increase in the volumes traded on 2015.

**Interest rate derivatives:** Interest rate derivative volumes, which accounted for 14% of the total derivatives volume traded in 2016, were up 5.5% on 2015, a reversal from the declines observed in 2014 and 2015.

The Americas and the EMEA region, which together account for 94% of all exchange traded interest rate contracts, experienced increases in volumes traded of 5.5% and 6.5% on 2015. Volumes in the Asia-Pacific region, which accounts for only 6% of the total volume, were up 0.4% on 2015.

**Currency derivatives:** Currency derivatives, (11% of the total derivatives volume traded) grew by 10.4% on 2015. The Americas and the Asia-Pacific regions, which together account for 61.6% of the total volume traded, saw increases in volume traded of 14% and 23.2% respectively. The EMEA region, (38.4% of the total volume traded) saw a 3.2% decline in volume traded on 2015.

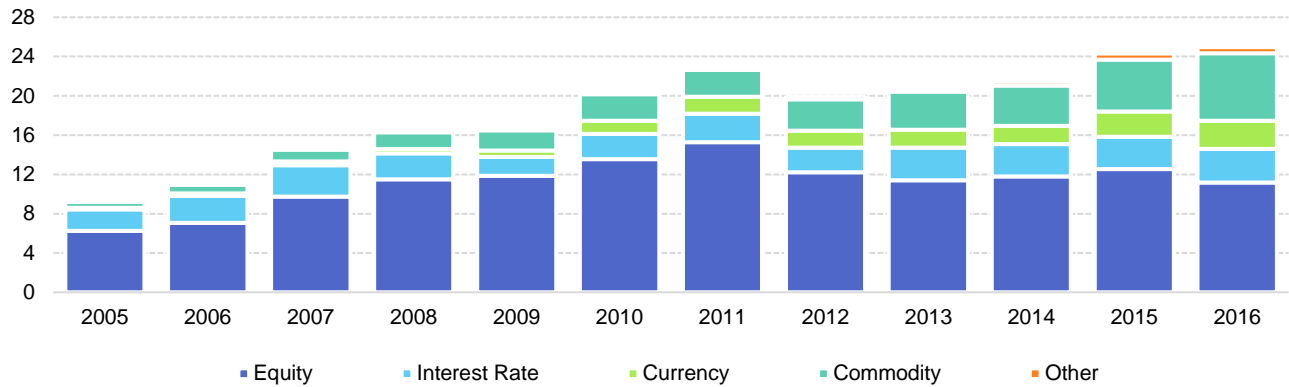
**Commodity derivatives:** Commodity derivatives volumes in 2016 were up 27.5% on 2015. Commodity futures overtook single stock options as the most actively traded contract type in 2015. This remained the case in 2016 with commodity futures accounting for 27% of the total volume traded.

The EMEA region which is responsible for 16.1% of the total commodities volume traded experienced a huge jump of 57% in the volume traded. The Asia-Pacific region (which accounts for 63.9% of commodities volume) saw a 27% increase in the volume traded while the Americas (20% of the total volume) experienced a 13% increase in the volume traded on 2015.

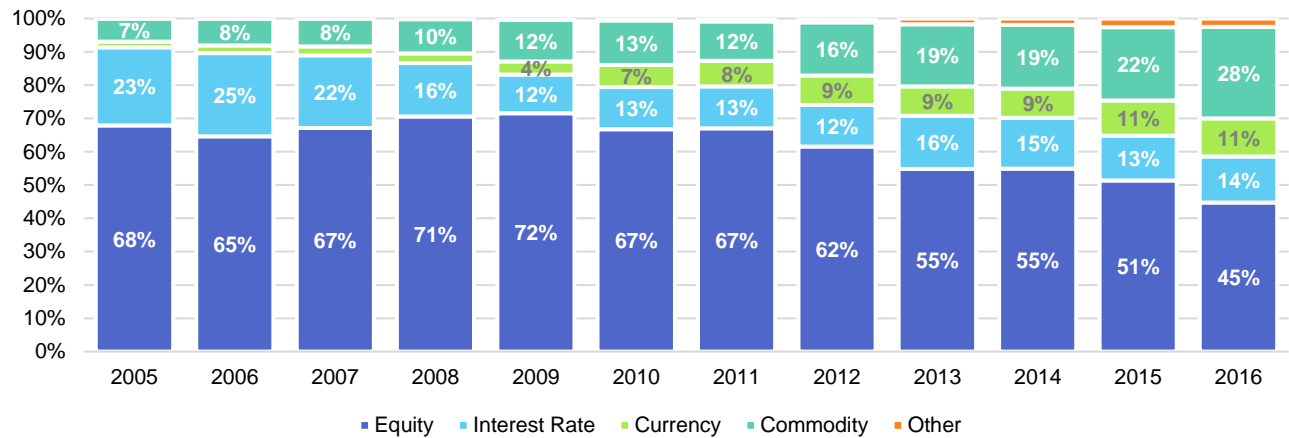
**Other derivatives:** The “other derivatives” category comprises a wide range of products, including exotic options and futures, REIT derivatives, dividend and dividend index derivatives, CFDs, inflation futures, and “can-do” futures and options. Volumes in this category dropped by 1.1% on 2015, driven by the decline in volumes traded on Johannesburg Stock Exchange and Japan Exchange Group.

<sup>3</sup> WFE data goes back to 2005. Over this period equity derivatives have always accounted for over 50% of total traded volumes.

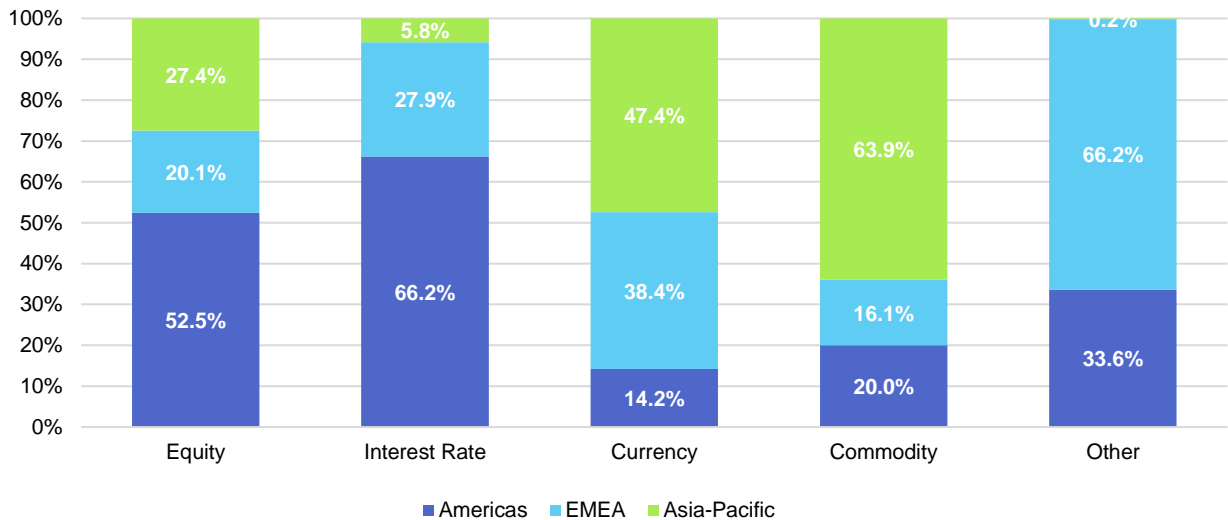
**Number of exchange-traded derivatives contracts traded worldwide (billions of contracts)<sup>4</sup>**



**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)**

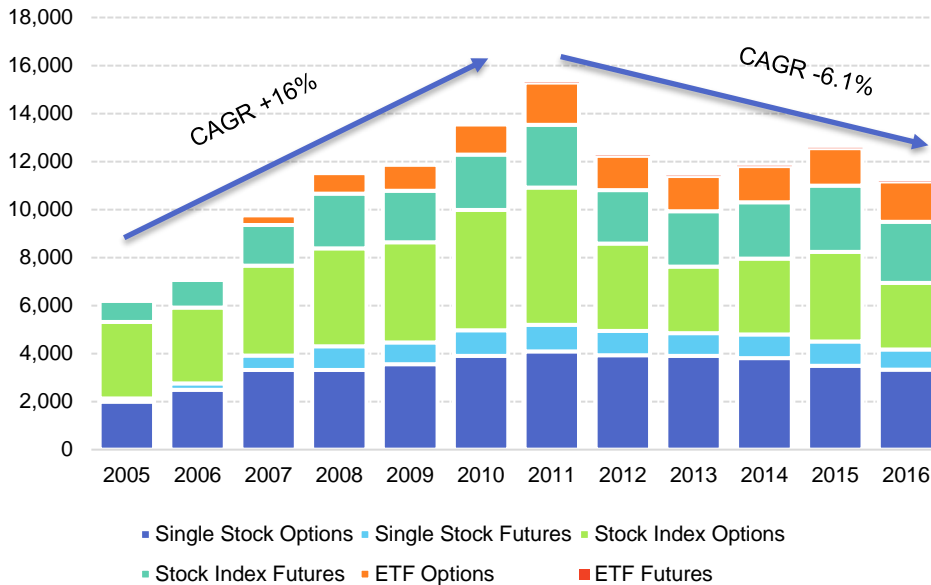
	2015	2016	% change	% of total (asset class)	% of total (overall)
Single Stock Options	3 499	3 328	-4.9%	30%	13%
Single Stock Futures	1 001	848	-15.3%	8%	3%
Stock Index Options	3 741	2 765	-26.1%	25%	11%
Stock Index Futures	2 753	2 552	-7.3%	23%	10%
ETF Options	1 557	1 671	7.3%	15%	7%
ETF Futures	2	2	0.6%	0.02%	0%
<b>Total Equity</b>	<b>12 553</b>	<b>11 167</b>	<b>-11.0%</b>		<b>45%</b>
STIR Options	341	374	9.9%	11%	2%
STIR Futures	1 339	1 390	3.8%	40%	6%
LTIR Options	227	207	-8.5%	6%	1%
LTIR Futures	1 361	1 475	8.3%	43%	6%
<b>Total Interest Rates</b>	<b>3 267</b>	<b>3 446</b>	<b>5.5%</b>		<b>14%</b>
Currency Options	467	650	39.3%	18%	3%
Currency Futures	2 115	2 199	4.0%	82%	9%
<b>Total Currency</b>	<b>2 581</b>	<b>2 850</b>	<b>10.4%</b>		<b>11%</b>
Commodity Options	238	255	-7.2%	4%	1%
Commodity Futures	5 154	6 621	28.5%	96%	27%
<b>Total Commodity</b>	<b>5 392</b>	<b>6 876</b>	<b>27.5%</b>		<b>28%</b>
Other Options	157	158	0.5%	25%	1%
Other Futures	470	462	-1.7%	75%	2%
<b>Total 'other'</b>	<b>627</b>	<b>620</b>	<b>-1.1%</b>		<b>2%</b>
<b>Grand Total</b>	<b>24 420</b>	<b>24 958</b>	<b>2.2%</b>		

## 5 EQUITY DERIVATIVES

Equity derivatives volumes peaked in 2011 and have largely declined since then. This downward trend was temporarily reversed in 2014 and 2015 though continued in 2016 with total equity derivatives volume down 11% on 2015. This decline in volumes was driven mainly by falls in volumes traded of single stock options, stock index options and stock index futures (which account for over 75% of the equity derivatives volume) of 4.9%, 26.1% and 7.3% respectively.

Only ETF derivatives (essentially ETF options) which account for about 15% of the total equity derivatives volumes, saw increases in volume traded of nearly 7%. While the share of equity derivatives in total volumes traded has been shrinking over the years, for the first time since 2005, it has dropped below 50% to 45% of the total volumes traded.

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

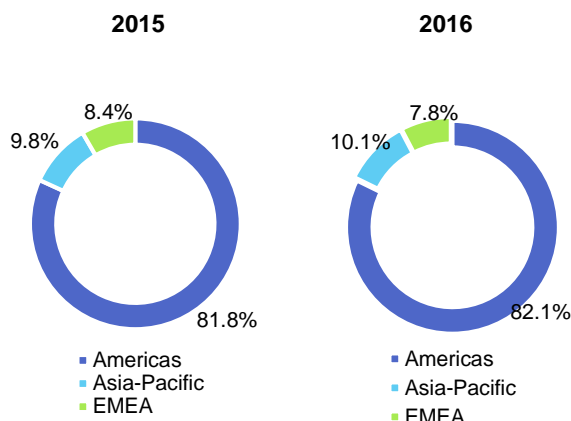


## 5.1 Single Stock Options

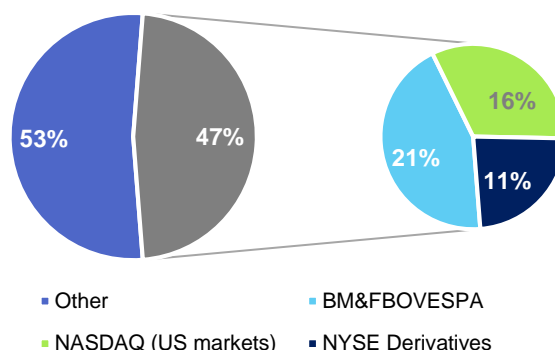
There was a 4.9% decline in the volume traded of single stock options in 2016. However, single stock options remain the second most traded derivatives product, accounting for 13% of total volume, with 3.3 billion contracts traded in 2016. The regional shares in the volume traded have changed marginally, with the Americas accounting for a major share (82.1%, a 0.3 percentage point increase on 2015) followed by the EMEA region and the Asia Pacific region accounting for 10.1% (a 0.3 percentage point increase on 2015) and 7.8% (a 0.6 percentage point decline on 2015) of the volume traded respectively. All the three regions saw a decline in number of contracts traded with the Americas in particular experiencing a 4.5% drop in volumes on 2015.

As in 2015, market activity was fairly concentrated with 47% of the trading occurring on three exchanges namely BM&FBOVESPA, Nasdaq – US and NYSE Derivatives and the top 5 exchanges accounting for 66% of total volume 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 2016**

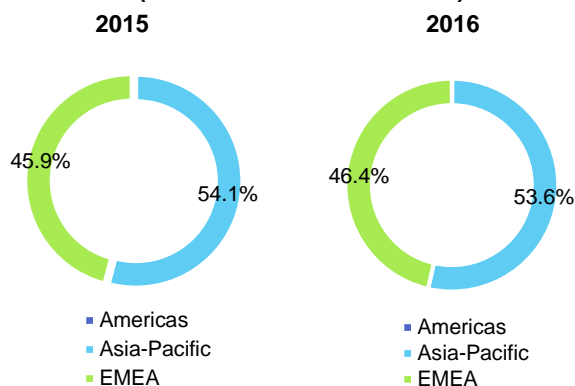
		Volume		Notional Value		Open interest	
		2016	AGR	2016	AGR	2016	AGR
1	BM&FBOVESPA	692 006 943	11%	329 060	47%	17 310 200	97%
2	NASDAQ (US markets)	512 237 363	-13%	NA	NA	NA	NA
3	NYSE Derivatives	368 820 227	-11%	NA	NA	NA	NA
4	Chicago Board Options Exchange	364 374 899	-7%	NA	NA	NA	NA
5	International Securities Exchange (ISE)	268 857 090	-13%	NA	NA	NA	NA
6	BATS Global Markets	261 582 632	0%	NA	NA	NA	NA
7	Eurex	186 406 087	0%	749 013	-19%	38 173 800	10%
8	Miami International Securities Exchange	131 845 029	-11%	NA	NA	NA	NA
9	National Stock Exchange of India	88 815 026	-15%	785 956	57%	152 141	-66%
10	Australian Securities Exchange	85 174 090	-10%	140 489	-18%	7 619 410	-9%
	Other	367 627 904	-1%	2 737 058	-21%	38 109 634	2%
	<b>Total</b>	<b>3 327 747 289</b>	<b>-5%</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>

## 5.2 Single Stock Futures

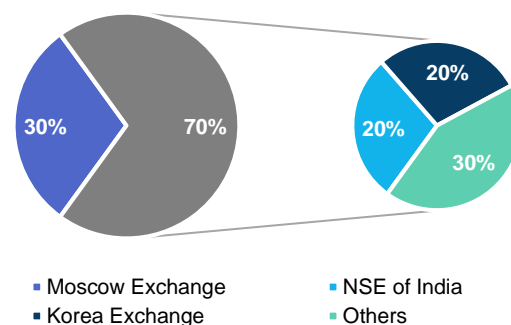
When compared to 2015, single stock futures volumes fell by 15.3% in 2016. They remain the least traded equity derivative product after ETF futures, with total volumes less than 1 billion contracts. The overall decline in volumes was driven by both the Asia-Pacific region and the EMEA region which saw a drop in volumes traded of 14.3% and 16.2% respectively on 2015.

The market is highly concentrated with three exchanges – Moscow Exchange, Korea Exchange and National Stock Exchange of India - accounting for 70% of total contracts traded in 2016. Declines in the Asia-Pacific region were driven by the National Stock Exchange of India while in the EMEA region, Moscow Exchange, Eurex and ICE Futures Europe saw a sharp fall in volume traded in 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 2016

		Volume		Notional Value		Open interest	
		2016	AGR	2016	AGR	2016	AGR
1	Moscow Exchange	254 711 570	-17%	58 034	39%	1 405 840	28%
2	National Stock Exchange of India	172 712 809	-33%	1 468 837	22%	1 102 410	-25%
3	Korea Exchange	172 120 372	7%	NA	NA	1 157 668	-10%
4	Eurex	101 032 613	-18%	301 275	-49%	2 652 200	3%
5	ICE Futures Europe	41 588 273	-33%	2 913 311	5%	1 013 070	-26%
6	Thailand Futures Exchange (TFEX)	33 826 624	72%	NA	NA	1 589 460	158%
7	Johannesburg Stock Exchange	16 186 892	0%	13 101	6%	884 057	-18%
8	Athens Stock Exchange	14 496 353	17%	1 190	-6%	317 780	58%
9	TAIFEX	9 954 514	-30%	50 386	-35%	101 317	-8%
10	MEFF	9 835 839	-5%	NA	%	780 441	9%
	Others	21 692 391	20%	15 383	-6%	1 625 395	-24%
	<b>Total</b>	<b>848 158 250</b>	<b>-15%</b>	<b>NA</b>	<b>NA</b>	<b>12 629 638</b>	<b>-0.3%</b>

### Top 10 single stock futures contracts traded in 2016

	Contract Name	Size	Exchange	Volume	
				2016	AGR
1	Sberbank ordinary shares	NA	Moscow Exchange	173 532 759	-18%
2	Gazprom ordinary shares	NA	Moscow Exchange	47 038 818	-8%
3	BANCO SANTANDER SA	NA	Eurex	20 977 764	387%
4	VTB ordinary shares	NA	Moscow Exchange	11 359 521	-34%
5	Lukoil ordinary shares	NA	Moscow Exchange	7 764 630	-26%
6	Sberbank preferred shares	NA	Moscow Exchange	7 461 290	-24%
7	SBIN	NA	NSE of India	6 662 855	-21%
8	SANTANDER	100 shares	MEFF	5 895 689	37%
9	BANCO BILBAO VIZ. ARG.	NA	Eurex	5 492 398	-35%
10	ICICIBANK	NA	NSE of India	5 044 260	-22%

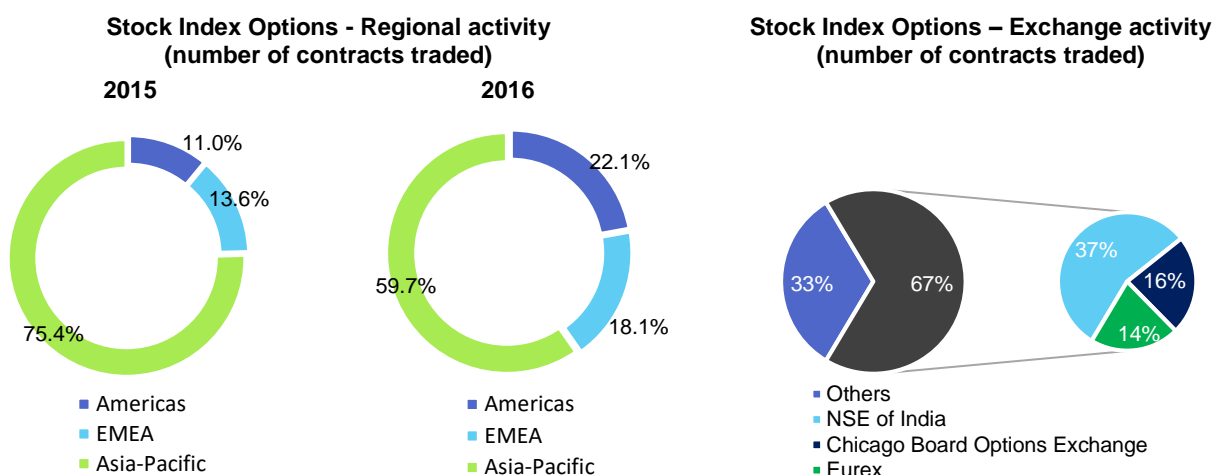
### 5.3 Stock Index Options

Stock index options contracts traded fell from 3.7 billion contracts in 2015 to 2.7 billion contracts in 2016. They account for 25% of the equity derivatives volume traded.

Volume traded in the Americas went up 49%, thereby increasing the market share of the Americas to 22.1%. The Asia-Pacific region saw a sharp fall in volume traded of 41%, which led to a drop in the regional market share from 75.4% to 59.7%. There was a 1% decrease in the volumes traded in the EMEA region taking its market share to 18.1%.

Three exchanges account for 67% of the total volume traded, with the National Stock Exchange of India and the Korea Exchange from the Asia-Pacific region making up 50% of the total volume traded.

The top 5 contracts traded accounted for 64% of total volume traded in 2016. Some of the most actively traded contracts, namely NIFTY, KOSPI 200 and TAIEX options, were down 59%, 30% and 13% respectively on volumes traded in 2015 while in the Americas, the S&P 500 Index options and the E-mini S&P 500 index options were up 9% and 86% respectively.



#### Top 10 exchanges by number of stock index options contracts traded in 2016

Exchange	Volume		Notional Value		Open interest	
	2016	AGR	2016	AGR	2016	AGR
1 National Stock Exchange of India	1 034 997 570	-45%	9 637 063	35%	1 742 600	-34%
2 Chicago Board Options Exchange	433 316 741	64%	NA	NA	0	NA
3 Eurex	388 839 391	-3%	13 369 947	-22%	34 457 400	21%
4 Korea Exchange	359 036 315	-26%	34 474 994	-33%	1 284 700	20%
5 TAIEX	167 732 568	-13%	2 261 601	-13%	813 785	8%
6 CME Group	160 368 404	14%	22 135 100	16%	3 970 180	17%
7 Tel-Aviv Stock Exchange	37 708 688	-21%	NA	NA	NA	NA
8 Japan Exchange Group	34 166 274	-11%	NA	NA	1 967 820	9%
9 Moscow Exchange	30 798 206	55%	56 484	106%	1 543 490	112%
10 Hong Kong Exchanges and Clearing	30 468 429	27%	2 478 793	21%	2 343 150	29%
Others	87 776 651	-63%	5 332 485	103%	6 288 182	-9%
<b>Total</b>	<b>2 765 209 237</b>	<b>-26%</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>

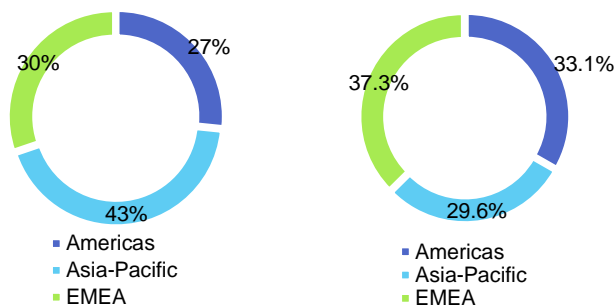
### Top 10 Stock index options contracts traded in 2016

	Contract Name	Size	Exchange	Volume 2016		Notional Value 2016		Open interest 2016	
					AGR		AGR		AGR
1	NIFTY	NA	NSE of India	715 273 610	-59%	6 371 448	2%	NA	NA
2	KOSPI 200	100	KRX	337 007 133	-30%	68 949 911	35%	NA	NA
3	BANKNIFTY	NA	NSE of India	319 723 806	150%	3 265 617	261%	NA	NA
4	EURO STOXX 50	100	Eurex	286 246 506	-5%	8 676 715	-20%	28 313 561	18%
5	S&P 500 Index	Index Point* NTD 50	CBOE Holdings	257 953 004	9%	54 032 160	11%	12 950 501	18%
6	TAIEX Options	NA	TAIFEX	167 342 279	-13%	2 258 172	-13%	807 916	8%
7	E-MINI S&P500	100	CME Group	144 526 438	86%	15 082 900	NA	3 453 613	NA
8	TA-25 Index	NA	TASE	37 749 856	-21%	NA	NA	215 641	-20%
9	Nikkei 225	NA	JPX (Osaka)	34 020 078	-10%	NA	NA	1 921 179	8%
10	RTS Index	NA	MOEX	28 475 325	53%	55 725	109%	1 539 002	114%

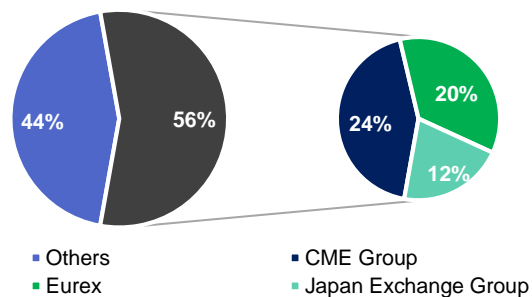
## 5.4 Stock Index Futures

Stock index futures volumes fell by 7.3% in 2016 to 2.5 billion contracts traded. The Asia-Pacific region which accounts for 29.6% of the total volume traded saw a sharp fall of 36% in the total number of contracts traded. The Americas and the EMEA region which account for the remaining 70.4% of the contracts traded saw increases of 15% and 14% respectively in volume traded. The total volume traded is fairly evenly distributed across the regions. The top 3 exchanges account for 56% of the total volume traded.

**Stock Index Futures - Regional activity  
(number of contracts traded)**  
2015                      2016



**Stock Index Futures – Exchange activity  
(number of contracts traded)**



**Top 10 exchanges by number of stock index futures contracts traded in 2016**

	Exchange	Volume		Notional Value		Open interest	
		2016	AGR	2016	AGR	2016	AGR
1	CME Group	609 691 636	8%	62 128 100	9%	3 523 180	9%
2	Eurex	498 173 245	16%	21 196 378	-10%	6 114 090	9%
3	Japan Exchange Group	293 749 363	-6%	9 983 243	-12%	1 836 840	12%
4	Moscow Exchange	236 104 126	21%	429 876	55%	613 064	28%
5	BM&FBOVESPA	170 157 338	51%	835 305	58%	401 046	1%
6	Singapore Exchange	142 186 086	-14%	NA	NA	1 485 440	9%
7	Hong Kong Exchanges and Clearing	82 693 876	15%	6 798 090	24%	459 024	-7%
8	National Stock Exchange of India	74 873 789	-55%	662 515	-6%	295 421	-32%
9	TAIFEX	60 595 256	7%	2 245 515	4%	140 911	41%
10	ICE Futures US	58 606 763	22%	4 686 750	9%	1 488 260	37%
	Others	2 226 831 478	252%	108 965 772	40%	16 357 276	316%
	<b>Grand Total</b>	<b>2 552 352 215</b>	<b>-7%</b>	NA	NA	NA	NA

**Top 10 stock index futures contracts traded in 2016**

	Contract Name	Size	Exchange	Volume		Notional Value		Open interest	
				2016	AGR	2016	AGR	2016	AGR
<b>1</b>	E-MINI S&P500	NA	CME Group	472 678 663	10%	49 061 541	12%	2 798 255	12%
<b>2</b>	FUT ON EURO STOXX 50	NA	Eurex	374 452 071	10%	11 730 266	-8%	3 443 699	-8%
<b>3</b>	Nikkei 225 mini	JPY 100	JPX (Osaka Exchange)	233 940 373	-5%	3 371 193	-14%	579 972	57%
<b>4</b>	RTS Index	NA	Moscow Exchange	205 713 143	12%	406 756	53%	556 514	21%
<b>5</b>	FTSE China A50 Index	US\$1 x SGX FTSE China A50 Index Futures Price	Singapore Exchange Ltd.	70 107 740	-27%	NA	NA	592 916	7%
<b>6</b>	E-MINI NASDAQ 100	NA	CME Group	65 750 022	-2%	5 940 384	NA	225 653	-28%
<b>7</b>	NIFTY	NA	NSE of India	48 552 800	-62%	431 359	-4%	NA	NA
<b>8</b>	F_XU030	100 (BIST 30 Price Index) is the 1/1000 of the index values)	Borsa Istanbul	46 113 549	-1%	124 645	-21%	413 725	26%
<b>9</b>	MINI \$5 DOW	NA	CME Group	42 555 855	5%	3 762 561	7%	137 544	72%
<b>10</b>	OMX STOCKHOLM 30	Index value x 100	Nasdaq Nordic	39 994 545	1%	NA	NA	486 776	5%



## 5.5 ETF Derivatives

ETF derivatives volumes grew 7% in 2016, driven by the growth of ETF options volumes, which account for more than 99% of traded volume, reaching 1.6 billion contracts.

The ETF derivatives market remains dominated by the Americas, with the nine largest exchanges (representing 99% of global volumes) in the region. Volumes traded for this region were up 7.6% on 2015.

### Top 10 exchanges by number of ETF options and futures contracts traded in 2016

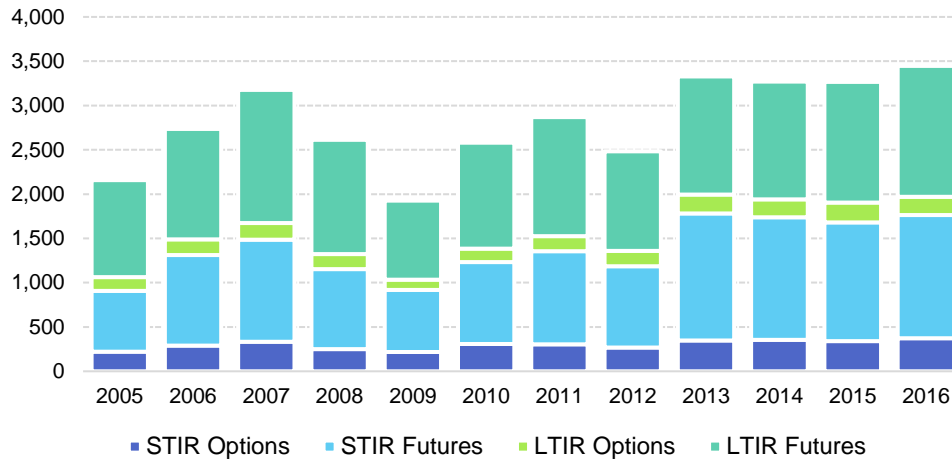
Exchange	Volume		Notional Value		Open interest	
	2016	AGR	2016	AGR	2016	AGR
1 NASDAQ (US markets)	381 040 628	8%	NA	NA	NA	NA
2 Chicago Board Options Exchange	326 683 968	2%	NA	NA	NA	NA
3 NYSE Derivatives	316 462 583	8%	48 873	-1%	NA	NA
4 International Securities Exchange (ISE)	283 223 551	-1%	NA	NA	NA	NA
5 BATS Global Markets	186 860 476	38%	NA	NA	NA	NA
6 Miami International Securities Exchange	115 267 450	10%	NA	NA	NA	NA
7 Boston Options Exchange (TMX Group)	41 356 496	3%	NA	NA	NA	NA
8 Montréal Exchange (TMX Group)	11 724 768	34%	14 125	7%	1 745 250	77%
9 BM&FBOVESPA	4 269 833	-11%	585 976	NA	36 850	-93%
10 Hong Kong Exchanges and Clearing	3 540 929	-57%	24 729	-61%	251 083	4%
Others	2 979 228	40%	19 973	61%	78 556	-0.3%
<b>Grand Total</b>	<b>1 673 409 910</b>	<b>7%</b>	NA	NA	NA	NA

## 6 INTEREST RATE DERIVATIVES

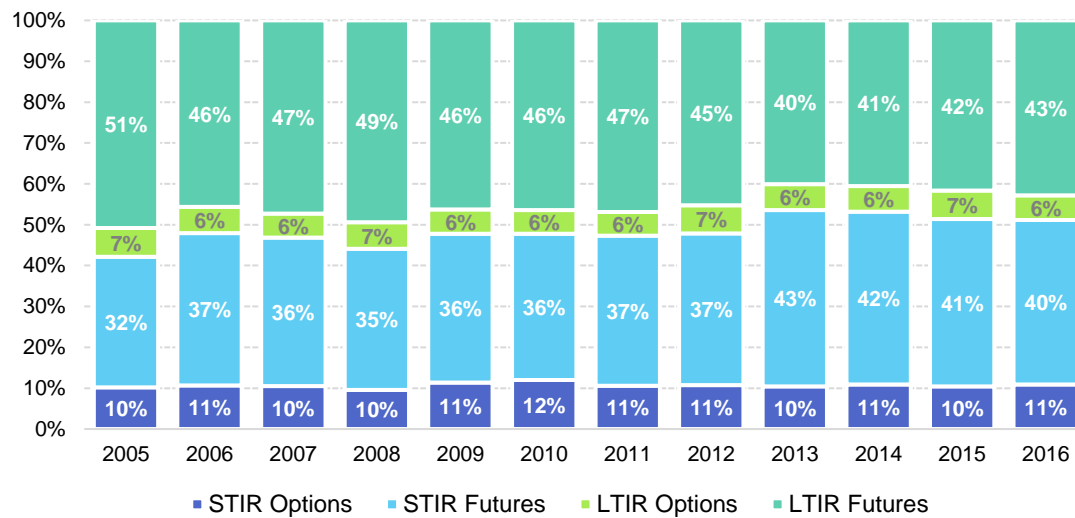
The volume traded in interest rate (IR) derivatives contracts was up 5.5% in 2016 with over 3.4 billion contracts traded. The Americas, which accounted for the 66% of the total volumes traded, drove the trend with a 5.5% increase on 2015. The EMEA and the Asia-Pacific regions which accounted for 28% and 6% of the total volume traded also saw increases in volumes of 6.5% and 0.4% on 2015.

LTIR futures and STIR futures together accounted for 83% of total volume of interest rate derivatives traded.

**Number of interest rate ETD traded worldwide (millions of contracts)**

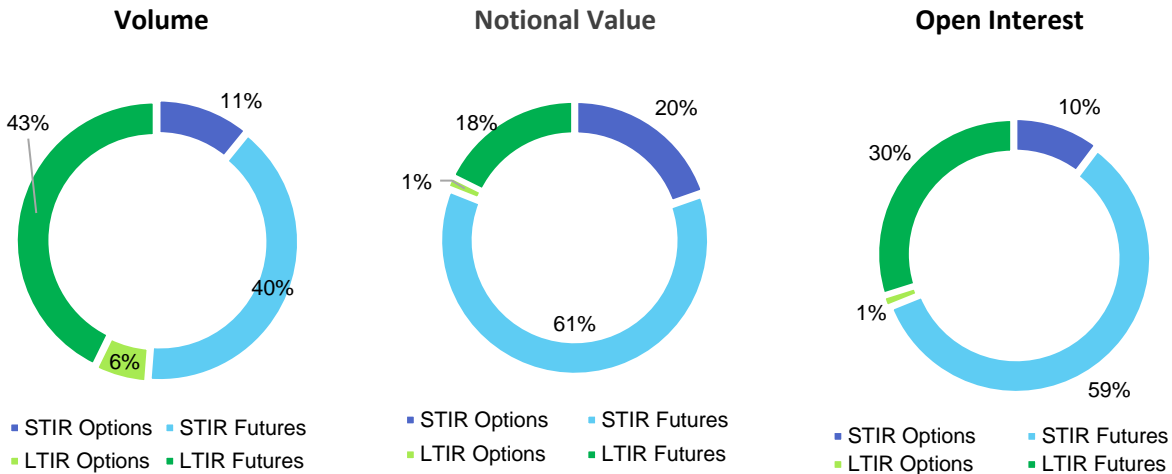


**Product composition over time by number of contracts traded**



The interest rate derivatives market remains highly concentrated, with the top three exchanges - CME Group, Eurex, and ICE Futures Europe - representing 82% of total IR contracts traded in 2016. CME Group continues to account for the highest share of volume traded (55%), followed by Eurex (15%) and ICE Futures Europe (12%).

2016 breakdown of Interest Rate product group by...



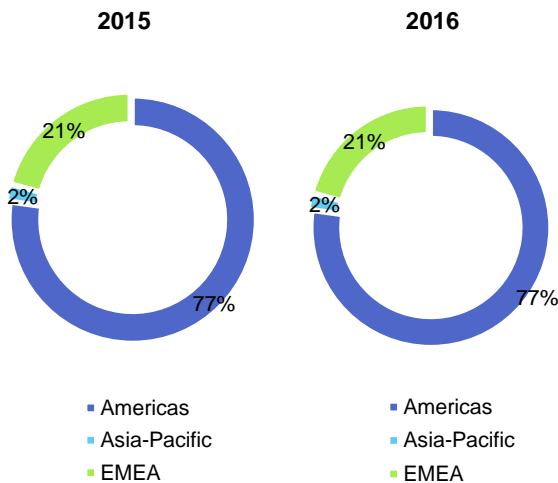
### 5.6 STIR Options and Futures

STIR derivatives volumes increased by 5% in 2016 to total 1.7 billion contracts traded. Volumes for both STIR options (21% of total STIR derivatives volumes) and STIR futures (79% of total STIR derivatives volume) were up on 2015 (11% and 40% respectively). All the regions saw a growth in volumes of STIR derivatives, with volumes traded in the Americas, EMEA and the Asia-Pacific region up 5.1%, 5.2% and 2.3% respectively.

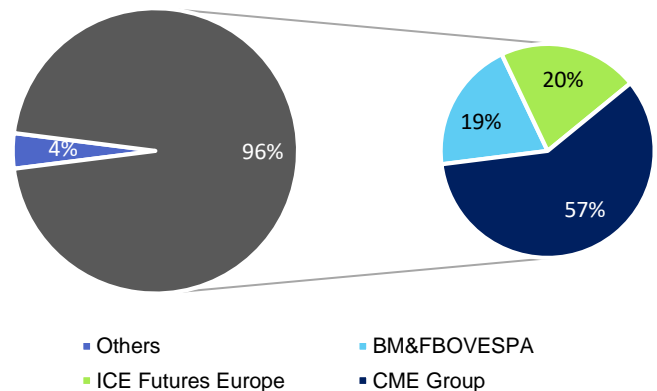
Three exchanges accounted for nearly 96% of the STIR derivatives volume traded in 2016, with CME Group and ICE Futures Europe driving the increase in volumes of contracts traded. The bulk of the activity (93%) was concentrated in the top five contracts.

Some of the fastest growing and most actively traded contracts globally were the Eurodollar options (up 12%) and futures (up 50%) contracts, the Euro Midcurve options (up 7%) and the Fed Fund futures (up 64%). In the EMEA region, ICE Futures Europe's Three Month Sterling future and the Three Month Euribor futures were the most actively traded contracts. ASX's 90 Days Bank Accepted Bills futures was 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 2016**

	Exchange	Volume		Notional Value		Open interest	
		2016	AGR	2016	AGR	2016	AGR
1	CME Group	997 144 436	17%	1 130 571 826	21%	45 961 486	24%
2	ICE Futures Europe	358 235 728	7%	290 993 939	269%	13 324 758	-39%
3	BM&FBOVESPA	337 490 505	-19%	10 769 075	14%	265 740 649	948%
4	Australian Securities Exchange	35 373 406	2%	30 915 184	4%	1 331 103	7%
5	Montréal Exchange (TMX Group)	26 999 784	21%	20 093 610	25%	1 187 628	76%
6	NASDAQ OMX Nordic Exchanges	7 978 004	-34%	861 546	9%	1 382 450	0%
7	MexDer	545 100	-90%	2 623	-92%	582 696	-56%
8	Eurex	179 550	-85%	47 364	-85%	1 616 480	404%
9	Johannesburg Stock Exchange	40 091	34%	68	49%	1 000	-50%
10	Bolsa de Valores de Colombia	29 775	390%	5 006	419%	15 706	179%
	Others	10 659	214%	313	-27%	6 732	4 709%
	<b>Grand Total</b>	<b>1 764 027 038</b>	<b>5%</b>	<b>1 484 260 613</b>	<b>39%</b>	<b>331 150 688</b>	<b>270%</b>

**Top 10 STIR contracts traded in 2016**

	Contract Name	Size	Exchange	Volume		Notional Value		Open interest	
				2016	AGR	2016	AGR	2016	AGR
1	EURODOLLARS futures	NA	CME Group	654 947 336	12%	654 947 336	12%	11 148 055	8%
2	ID futures	BRL 100,000	BM&FBOVESPA	302 518 177	-2%	7 474 689	15%	213 374 656	1200%
3	EURODOLLARS options	NA	CME Group	168 254 035	50%	168 254 035	246%	19 592 586	NA
4	3 Month Sterling Future	NA	ICE Futures Europe	153 940 833	5%	98 244 569	NA	NA	NA
5	EURO MIDCURVE options	NA	CME Group	140 529 194	7%	140 340 474	NA	14 230 230	NA
6	3 Month Euribor Future	NA	ICE Futures Europe	134 881 365	23%	141 965 291	NA	NA	NA
7	FED FUND futures	NA	CME Group	33 299 445	64%	166 497 225	64%	971 963	NA
8	ID x U.S. Dollar FRA	USD 50,000	BM&FBOVESPA	30 174 010	55%	3 114 957	9%	2 191 069	NA
9	IR futures (90 day TBill)	A\$1,000,000	ASX24	29 899 739	13%	21 547 808	NA	1 032 234	NA
10	3 Month Sterling Option	NA	ICE Futures Europe	27 132 950	NA	17 200 817	NA	NA	NA

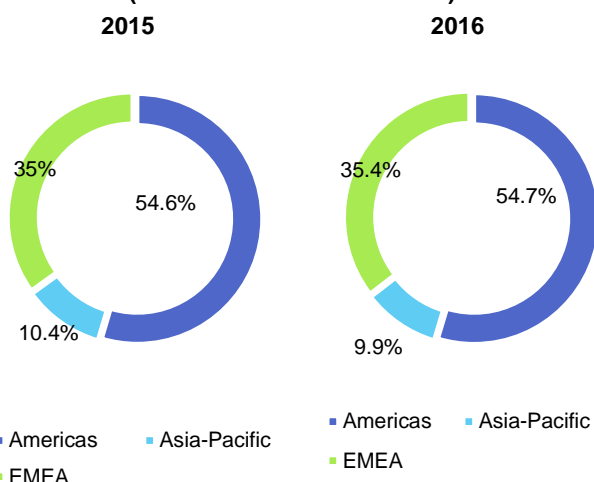
## 5.7 LTIR Options and Futures

LTIR contract volumes were up 5.9% in 2016, reaching 1.68 billion contracts traded. LTIR futures contracts remained the primary contract type traded (88% of the total), with over 1.4 billion contracts traded in 2016. While there was a 6.1% and 7.4% increase in LTIR derivatives volumes traded in the Americas and the EMEA region respectively, the volumes in the Asia-Pacific region remained almost unchanged.

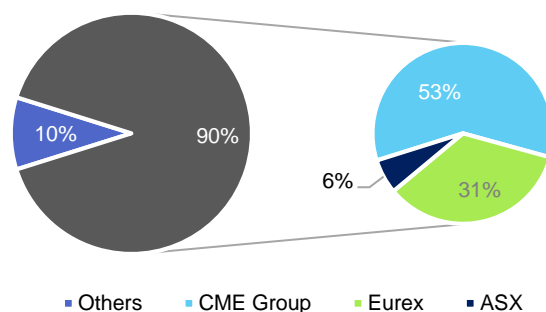
Three exchanges, one from each region were responsible for over 90% of the contracts traded and drove the increase in volumes of contracts traded. The top 5 contracts accounted for 64.5% of the total volume traded.

The contracts with the highest volumes traded were the 5 year and 10-year Treasury Note futures in the Americas, and the Euro Bund futures in the EMEA region. The 3 year and 10 year Treasury bond futures traded on ASX24 remained the most actively traded contracts 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 2016**

Exchange	Volume		Notional Value		Open interest	
	2016	AGR	2016	AGR	2016	AGR
1 CME Group	897 049 242	6%	97 498 712	5%	95 238 539	906%
2 Eurex	526 379 512	4%	80 051 519	3%	7 428 148	44%
3 Australian Securities Exchange	93 976 347	13%	6 752 148	13%	1 802 631	21%
4 ICE Futures Europe	53 765 296	57%	6 885 345	328%	617 965	-10%
5 Korea Exchange	38 824 185	3%	3 789 044	210%	266 096	-19%
6 Montréal Exchange	21 089 633	17%	NA	NA	439 695	3%
7 NSE of India	15 281 634	-46%	46 124	-48%	42 350 746	13577%
8 Johannesburg Stock Exchange	9 372 917	66%	71 590	80%	835 507	14%
9 CFFEX	8 934 012	47%	NA	NA	80 298	37%
10 Japan Exchange Group	8 348 355	-15%	NA	NA	90 902	-15%
Others	9 004 547	-4%	152 576 550	47269%	323 720	-19%
<b>Grand Total</b>	<b>1 682 025 680</b>	<b>6%</b>	<b>NA</b>	<b>NA</b>	<b>149 474 247</b>	<b>681%</b>

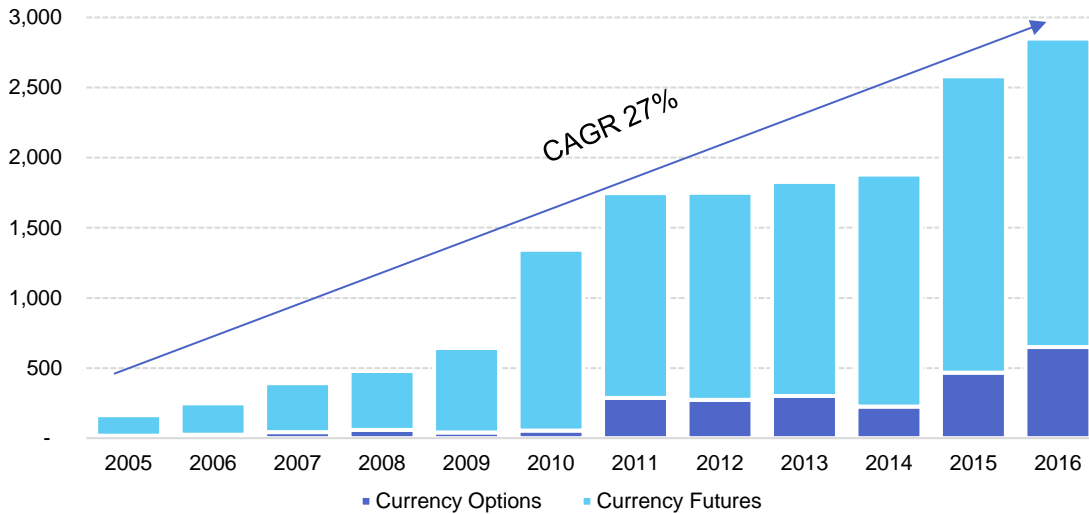
**Top 10 LTIR contracts traded in 2016**

	Contract Name	Size	Exchange	Volume		Notional Value		Open interest	
				2016	AGR	2016	AGR	2016	AGR
1	10-YR NOTE futures	NA	CME Group	350 762 158	7%	35 076 216	7%	5 304 161	22%
2	5-YR NOTE futures	NA	CME Group	201 904 771	6%	20 190 477	6%	4 002 384	28%
3	FUT 8 1/2-10 1/2 Y.GOV.BOND 6%	NA	Eurex	186 605 222	5%	32 156 904	7%	1 585 454	44%
4	FUT 4 1/2-5 1/2Y.GOV.BONDS 6%	NA	Eurex	130 646 615	10%	18 162 618	8%	1 252 273	40%
5	10-YR NOTE options	NA	CME Group	98 504 626	1%	9 850 463	NA	994 885	NA
6	2-YR NOTE futures	NA	CME Group	81 874 197	-1%	16 374 839	-1%	1 171 637	11%
7	FUT 1 3/4-2 1/4 Y.GOV.BONDS 6%	NA	Eurex	73 604 636	5%	8 675 059	1%	1 250 461	23%
8	30-YR BOND futures	NA	CME Group	70 203 290	NA	7 020 329	NA	NA	NA
9	Long Gilt Future	A\$100,000	ICE Futures Europe	53 144 824	11%	6 822 662	NA	886 842	NA
10	3 Year Treasury Bond Futures	A\$100,000	ASX24	51 827 874	5%	3 735 073	6%	896 460	23%

## 6 CURRENCY DERIVATIVES

Currency derivatives volumes have increased significantly since 2005, with a 10.4% increase in volumes traded on 2015 (up to 2.8 billion contracts). Volumes were up for both options and futures with increases of 39.3% and 4% respectively.

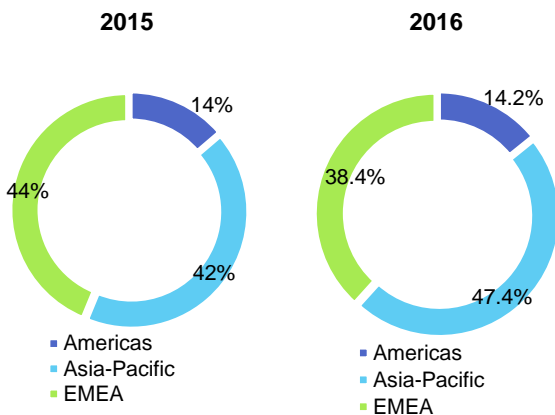
**Number of currency derivatives traded worldwide (billions of contracts)**



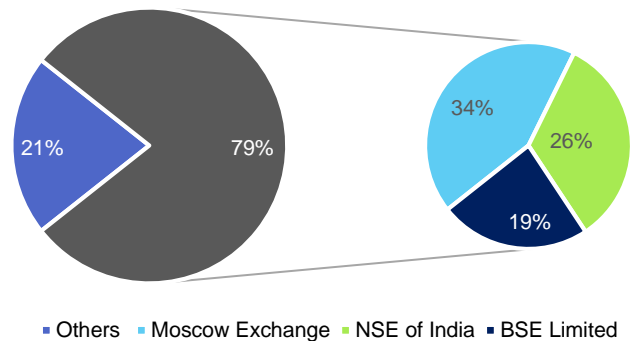
While volumes traded increased in the Americas and the Asia-Pacific region (up 14% and 23.2% respectively) the EMEA region saw a 3.2% decline. The increase in volume traded in the Asia-Pacific region was driven by increases at the National Stock Exchange of India (22%), BSE Limited (23%) and Korea Exchange (22%). BM&FBOVESPA was the key driver of growth in the Americas region with a 52% growth in volume traded. In the EMEA region, Moscow Exchange which still accounts for the majority of currency derivatives contracts traded globally experienced a 4% decrease in volumes traded in 2016.

A large share of the top most traded contracts were contracts that tracked local currency dollar exchange rates. In the Asia-Pacific region the USD/INR option (up 63% on 2015) accounted for 43% of all contracts traded globally. In the Americas, while CME group saw a decline in volumes of Euro FX futures, there was an increase in volumes of Japanese Yen future making these the second most traded contract on the exchange. Reversing the trend observed in 2015, the EUR/RUB future traded on Moscow Exchange became one of the fastest growing contracts with a 101% increase in volumes in 2016 on 2015.

**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 2016**

	Exchange	Volume		Notional Value		Open interest	
		2016	AGR	2016	AGR	2016	AGR
1	Moscow Exchange	961 622 037	-4%	1 096 650	-92%	4 859 078	-11%
2	National Stock Exchange of India	748 063 626	22%	754 221	25%	4 389 460	3%
3	BSE Limited	530 133 841	23%	502 698	21%	1 191 625	-21%
4	CME Group	215 091 017	-2%	20 928 473	-8%	2 092 258	4%
5	BM&FBOVESPA	171 278 493	52%	5 028 008	11%	4 934 357	120%
6	Korea Exchange	65 606 504	22%	632 331	21%	828 377	22%
7	Borsa Istanbul	48 724 326	27%	43 534	18%	1 198 112	112%
8	Johannesburg Stock Exchange	48 424 320	7%	53 591	36%	2 331 477	-30%
9	Dubai Gold & Commodities Exchange (DGCX)	18 432 125	34%	109 460	-69%	342 733	638%
10	Tel-Aviv Stock Exchange	13 136 366	-21%	131 812	-21%	444 534	-18%
	Others	29 230 015	-14%	864 403	-35%	1 758 899	26%
	<b>Grand Total</b>	<b>2 849 742 670</b>	<b>10%</b>	<b>30 130 706</b>	<b>-32%</b>	<b>24 370 910</b>	<b>11%</b>

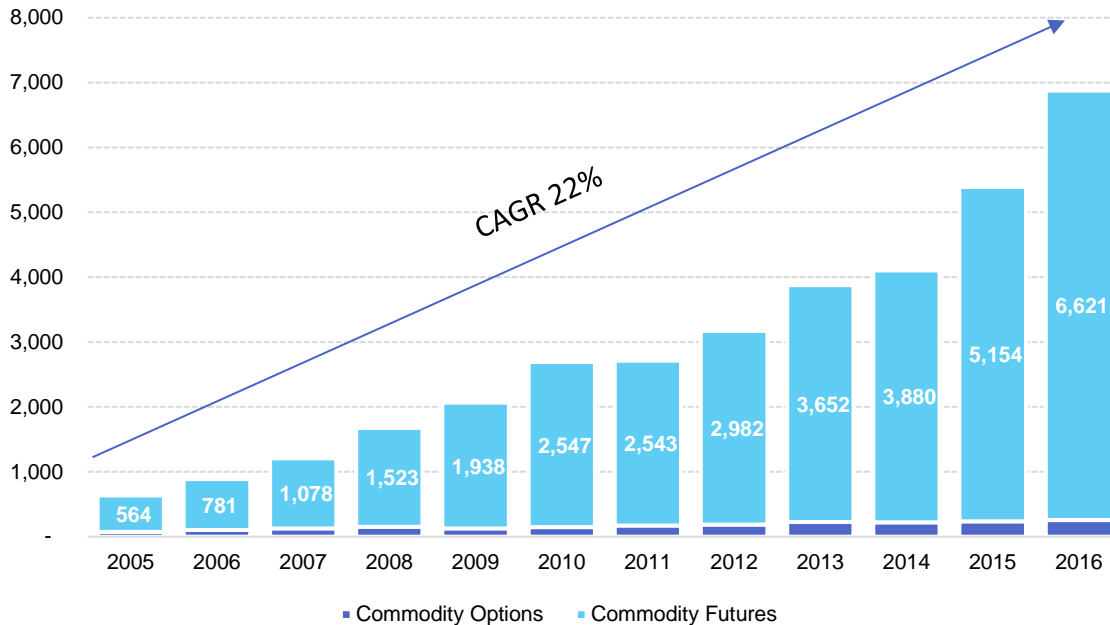
**Top 10 currency contracts traded in 2016**

	Contract Name	Size	Exchange	Volume		Notional Value		Open interest	
				2016	AGR	2016	AGR	2016	AGR
<b>1</b>	USD/RUB futures	NA	Moscow Exchange	865 068 634	-4%	980 880	26%	2 626 442	-10%
<b>2</b>	USDINR Options	NA	NSE India Ltd	351 632 420	63%	351 609	66%	NA	NA
<b>3</b>	USDINR Futures	NA	NSE India Ltd.	351 162 981	-2%	349 620	0%	NA	NA
<b>4</b>	USDINR Futures	NA	BSE Ltd.	319 413 292	24%	NA	NA	NA	NA
<b>5</b>	USDINR Options	NA	BSE Ltd.	207 386 529	22%	NA	NA	NA	NA
<b>6</b>	Mini U.S. Dollar Futures	USD10,000	BM& FBOVESPA	92 119 754	NA	981 794	NA	508 417	NA
<b>7</b>	U.S. Dollar Futures	USD50,000	BM& FBOVESPA	71 281 293	-8%	3 832 059	16%	13 388 898	1059%
<b>8</b>	EURO FX	NA	CME Group	49 455 909	-24%	6 848 045	-32%	408 748	2%
<b>9</b>	USD Futures	NA	Korea Exchange	56 869 526	8%	54 775 617	10692%	777 433	27%
<b>10</b>	JAPANESE YEN futures	1,000 USD	CME Group	36 588 788	1%	4 201 948	12%	212 942	4%

## 7 COMMODITY DERIVATIVES

Commodity derivatives continued to grow, with volumes increasing by 28% in 2016. As in 2015, commodity futures were the most actively traded class of derivative contract, with over 6.8 billion contracts traded.

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



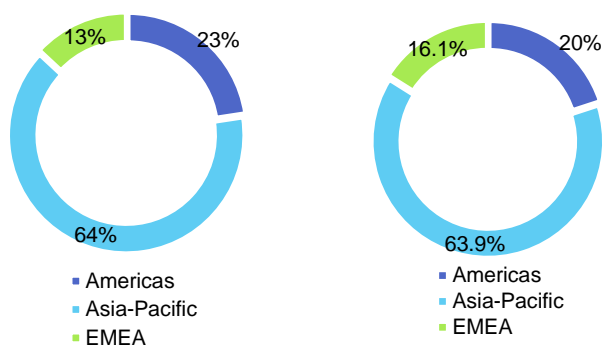
The increase in volumes was driven by increases of 27% in the Asia-Pacific region, and 57% in the EMEA region. The Americas also saw a 13% increase in volume traded in 2016.

- The growth in the Asia Pacific region was mainly driven by the 27% growth in Mainland China, dominated by the Dalian Commodity Exchange and the Shanghai Futures Exchange.
- The Americas region is dominated by CME Group and ICE Futures US which account for 99% of the regional total. Over the period, while the CME Group saw a 17% increase in volumes traded, ICE Futures US experienced a 0.4% decline in volumes.
- Growth in the EMEA region was driven by ICE Futures Europe and MEFF with growth of 16% and 4% respectively in number of commodity options and futures traded in 2015.

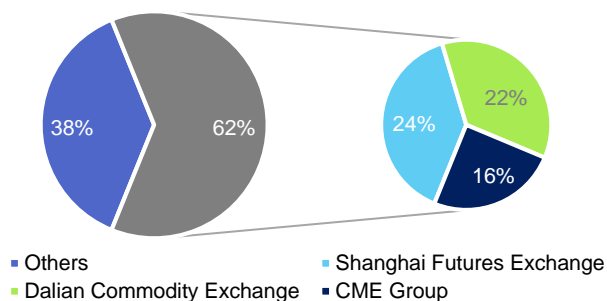
Globally, trading is concentrated in three exchanges with the Dalian Commodity Exchange, the Shanghai Futures Exchange and the CME Group accounting for over 62% of the volume traded in 2016. The most actively traded contracts were a mixture of agricultural, base metal and energy contracts.

Contracts recording the highest volumes were the Crude Oil Brent futures in the EMEA region, Steel Rebar, Soyabean Meal and Iron Ore futures in the Asia-Pacific region and Crude Oil and Natural Gas futures in the Americas. The Crude Brent Oil futures volumes across 3 exchanges accounted for 13% of total commodities derivatives volumes traded globally.

**Regional activity  
(number of contracts traded)**  
2015                      2016



**Commodity options and futures – Exchange activity  
(number of contracts traded)**



**Top 10 exchanges by number of commodity options and futures contracts traded in 2016**

Exchange	Volume		Notional Value		Open interest	
	2016	AGR	2016	AGR	2016	AGR
1 Shanghai Futures Exchange	1 680 771 301	60%	12 238 792	25%	3 768 910	-90%
2 Dalian Commodity Exchange	1 537 479 768	38%	757 515	-88%	61 405 300	1053%
3 CME Group	1 062 584 545	17%	46 434 100	13%	34 697 200	-3%
4 Zhengzhou Commodity Exchange	901 240 809	-16%	8 559 154	79%	2 696 540	9%
5 Moscow Exchange	471 384 517	282%	252 883	321%	960 664	11%
6 ICE Futures Europe	431 283 369	16%	16 126 872	-10%	12 889 460	-1%
7 ICE Futures US	303 019 500	-0.4%	NA	NA	2 806 210	-89%
8 Multi Commodity Exchange of India	245 077 515	13%	901 301	7%	259 804	-36%
9 London Metal Exchange	156 512 730	-8%	NA	NA	2 742 048	NA
10 MEFF	24 083 621	4%	NA	NA	NA	NA
Others	62 544 011	50%	10 742 270	NA	26 88 722	23%
<b>Grand Total</b>	<b>6 875 981 686</b>	<b>28%</b>	NA	NA	NA	NA

**Top 10 commodity contracts traded in 2016**

Contract Name	Exchange	Volume		Notional Value		Open interest	
		2016	AGR	2016	AGR	2016	AGR
1 Steel Rebar Futures	Shanghai Futures Exchange	934 148 409	73%	NA	NA	NA	NA
2 Futures contract on Crude Oil Brent	Moscow Exchange	439 743 945	NA	216 755	NA	450 438	NA
3 Soybean Meal	Dalian Commodity Exchange	388 949 970	34%	1 722 471	45%	1 399 033	29%
4 Iron Ore	Dalian Commodity Exchange	342 265 309	32%	2 231 227	46%	550 722	-41%
5 CRUDE OIL futures	CME Group	276 768 438	37%	12 263 810	21%	2 064 365	24%
6 Rapeseed Meal	Zhengzhou Commodity Exchange	246 267 758	-6%	831 758	-3%	436 420	29%
7 Brent Crude futures	ICE Futures Europe	210 551 475	15%	9 205 160	-9%	NA	NA
8 PTA(Pure Terephthalic Acid)	Zhengzhou Commodity Exchange	172 659 870	-25%	602 226	-30%	860 206	83%
9 Palm Oil	Dalian Commodity Exchange	139 157 899	NA	1 166 147	NA	314 047	NA
10 Methanol	Zhengzhou Commodity Exchange	136 734 721	NA	406 920	NA	289 201	NA

## 8 OTHER DERIVATIVES

“Other” derivatives volumes were down 1.1%, due to the decline in volume traded on Johannesburg Stock Exchange and Japan Exchange Group. There was a 6% decline in volume of “Can Do” options traded on the Johannesburg Stock Exchange, decreasing their share of total volume traded to 60.9%. Volatility index options and futures traded on Chicago Board Options Exchange and CBOE Futures Exchange grew by 7% compared to 2015. Other products in this category include dividend options, commodity index derivatives, equity index dividend futures, single stock dividend futures and inflation futures.

### Top exchanges by number of ‘other’ derivatives contracts traded in 2016

Exchange	Volume		Notional Value		Open interest	
	2016	AGR	2016	AGR	2016	AGR
1 Johannesburg Stock Exchange	377 590 039	-6%	11 315	27%	38 020 813	NA
2 Chicago Board Options Exchange	148 253 619	3%	241 826	0%	5 325 332	NA
3 CBOE Futures Exchange (CFE)	60 177 810	16%	952 356	11%	396 909	57%
4 Eurex	26 093 021	14%	124 116	3%	3 992 781	9%
5 ICE Futures Europe	6 087 528	8%	24 882 409	NA	21 293 870	NA
6 Hong Kong Exchanges and Clearing	606 161	182%	1 298	144%	113 733	NA
7 Japan Exchange Group	352 053	-12%	4 205	42%	35 401	57%
8 Borsa Istanbul	278 195	NA	794	NA	3 155	NA
9 Euronext	175 085	99%	4 9291	NA	262 374	NA
<b>Grand Total</b>	<b>619 613 511</b>	<b>-1.1%</b>	NA	NA	NA	NA

## 9 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)

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

Athens Exchange	Nasdaq Nordic Exchanges
Australian Securities Exchange	NASDAQ USA
Bats Global Markets	National Stock Exchange of India
BM&FBOVESPA	NYSE
Bolsa de Comercio de Buenos Aires	NZX Ltd.
Bolsa de Valores de Columbia	Oslo Børs
Borsa Istanbul	Shanghai Futures Exchange
Boston Options Exchange	Singapore Exchange
BSE Ltd.	TAIFEX
Budapest Stock Exchange	Tel Aviv Stock Exchange
Bursa Malaysia Derivatives	Thailand Futures Exchange (TFEX)
CBOE Futures exchanges (CFE)	Warsaw Stock Exchange
Chicago Board Options Exchange	Zhengzhou Commodity Exchange
China Financial Futures Exchange	
CME Group	
Dalian Commodity Exchange	
Dubai Gold & Commodities Exchange	
Eurex Exchange	
Euronext	
Hong Kong Exchanges and Clearing Ltd.	
ICE futures Canada	
ICE futures Europe	
ICE Futures US	
International Securities Exchange	
Japan Exchange Group	
Johannesburg Stock Exchange	
Korea Exchange	
London Metal Exchange	
MEFF	
Mexder	
Miami International Securities Exchange	
Montréal Exchange	
Moscow exchange	
Multi Commodity Exchange of India	

## 11 ANNEX 3 – DATA TABLES

### Single Stock Options

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
BATS Global Markets	261 582 632	261 302 080	NA	NA	NA	NA
BM&FBOVESPA	692 006 943	623 225 361	329 060	223 365	17 310 200	8 780 724
Bolsa de Comercio de Buenos Aires	39 984 964	37 984 256	NA	NA	NA	NA
Boston Options Exchange (TMX Group)	67 846 228	62 964 376	NA	NA	NA	NA
Chicago Board Options Exchange	364 374 899	392 984 619	NA	3 114 319	NA	191 962 856
International Securities Exchange (ISE)	268 857 090	309 975 778	NA	NA	NA	NA
MexDer	322 308	257 524	36	40	62 581	42 001
Miami International Securities Exchange	131 845 029	148 174 290	NA	NA	NA	NA
Montréal Exchange (TMX Group)	25 302 965	21 457 412	64 209	61 246	3 073 150	3 144 373
NASDAQ (US markets)	512 237 363	587 743 395	NA	NA	NA	NA
NYSE Derivatives	368 820 227	416 449 716	NA	94 402	NA	NA
<b>Asia-Pacific</b>						
Australian Securities Exchange	85 174 090	95 080 977	140 489	170 802	7 619 410	8 369 936
BSE Limited	126 898	7 136 887	848	32 551	NA	83
Hong Kong Exchanges and Clearing	70 074 425	84 434 323	163 114	262 966	6 076 940	4 592 279
Japan Exchange Group	845 225	825 065	NA	NA	28 641	69 179
Korea Exchange	11 564 672	742 743	NA	NA	108 478	44 587
National Stock Exchange of India	88 815 026	104 454 088	785 956	501 485	152 141	452 181
TAIFEX	289 101	178 215	593	514	3 315	8 764
<b>EMEA</b>						
Athens Stock Exchange	11 853	13 384	6	4	291	981
Borsa Istanbul	2 878 262	847 500	575	181	631 849	167 934
Eurex	186 406 087	186 407 925	749 013	922 060	38 173 800	34 607 944
Euronext	57 015 075	60 094 108	145 975	174 049	10 008 073	11 377 871
ICE Futures Europe	22 437 012	25 919 872	2 365 433	2 881 661	3 913 970	6 218 835
Johannesburg Stock Exchange	8 692 146	8 589 238	284	287	1 012 850	760 886
MEFF	22 900 619	21 420 685	17 653	21 527	9 835 839	6 417 455
Moscow Exchange	6 226 062	5 783 093	1 433	823	133 874	351 764
NASDAQ Nordic Exchanges	25 873 807	29 054 036	35 171	27 935	2 786 210	3 552 539
Oslo Børs	4 246 759	3 570 932	1 565	3 292	373 033	571 961
Tel-Aviv Stock Exchange	989 523	1 525 235	4 104	5 782	60 540	98 714
<b>Grand Total</b>	<b>3 327 747 289</b>	<b>3 498 597 113</b>				



## Single Stock Futures

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
Bolsa de Valores de Colombia	602 897	291 360	437	275	45 382	22 491
MexDer	8 750	19 252	2	5	NA	1 750
Montréal Exchange (TMX Group)	608	NA	20	NA	571	NA
<b>Asia-Pacific</b>						
Australian Securities Exchange	4 718 169	5 862 951	4 333	6 023	664 005	1 195 580
BSE Limited	3 672	139 701	35	601	16	29
Hong Kong Exchanges and Clearing	192 738	489 321	655	1 363	4 848	14 761
Korea Exchange	172 120 372	161 393 784	NA	83 040	1 157 668	1 291 635
National Stock Exchange of India	172 712 809	257 370 023	1 468 837	1 199 058	1 102 410	1 475 339
TAIFEX	9 954 514	14 319 305	50 386	77 041	101 317	109 638
Thailand Futures Exchange (TFEX)	33 826 624	19 708 113	NA	NA	1 589 460	615 012
<b>EMEA</b>						
Athens Stock Exchange	14 496 353	12 410 089	1 190	1 265	317 780	201 088
Borsa Istanbul	7 151 743	2 743 457	940	602	436 671	225 319
Budapest Stock Exchange	247 876	264 056	845	820	6 823	7 247
Dubai Gold & Commodities Exchange (DGCX)	91 491	NA	74	NA	137	NA
Eurex	101 032 613	122 898 246	301 275	594 870	2 652 200	2 581 695
Euronext	270 573	87 490	956	465	6 463	755
ICE Futures Europe	41 588 273	61 741 390	2 913 311	2 763 375	1 013 070	1 372 427
Johannesburg Stock Exchange	16 186 892	16 112 786	13 101	12 313	884 057	1 073 058
MEFF	9 835 839	10 347 670	NA	9 552	780 441	714 649
Moscow Exchange	254 711 570	306 782 671	58 034	41 747	1 405 840	1 098 752
NASDAQ OMX Nordic Exchanges	3 891 525	4 422 540	3 837	3 115	263 756	368 980
Oslo Børs	2 974 768	2 658 791	1 260	1 163	175 471	292 436
Warsaw Stock Exchange	1 537 581	1 033 300	1 991	1 900	21 252	9 014
<b>Grand Total</b>	<b>848 158 250</b>	<b>1 001 096 296</b>				

## Stock Index Options

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
BM&FBOVESPA	14 025 305	2 166 050	182 403	122 623	325 683	157 133
Chicago Board Options Exchange	433 316 741	263 813 550	NA	52 445 700	NA	12 287 874
CME Group	160 368 404	140 289 929	22 135 100	19 119 564	3 970 180	3 403 410
ICE Futures US	57 708	29 374	7 025	3 555	8 457	845
International Securities Exchange (ISE)	747 567	2 361 935	NA	NA	NA	NA
MexDer	56 413	92 938	1 214	2 323	4 814	3 767
Montréal Exchange (TMX Group)	671 466	541 961	3 922 460	2 860	40 447	90 923
NASDAQ (US markets)	2 513 798	1 606 075	NA	NA	NA	NA
<b>Asia-Pacific</b>						
Australian Securities Exchange	12 383 226	11 475 160	477 481	479 122	790 215	784 130
BSE Limited	6 550 838	172 471 071	47 916	1 103 622	NA	81
Bursa Malaysia Derivatives (BMD)	10 171	4 702	NA	41	NA	130
Hong Kong Exchanges and Clearing	30 468 429	23 898 672	2 478 793	2 052 982	2 343 150	1 822 276
Japan Exchange Group	34 166 274	38 324 847	NA	NA	1 967 820	1 797 591
Korea Exchange	359 036 315	483 597 487	34 474 994	51 222 020	1 284 700	1 072 257
National Stock Exchange of India	1 034 997 570	1 893 555 261	9 637 063	7 135 078	1 742 600	2 632 702
Singapore Exchange	6 207 176	5 750 550	NA	NA	770 123	663 284
TAIFEX	167 732 568	192 190 964	2 261 601	2 605 524	813 785	752 107
Thailand Futures Exchange (TFEX)	428 810	307 131	NA	NA	13 582	5 624
<b>EMEA</b>						
Athens Stock Exchange	61 128	94 728	132	120	2 306	3 214
Borsa Istanbul	315 783	290 856	846	974	25 686	26 017
Eurex	388 835 166	401 387 669	13 369 947	17 100 750	34 457 400	28 435 176
Euronext	10 866 435	3 100 684	501 959	714 867	445 724	570 538
ICE Futures Europe	15 918 533	16 834 003	22 271	22 669	2 114 610	2 853 948
Johannesburg Stock Exchange	4 323 258	2 794 556	3 025	1 394	824 324	474 572
MEFF	3 222 390	5 444 156	33 880	63 813	366 845	507 396
Moscow Exchange	30 798 206	19 822 399	56 484	27 369	1 543 490	729 470
NASDAQ Nordic Exchanges	8 506 735	9 910 664	129 908	97 995	441 427	659 700
Oslo Børs	753 393	667 406	4 115	4 091	90 743	70 153
Tel-Aviv Stock Exchange	37 708 688	47 822 282	NA	1 954 467	NA	280 203
Warsaw Stock Exchange	377 232	438 206	1 640	2 494	23 196	11 594
<b>Grand Total</b>	<b>2 765 425 726</b>	<b>3 741 085 266</b>				

## Stock Index Futures

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
BM&FBOVESPA	170 157 338	112 848 326	835 305	527 258	401 046	399 033
Bolsa de Valores de Colombia	474	933	5	9	40	5
CME Group	609 691 636	564 922 595	62 128 100	57 049 613	3 523 180	3 234 603
ICE Futures US	58 606 763	47 993 899	4 686 750	4 314 433	1 488 260	1 089 401
MexDer	1 502 576	1 526 996	23 959	29 970	35 711	31 830
Montréal Exchange (TMX Group)	6 114 184	5 529 094	633 954	644 728	245 634	220 577
<b>Asia-Pacific</b>						
Australian Securities Exchange	12 339 297	11 206 028	1 136 033	1 070 992	281 587	248 899
BSE Limited	63 932	498 874	550	3 199	0	4 289
Bursa Malaysia Derivatives (BMD)	2 750 951	3 023 971	48 761	57 769	27 829	37 750
China Financial Futures Exchange	9 401 843	334 781 838	1 435 968	63 455 265	99 127	71 033
Hong Kong Exchanges and Clearing	82 693 876	72 199 611	6 798 090	5 471 018	459 024	495 534
Japan Exchange Group	293 749 363	312 036 346	9 983 243	11 342 536	1 836 840	1 633 504
Korea Exchange	44 352 678	41 853 183	3 478 683	4 223 095	147 169	178 009
National Stock Exchange of India	74 873 789	165 005 113	662 515	704 327	295 421	432 117
NZX Limited	12	50	1	4	NA	NA
Singapore Exchange	142 186 086	164 546 177	NA	NA	1 485 440	1 362 886
TAIFEX	60 595 256	56 522 378	2 245 515	2 153 144	140 911	100 044
Thailand Futures Exchange (TFEX)	32 192 984	26 764 395	NA	NA	283 692	288 560
<b>EMEA</b>						
Athens Stock Exchange	895 527	2 134 904	1 529	2 729	7 705	16 066
Borsa Istanbul	46 113 552	46 457 606	124 523	158 055	413 725	327 708
Budapest Stock Exchange	61 529	234 833	210	168	4 520	2 010
Dubai Gold & Commodities Exchange (DGCX)	174 984	184 766	1 256	5 049	693	658
Eurex	498 173 245	429 805 326	21 196 378	23 422 681	6 114 090	5 614 544
Euronext	44 265 259	46 812 962	2 486 872	2 959 719	479 559	393 139
ICE Futures Europe	42 808 306	33 678 431	3 454 538	3 561 928	901 348	993 883
Johannesburg Stock Exchange	21 794 769	19 317 214	479 009	408 804	849 456	485 714
MEFF	9 395 136	10 598 682	673 261	893 364	110 334	113 813
Moscow Exchange	236 104 126	195 077 549	429 876	277 356	613 064	478 214
NASDAQ Nordic Exchanges	43 064 945	39 823 109	634 113	400 628	849 198	410 366
Oslo Børs	3 426 747	2 916 303	1 394	18 413	47 953	57 770
Tel-Aviv Stock Exchange	7 371	30 033	NA	1 142	NA	1 233
Warsaw Stock Exchange	4 793 681	4 563 690	41 566	51 692	73 235	51 380
<b>Grand Total</b>	<b>2 552 352 215</b>	<b>2 752 895 215</b>				

## ETF Options

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
BATS Global Markets	186 860 476	135 668 775	NA	NA	NA	NA
BM&FBOVESPA	4 269 833	4 809 002	585 976	574 584	36 850	553 810
Boston Options Exchange (TMX Group)	41 356 496	40 304 066	NA	NA	NA	NA
Chicago Board Options Exchange	326 683 968	320 995 677	NA	4 372 311	NA	84 988 632
International Securities Exchange (ISE)	283 223 551	287 450 120	NA	NA	NA	NA
MexDer	293	13 602	NA	3	2	15
Miami International Securities Exchange	115 267 450	104 431 137	NA	NA	NA	NA
Montréal Exchange (TMX Group)	11 724 768	8 719 474	14 125	13 224	1 745 250	988 578
NASDAQ (US markets)	381 040 628	352 507 244	NA	NA	NA	NA
NYSE Derivatives	316 462 583	293 780 672	48 873	49 186	NA	NA
<b>Asia-Pacific</b>						
Hong Kong Exchanges and Clearing	3 507 689	8 029 156	24 495	60 844	250 566	235 399
Japan Exchange Group	76 063	7 654	NA	NA	3 902	NA
TAIFEX	330 369	8 626	2 571	74	7 136	2 138
<b>EMEA</b>						
Eurex	286 160	41 247	1 118	317	19 533	5 482
Euronext	10 394	NA	31	NA	1 267	NA
Johannesburg Stock Exchange	3 987	22 950	NA	1	NA	NA
<b>Grand Total</b>	<b>1 671 104 708</b>	<b>1 556 789 402</b>				

## ETF Futures

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Asia-Pacific</b>						
Hong Kong Exchanges and Clearing	33 240	239 692	235	2 089	517	5 327
TAIFEX	1 748 371	1 281 702	16 181	11 934	20 410	19 347
<b>EMEA</b>						
Borsa Istanbul	5 728	6 087	NA	5	NA	NA
Johannesburg Stock Exchange	517 863	763 928	72	58	26 306	51 804
<b>Grand Total</b>	<b>2 305 202</b>	<b>2 291 409</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>

### Short Term Interest Rate Options

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
BM&FBOVESPA	1 264 615	37 954 080	67	NA	5 916 165	5 202 712
CME Group	308 877 968	243 992 465	309 068 204	245 116 510	33 836 464	26 110 376
Montréal Exchange (TMX Group)	683 247	580 007	508 482	418 370	250 940	62 102
<b>Asia-Pacific</b>						
Australian Securities Exchange	5 500	NA	3 964	NA	NA	NA
<b>EMEA</b>						
Eurex	10 215	811 511	2 687	221 325	1 545 274	249 738
ICE Futures Europe	63 608 628	57 375 569	50 172 047	NA	7 774 279	12 838 438
NASDAQ OMX Nordic Exchanges	20 000	86 000	2 160	5 585	NA	NA
<b>Grand Total</b>	<b>374 470 173</b>	<b>340 799 632</b>				

### Short Term Interest Rate Futures

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
BM&FBOVESPA	336 225 890	379 443 803	10 769 008	9 472 550	259 824 484	20 155 270
Bolsa de Valores de Colombia	29 775	6 072	5 006	965	15 706	5 638
CME Group	688 266 468	607 225 072	821 503 622	688 342 197	12 125 022	11 092 769
MexDer	545 100	5 693 368	2 623	32 833	582 696	1 330 178
Montréal Exchange (TMX Group)	26 316 537	21 746 698	19 585 128	15 686 297	936 688	613 542
<b>Asia-Pacific</b>						
Australian Securities Exchange	35 367 906	34 583 434	30 911 221	29 600 683	1 331 103	1 242 248
Bursa Malaysia Derivatives (BMD)	40	1 271	9	296	NA	120
Hong Kong Exchanges and Clearing	52	96	8	15	40	NA
Singapore Exchange	15	107	NA	NA	3 291	4
<b>EMEA</b>						
Eurex	169 335	376 277	44 677	102 712	71 206	71 120
ICE Futures Europe	294 627 100	277 555 979	240 821 892	78 809 559	5 550 479	9 098 430
Johannesburg Stock Exchange	40 091	29 850	68	45	1 000	2 000
Moscow Exchange	3 295	NA	4	NA	2 520	NA
NASDAQ Nordic Exchanges	7 958 004	12 085 292	859 386	784 866	1 382 450	1 380 059
Warsaw Stock Exchange	7 257	1 916	292	114	881	16
<b>Grand Total</b>	<b>1 389 556 865</b>	<b>1 338 749 235</b>				

### Long Term Interest Rate Options

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
Bolsa de Comercio de Buenos Aires	NA	3 310	NA	NA	NA	NA
CME Group	145 442 505	144 162 694	14 712 457	14 657 471	3 695 350	2 503 117
Montréal Exchange (TMX Group)	4 553	3 677	339	265	1 576	685
<b>Asia-Pacific</b>						
Australian Securities Exchange	1 458 722	1 659 929	105 126	120 996	13 296	32 925
Japan Exchange Group	958 472	1 142 738	NA	NA	9 997	10 664
<b>EMEA</b>						
Eurex	59 277 386	79 351 084	9 068 141	12 174 899	2 240 026	1 512 571
Johannesburg Stock Exchange	205 539	348 297	22	40	36 955	60 133
NASDAQ OMX Nordic Exchanges	0	2 500	0	162	0	NA
Tel-Aviv Stock Exchange	NA	NA	NA	NA	NA	NA
<b>Grand Total</b>	<b>207 347 177</b>	<b>226 674 229</b>				

## Long Term Interest Rate Futures

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
BM&FBOVESPA	16 189	9 848	2 188	1 043	7 105	478
Bolsa de Valores de Colombia	170 555	191 619	15 080	16 164	6 787	2 994
CME Group	751 606 737	703 124 159	82 786 254	78 616 482	91 543 189	6 966 288
MexDer	1 839 390	1 284 556	10 891	9 460	57 741	79 150
Montréal Exchange (TMX Group)	21 085 080	18 092 625	14 965 028	1 305 055	438 119	426 652
<b>Asia-Pacific</b>						
Australian Securities Exchange	92 517 625	81 299 947	6 647 023	5 844 334	1 789 335	1 459 694
Bursa Malaysia Derivatives (BMD)	0	3 700	0	86	0	0
China Financial Futures Exchange	8 934 012	6 087 493	137 180 069	926 312	80 298	58 594
Japan Exchange Group	7 389 883	8 721 116	0	10 647 825	80 905	95 933
Korea Exchange	38 824 185	37 791 849	3 789 044	1 221 926	266 096	328 480
National Stock Exchange of India	15 281 634	28 536 771	46 124	88 106	42 350 746	309 659
Singapore Exchange	607 675	703 059	NA	NA	14 496	29 911
<b>EMEA</b>						
Eurex	467 102 126	428 549 978	70 983 378	65 232 764	5 188 122	3 628 960
ICE Futures Europe	53 765 296	34 304 672	6 885 345	1 608 358	617 965	684 136
Johannesburg Stock Exchange	9 167 378	5 292 686	71 569	39 764	798 552	669 933
MEFF	360	8 012	38	875	NA	74
Moscow Exchange	2 643 296	2 621 266	433	339	49 124	70 034
NASDAQ Nordic Exchanges	3 727 019	4 526 349	402 482	293 959	188 457	216 879
Warsaw Stock Exchange	63	382	2	11	10	NA
<b>Grand Total</b>	<b>1 474 678 503</b>	<b>1 361 150 087</b>				

## Currency Options

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
BM&FBOVESPA	7 386 410	7 154 790	9 492	NA	818 467	1 051 636
CME Group	18 139 184	21 039 836	2 071 347	2 518 580	656 510	579 073
ICE Futures US	22 893	16 099	2 227	1 551	2 737	1 346
MexDer	32 904	74 995	296	701	85	10 001
Montréal Exchange (TMX Group)	19 006	2 491	91	19	741	257
<b>Asia-Pacific</b>						
BSE Limited	207 386 529	170 311 114	206 816	163 583	613 868	755 443
National Stock Exchange of India	351 632 420	216 130 236	351 609	212 265	2 420 397	2 039 888
Singapore Exchange	208	NA	NA	NA	NA	NA
TAIFEX	150 310	NA	3 734	NA	5 189	NA
<b>EMEA</b>						
Borsa Istanbul	7 053 487	1 462 346	6 290	1 441	721 389	170 288
Budapest Stock Exchange	3 259	17 600	11	19	1 500	100
Dubai Gold & Commodities Exchange (DGCX)	334 823	132 465	11	5	17 692	3 077
Euronext	55 430	127 702	584	1 395	4 253	9 506
Johannesburg Stock Exchange	14 030 889	11 251 621	15 477	10 246	1 240 499	1 917 456
Moscow Exchange	30 905 844	22 429 172	34 846	19 306	1 984 956	2 223 600
Tel-Aviv Stock Exchange	13 136 366	16 677 017	131 812	167 647	444 534	538 845
<b>Grand Total</b>	<b>650 289 962</b>	<b>466 827 484</b>				



## Currency Futures

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
BM&FBOVESPA	163 892 083	105 735 430	5 018 516	4 521 462	4 115 890	1 194 631
Bolsa de Valores de Colombia	599 863	558 175	24 332	20 979	3 553	4 651
CME Group	196 951 833	198 875 882	18 857 126	20 118 870	1 435 748	1 436 015
ICE Futures US	8 459 291	13 137 855	721 588	1 167 505	118 076	106 819
MexDer	8 632 764	8 024 457	79 224	73 990	836 895	505 861
<b>Asia-Pacific</b>						
BSE Limited	322 747 312	259 420 574	295 882	252 701	577 757	755 443
Hong Kong Exchanges and Clearing	544 891	262 433	1 298	22 306	47 241	23 046
Korea Exchange	65 606 504	53 899 525	632 331	520 947	828 377	676 267
National Stock Exchange of India	396 431 206	395 377 589	402 612	392 502	1 969 063	2 232 802
Singapore Exchange	6 282 730	NA	NA	NA	42 228	NA
TAIFEX	692 443	1 153 203	22 055	31 777	5 976	4 669
Thailand Futures Exchange (TFEX)	204 470	271 754	NA	NA	8 180	13 584
<b>EMEA</b>						
Borsa Istanbul	41 670 839	36 944 429	37 245	35 576	476 723	396 173
Budapest Stock Exchange	2 270 230	8 065 865	7 740	8 557	635 847	678 636
Dubai Gold & Commodities Exchange (DGCX)	18 097 302	13 617 742	109 449	355 350	325 041	43 358
Johannesburg Stock Exchange	34 393 431	34 123 588	38 114	29 129	1 090 978	1 418 978
Moscow Exchange	930 716 193	982 931 717	1 061 804	13 435 462	2 874 122	3 217 102
Warsaw Stock Exchange	1 259 323	2 167 603	1 222	2 140	46 398	32 236
<b>Grand Total</b>	<b>2 199 452 708</b>	<b>2 114 567 821</b>				

## Commodity Options

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
BM&FBOVESPA	352 058	1 133 061	65	2 657	43 359	48 668
CME Group	155 743 566	143 577 015	6 265 000	5 806 328	10 298 800	10 559 386
ICE Futures Canada	186 290	166 323	31	29	17 128	10 732
ICE Futures US	52 777 649	56 740 512	NA	NA	1 263 290	8 116 242
<b>Asia-Pacific</b>						
Australian Securities Exchange	22 199	30 771	3 686	3 530	12 303	14 565
Bursa Malaysia Derivatives (BMD)	40 120	2 300	1	7	10 000	2 300
NZX Limited	18 156	52 313	2	4	10 261	19 813
Singapore Exchange	3 283 140	1 340 419	NA	NA	679 375	506 795
TAIFEX	73 749	73 579	558	499	633	726
<b>EMEA</b>						
Eurex	840	1 109	34	78	NA	44
Euronext	1 643 378	2 385 926	388	694	192 188	465 058
ICE Futures Europe	29 129 853	24 332 946	43 003	43 772	3 816 980	4 097 096
Johannesburg Stock Exchange	471 061	544 482	1 060	804	36 968	87 294
London Metal Exchange	7 102 541	7 637 843	464 403	NA	529 548	399 667
Moscow Exchange	4 601 746	170 794	2 334	101	103 330	138 128
<b>Grand Total</b>	<b>255 446 346</b>	<b>238 189 393</b>				

## Commodity Futures

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
BM&FBOVESPA	1 390 766	764 823	14 387	9 403	41 790	18 704
Bolsa de Valores de Colombia	1 011	24	11	NA	605	NA
CME Group	906 840 979	762 836 614	40 169 100	35 343 308	24 398 400	25 239 297
ICE Futures Canada	6 245 256	5 579 688	45 700	38 099	185 582	183 437
ICE Futures US	250 241 851	247 515 611	NA	NA	1 542 920	18 456 431
<b>Asia-Pacific</b>						
Australian Securities Exchange	386 232	321 612	13 455	12 084	81 038	90 621
Bursa Malaysia Derivatives (BMD)	11 424 752	11 024 583	165 508	142 735	198 648	190 076
Dalian Commodity Exchange	1 537 479 768	1 116 323 375	757 515	6 462 804	61 405 300	5 325 426
Hong Kong Exchanges and Clearing	29 171	55 753	341	6 497	53	350
Korea Exchange	0	34 703	NA	125	NA	51
Multi Commodity Exchange of India	245 077 515	216 346 961	901 301	838 585	259 804	408 784
NZX Limited	180 159	161 314	419	283	39 804	22 804
Shanghai Futures Exchange	1 680 771 301	1 050 494 146	12 238 792	9 794 579	3 768 910	37 218 306
Singapore Exchange	13 673 778	654 853	NA	NA	601 760	36 907
TAIFEX	111 875	58 016	1 681	787	757	465
Thailand Futures Exchange (TFEX)	2 923 276	1 487 506	NA	NA	24 995	18 712
Zhengzhou Commodity Exchange	901 240 809	1 070 223 728	8 559 154	4 774 284	2 696 540	2 478 030
<b>EMEA</b>						
Borsa Istanbul	5 195 760	1 501 932	2 290	606	67 447	22 585
Budapest Stock Exchange	2 616	3 541	54	80	186	201
Dubai Gold & Commodities Exchange (DGCX)	971 147	570 343	8 904	19 193	3 341	3 501
Eurex	95 714	59 997	1 234	1 414	NA	8 416
Euronext	12 115 438	10 787 401	132 826	124 498	374 948	339 340
ICE Futures Europe	402 153 516	346 002 516	16 083 869	17 942 226	9 072 480	8 859 711
Johannesburg Stock Exchange	1 706 069	2 955 583	68 853	47 863	65 553	89 089
London Metal Exchange	149 410 189	161 902 341	9 816 380	NA	2 212 500	NA
MEFF	24 083 621	23 090 339	NA	1 195	NA	8 473 043
Moscow Exchange	466 782 771	123 111 413	250 548	59 913	857 334	725 588
<b>Grand Total</b>	<b>6 620 535 340</b>	<b>5 153 868 716</b>				

### Other derivatives

	Volume		Notional Value		Open interest	
	2016	2015	2016	2015	2016	2015
<b>Americas</b>						
Bolsa de Valores de Colombia	0	40	0	3	0	NA
CBOE Futures Exchange (CFE)	60 177 810	51 675 531	952 356	861 518	396 909	252 673
Chicago Board Options Exchange	148 253 619	144 464 727	241 826	240 924	5 325 332	4 216 318
<b>Asia-Pacific</b>						
Hong Kong Exchanges and Clearing	606 161	215 306	1 298	532	113 733	78 008
Japan Exchange Group	352 053	402 169	4 205	2 964	35 401	22 487
<b>EMEA</b>						
Borsa Istanbul	278 195	NA	794	NA	3 155	NA
Eurex	26 093 021	22 910 413	124 116	120 285	3 992 781	3 666 958
Euronext	175 085	88 106	49 291	145	262 374	48 200
ICE Futures Europe	6 087 528	5 643 531	24 882 409	NA	21 293 870	NA
Johannesburg Stock Exchange	377 590 039	401 227 199	11 315	8 878	38 020 813	148 625
<b>Grand Total</b>	<b>619 613 511</b>	<b>626 627 022</b>				