



Agricultural Futures and Options Trading – A Global Perspective

—
FIA presentation to the Agricultural Advisory
Committee of the Commodity Futures Trading
Commission

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Part 1: Volume and Open Interest Measured by Number of Contracts Traded

- Global volume and open interest in 2020 by jurisdiction
- Five-year trends in global volume and open interest
- Contract-level rankings by volume and open interest
- Sunburst-style visualization of market share by sector

Part 2: Volume and Open Interest Adjusted by Contract Size

- Goal: Compare market size from end-user perspective
- Focus on leading contracts based on six commodities
- Cotton, Sugar, Corn, Wheat, Palm Oil, Rapeseed, Soy



Understanding the Data

FIA collects data on volume and open interest from nearly all derivatives exchanges in the world.

The data consists of two metrics:

- Volume - the number of contracts traded and/or cleared per month at each exchange and/or clearinghouse
- Open Interest - the number of contracts outstanding at the end of the month at each exchange and/or clearinghouse

FIA makes adjustments to the data to avoid double counting and to reflect revisions and corrections by the exchanges.

FIA does not collect information on the location of customers trading on those exchanges.



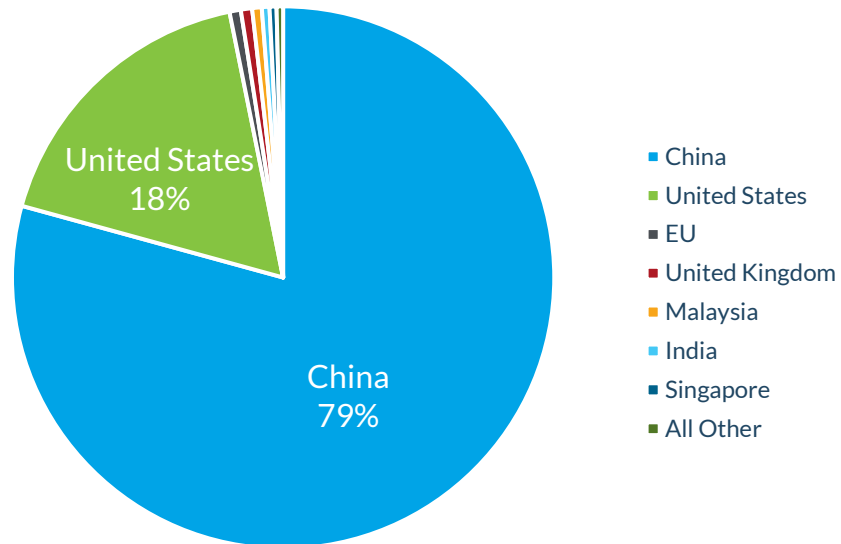
Understanding the Data

- The first part of this analysis provides an overview of global trends in agricultural futures and options volume and open interest.
- The data on volume and open interest are sorted by jurisdiction. In some cases, such as China and the European Union, a jurisdiction may include more than one exchange.
- No adjustments are made for differences in contract sizes. In other words, a contract based on 10 metric tons is treated the same as a contract based on 25 metric tons. This matches how exchanges and intermediaries measure trading.
- In the second part of the analysis, the data on volume and open interest for certain contracts are converted into metric tons by multiplying the number of contracts by the size of the contract. This provides insights into market size from the perspective of an end-user managing price risk on the underlying commodity.

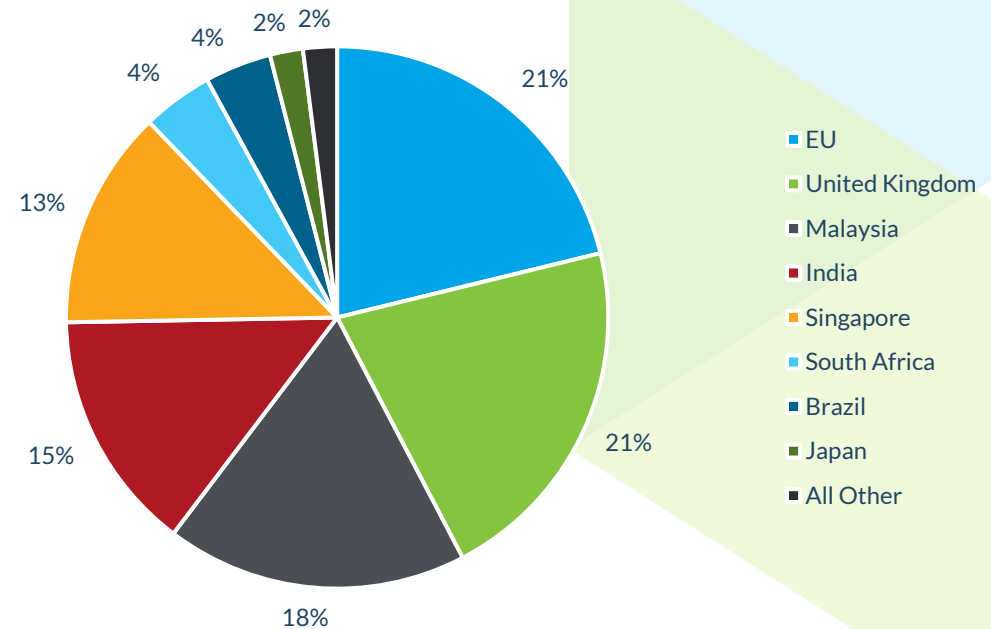
Trading Volume in 2020 by Location of Exchange

Chinese exchanges accounted for 79% of all agricultural futures and options contracts traded in 2020

Volume of Agriculture Futures and Options



Global Trading Volume - Excluding China and the US



Trading Volume in 2020 by Location of Exchange

	Annual Volume	Year-End Open Interest
China	2,037,491,551	9,309,219
United States	451,609,044	11,322,009
EU	17,278,906	884,479
United Kingdom	17,247,807	581,514
Malaysia	14,670,716	180,097
India	11,740,444	140,140
Singapore	10,678,962	74,424
South Africa	3,444,896	169,746
Brazil	3,243,985	141,284

	Annual Volume	Year-End Open Interest
Japan	1,603,088	19,560
Argentina	1,097,708	72,047
New Zealand	360,887	58,287
Australia	138,689	35,611
Indonesia	30,183	0
Thailand	17,597	197
Pakistan	2,344	11
Russia	488	24
Turkey	12	0

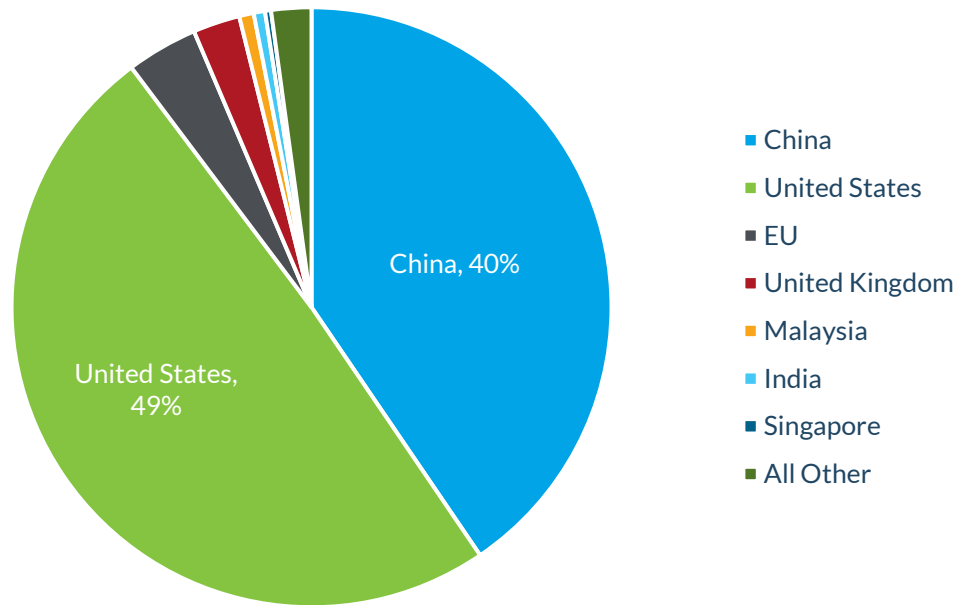


Note: Volume and open interest measured by the number of futures and options contracts traded on exchanges in these jurisdictions.

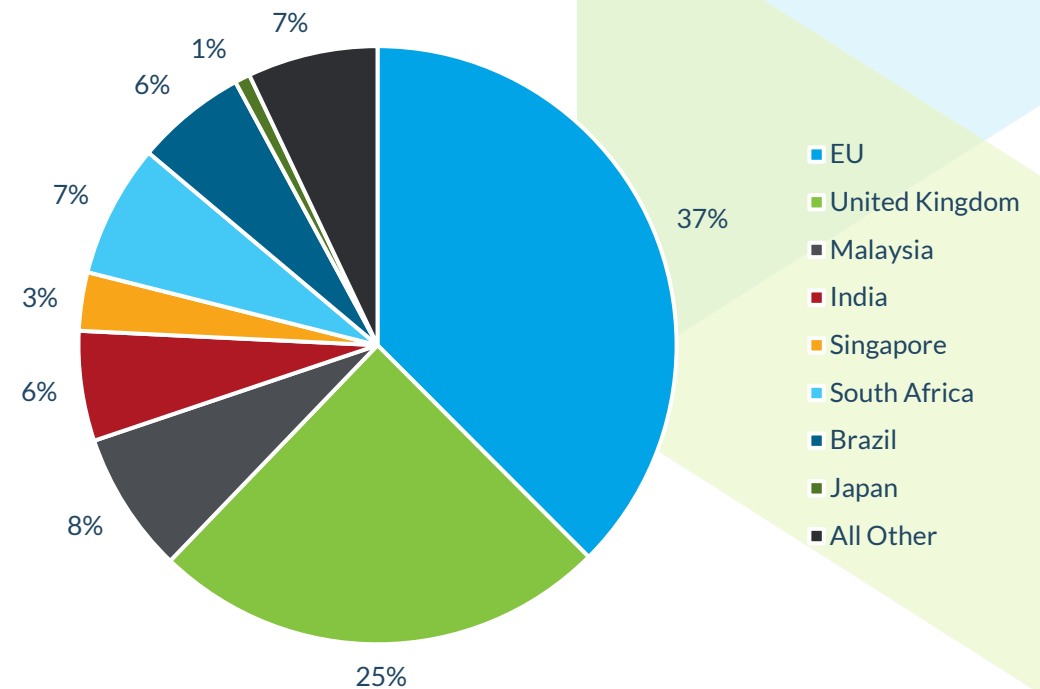
Open Interest by Location of Exchange

US exchanges accounted for 49% of the total number of contracts outstanding at year-end 2020

2020 Year-End Open Interest in Agricultural Futures and Options



2020 Year-End Open Interest - Excluding China and the US



Note: these charts do not indicate the location of customers trading on exchanges in these jurisdictions

Contracts Ranked by 2020 Volume

Volume Rank	Exchange	Type	Contract	Total 2020 Volume	YoY Change	Year-End Open Interest	YoY Change	OI Rank
1	Dalian Commodity Exchange	Future	Soybean Meal	359,464,679	31.7%	2,304,861	-21.2%	1
2	Dalian Commodity Exchange	Future	RBD Palm Olein	315,167,096	132.6%	416,392	-53.1%	15
3	Dalian Commodity Exchange	Future	Corn	177,715,573	79.3%	1,556,234	31.7%	3
4	Dalian Commodity Exchange	Future	Soybean Oil	173,116,523	97.7%	587,469	-26.8%	9
5	Zhengzhou Commodity Exchange	Future	Rapeseed Meal (RM)	159,893,801	15.8%	478,995	45.2%	12
6	Dalian Commodity Exchange	Future	Egg	132,053,500	255.7%	333,364	-15.5%	19
7	Zhengzhou Commodity Exchange	Future	White Sugar (SR)	124,551,207	10.7%	559,029	42.7%	10
8	Zhengzhou Commodity Exchange	Future	Cotton No. 1 (CF)	108,338,363	69.4%	635,692	-9.4%	8
9	Zhengzhou Commodity Exchange	Future	Rapeseed Oil (OI)	105,447,334	179.1%	161,387	25.1%	39
10	Shanghai Futures Exchange	Future	Rubber	100,942,773	87.5%	280,142	7.1%	23
11	Chicago Board of Trade	Future	Corn	89,753,068	-13.0%	1,750,518	18.8%	2
12	Zhengzhou Commodity Exchange	Future	Apple (AP)	63,009,295	68.2%	329,205	231.3%	20
13	Chicago Board of Trade	Future	Soybean	61,122,980	14.6%	889,698	24.7%	6
14	Dalian Commodity Exchange	Future	No. 1 Soybean	59,445,167	222.2%	107,489	9.5%	44
15	ICE Futures U.S.	Future	Sugar #11	39,949,270	6.0%	1,066,198	7.7%	5



Note: Volume and open interest measured by the number of futures and options contracts traded on exchanges in these jurisdictions.

Contracts Ranked by Year-End 2020 Open Interest

Volume Rank	Exchange	Type	Contract	Total 2020 Volume	YoY Change	Year-End Open Interest	YoY Change	OI Rank
1	Dalian Commodity Exchange	Future	Soybean Meal	359,464,679	31.7%	2,304,861	-21.2%	1
11	Chicago Board of Trade	Future	Corn	89,753,068	-13.0%	1,750,518	18.8%	2
3	Dalian Commodity Exchange	Future	Corn	177,715,573	79.3%	1,556,234	31.7%	3
22	Chicago Board of Trade	Option	Corn	24,395,038	-22.1%	1,363,439	54.3%	4
15	ICE Futures U.S.	Future	Sugar #11	39,949,270	6.0%	1,066,198	7.7%	5
13	Chicago Board of Trade	Future	Soybean	61,122,980	14.6%	889,698	24.7%	6
24	Chicago Board of Trade	Option	Soybean	16,954,195	25.5%	831,106	88.6%	7
8	Zhengzhou Commodity Exchange	Future	Cotton No. 1 (CF)	108,338,363	69.4%	635,692	-9.4%	8
4	Dalian Commodity Exchange	Future	Soybean Oil	173,116,523	97.7%	587,469	-26.8%	9
7	Zhengzhou Commodity Exchange	Future	White Sugar (SR)	124,551,207	10.7%	559,029	42.7%	10
40	ICE Futures U.S.	Option	Sugar No. 11	6,156,858	9.0%	492,536	-10.4%	11
5	Zhengzhou Commodity Exchange	Future	Rapeseed Meal (RM)	159,893,801	15.8%	478,995	45.2%	12
18	Chicago Board of Trade	Future	Soybean Oil	32,961,867	4.0%	469,214	-6.3%	13
28	Euronext Derivatives Market	Future	Milling Wheat	12,969,205	28.0%	457,451	33.0%	14
2	Dalian Commodity Exchange	Future	RBD Palm Olein	315,167,096	132.6%	416,392	-53.1%	15

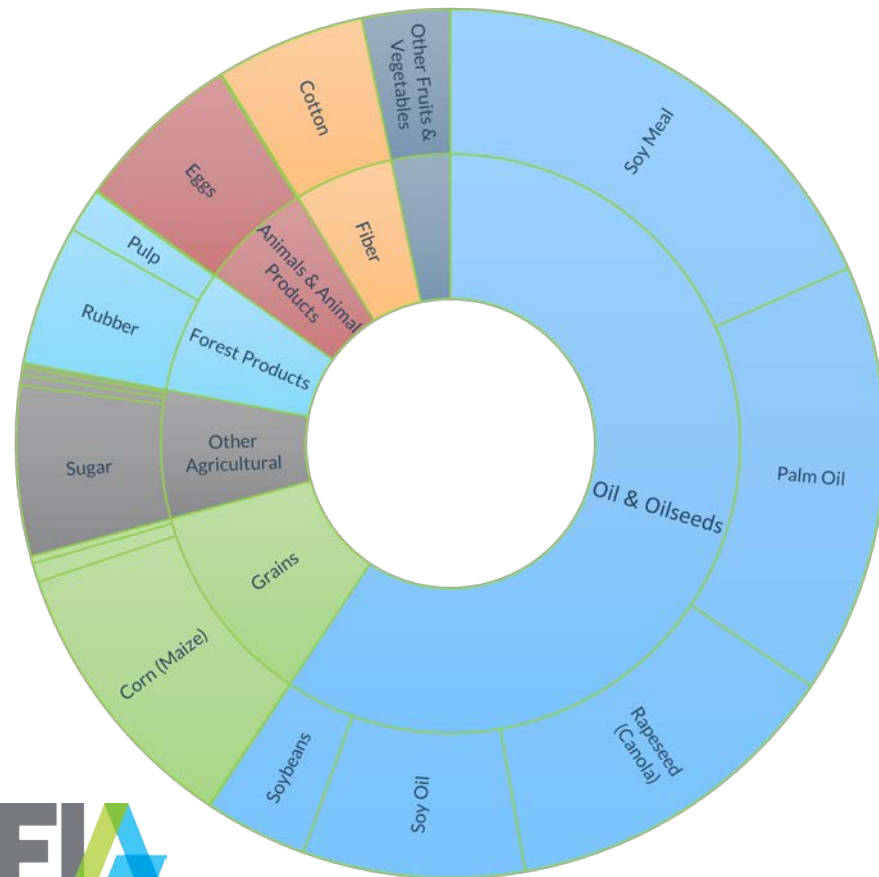


Note: Volume and open interest measured by the number of futures and options contracts traded on exchanges in these jurisdictions.

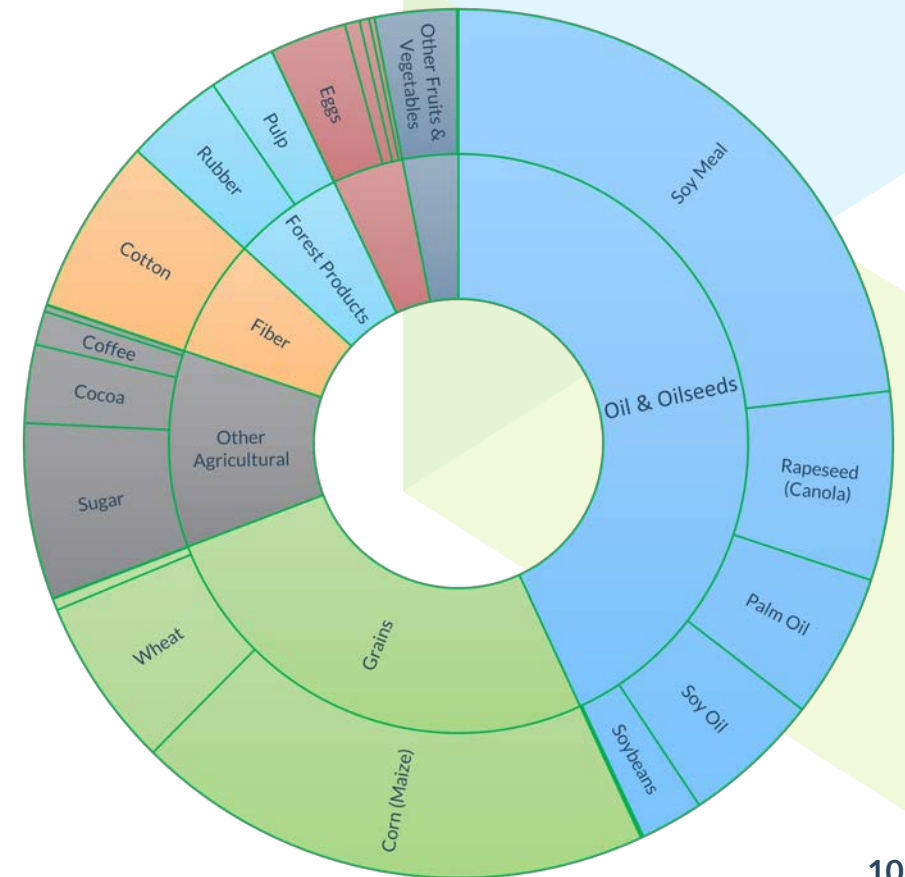
Non-US Volume and OI by Sector

Oil and oilseed contracts account for the largest amount of trading outside the US

Total 2020 Volume



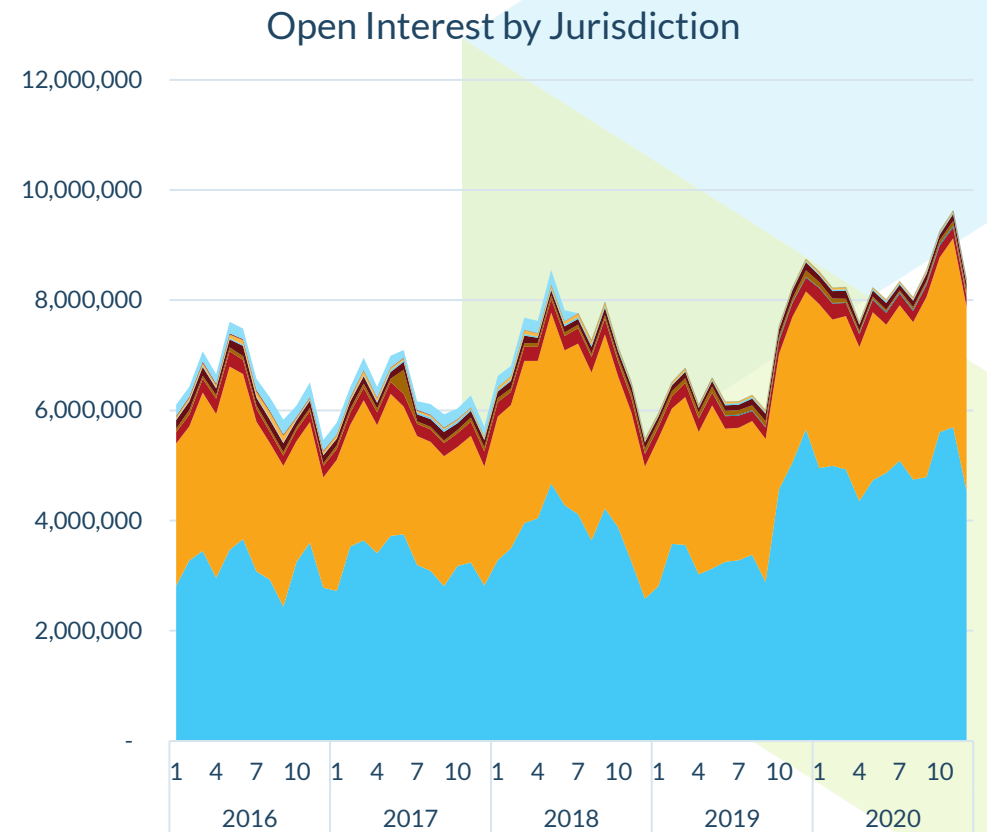
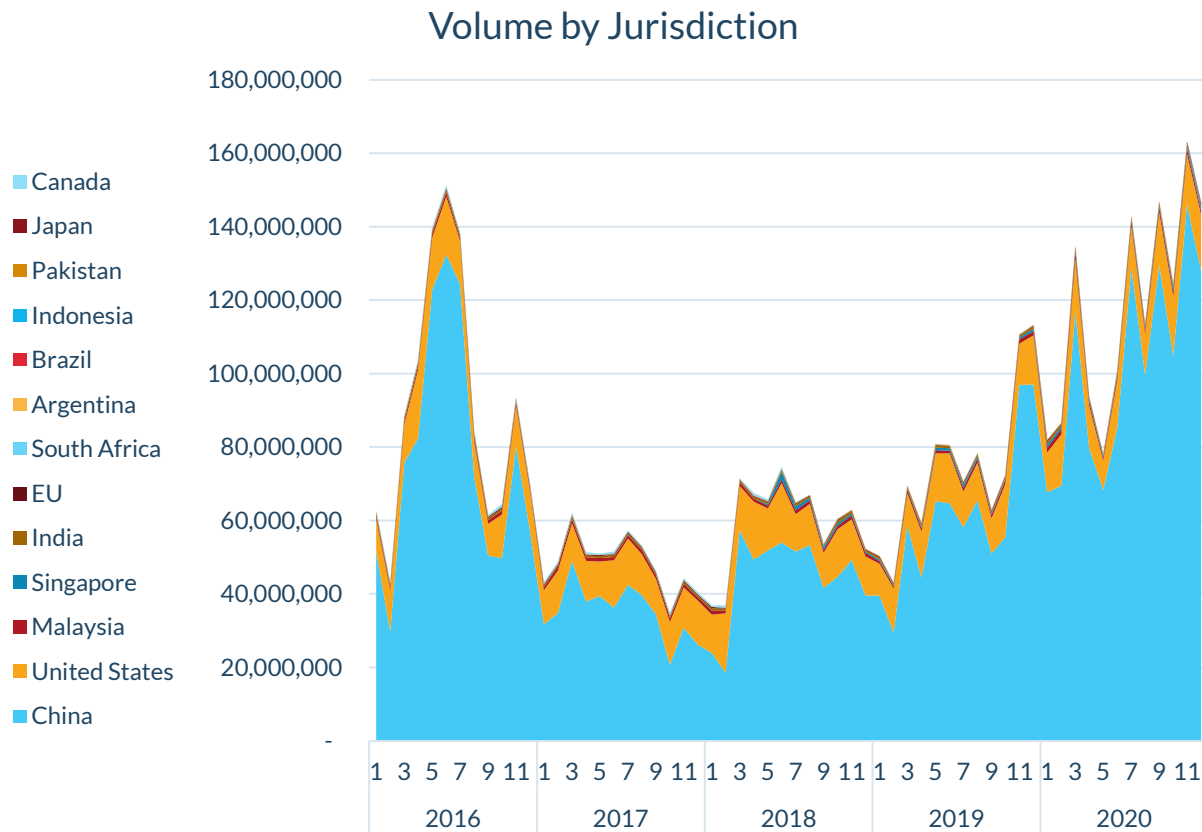
Year-End Open Interest



Note: Inner circle is based on all data from all non-US exchanges in each sector of the market. The outer circle breaks down the same sector in the component subsectors.

Oil and Oilseeds – Five Year Trends

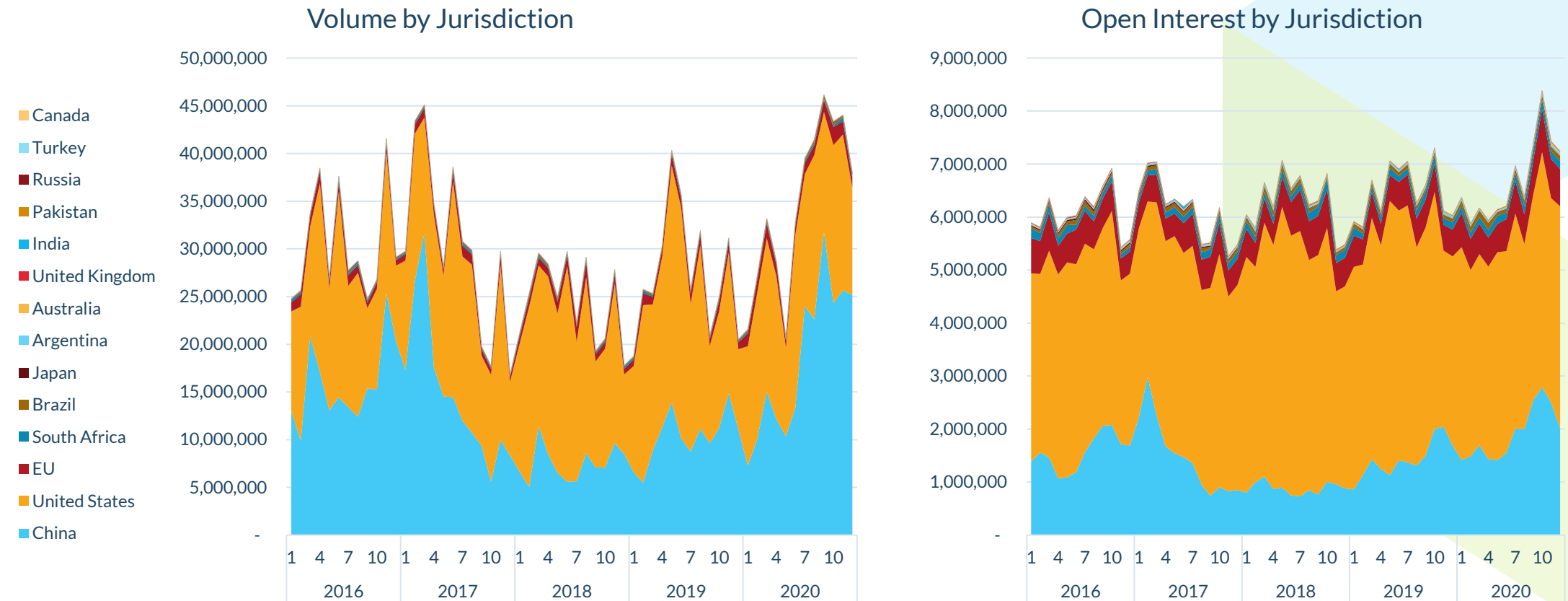
Chinese exchanges drive trends in trading volume, but US exchanges hold a large share of open interest



Note: Volume and open interest measured by the number of futures and options contracts traded on exchanges in these jurisdictions.

Grains – Five Year Trends

Both trading volume and open interest hit record levels in the second half of 2020

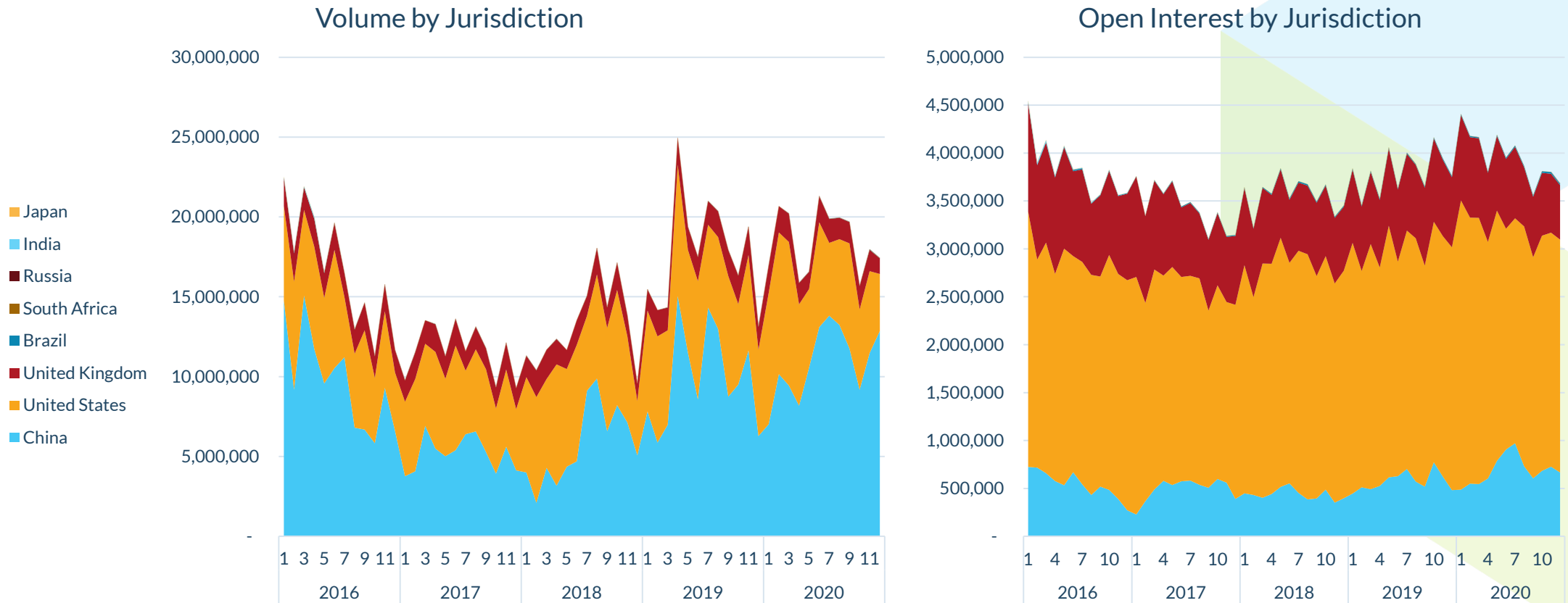


Note: Volume and open interest measured by the number of futures and options contracts traded on exchanges in these jurisdictions.



Softs – Five Year Trends

The UK market holds approximately the same amount of open interest as China





Part Two – Adjusting for Contract Size

- FIA has converted contract-level data for certain contracts into metric ton equivalents in order to give an end-user perspective on market size.
- The contracts selected for this analysis are based on six agricultural commodities that are traded in significant amounts in more than one jurisdiction – corn, cotton, palm oil, rapeseed, sugar, soy and wheat.
- Converting the contracts into metric ton equivalents provides a way to compare the relative size of these markets in terms of the amount of the underlying commodities that these contracts represent.

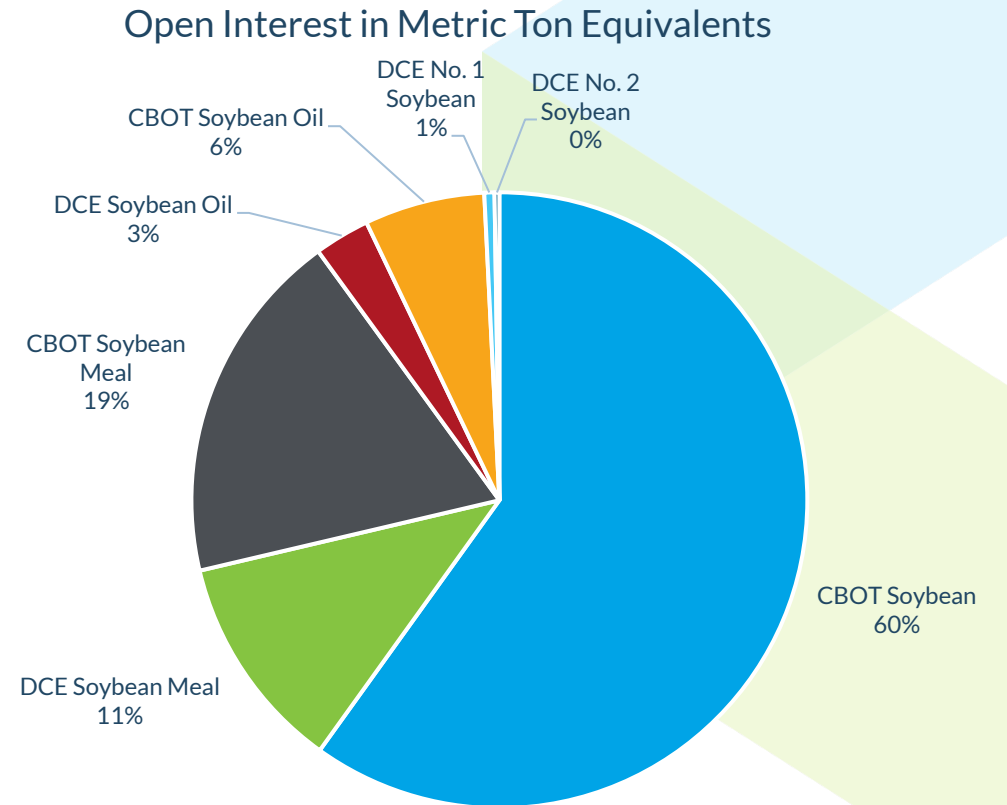
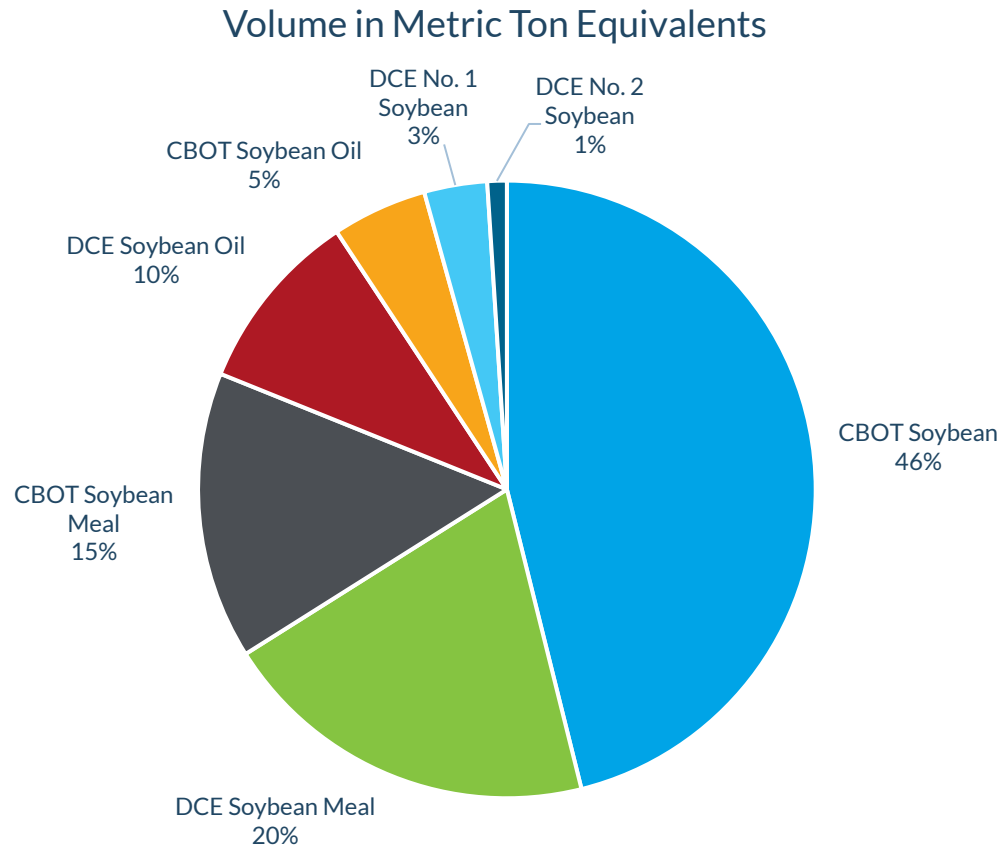
Soy Contracts on China and US Exchanges

Exchange	Type	Contract	Metric Tons	2020 Volume	2020 OI	Adjusted Volume	Adjusted OI
Chicago Board of Trade	Future	Soybean Oil	27.2	32,961,867	469,214	896,562,782	12,762,621
Dalian Commodity Exchange	Future	Soybean Oil	10.0	173,116,523	587,469	1,731,165,230	5,874,690
Chicago Board of Trade	Future	Soybean Meal	90.7	29,914,836	415,506	2,713,275,625	37,686,394
Dalian Commodity Exchange	Future	Soybean Meal	10.0	359,464,679	2,304,861	3,594,646,790	23,048,610
Chicago Board of Trade	Future	Soybean	136.0	61,122,980	889,698	8,312,725,280	120,998,928
Dalian Commodity Exchange	Future	No. 1 Soybean	10.0	59,445,167	107,489	594,451,670	1,074,890
Dalian Commodity Exchange	Future	No. 2 Soybean	10.0	18,359,635	50,875	183,596,350	508,750

Note: Adjusted volume and open interest were calculated by multiplying the number of contracts by the number of metric tons represented by each contract.

Soy Contracts on China and US Exchanges

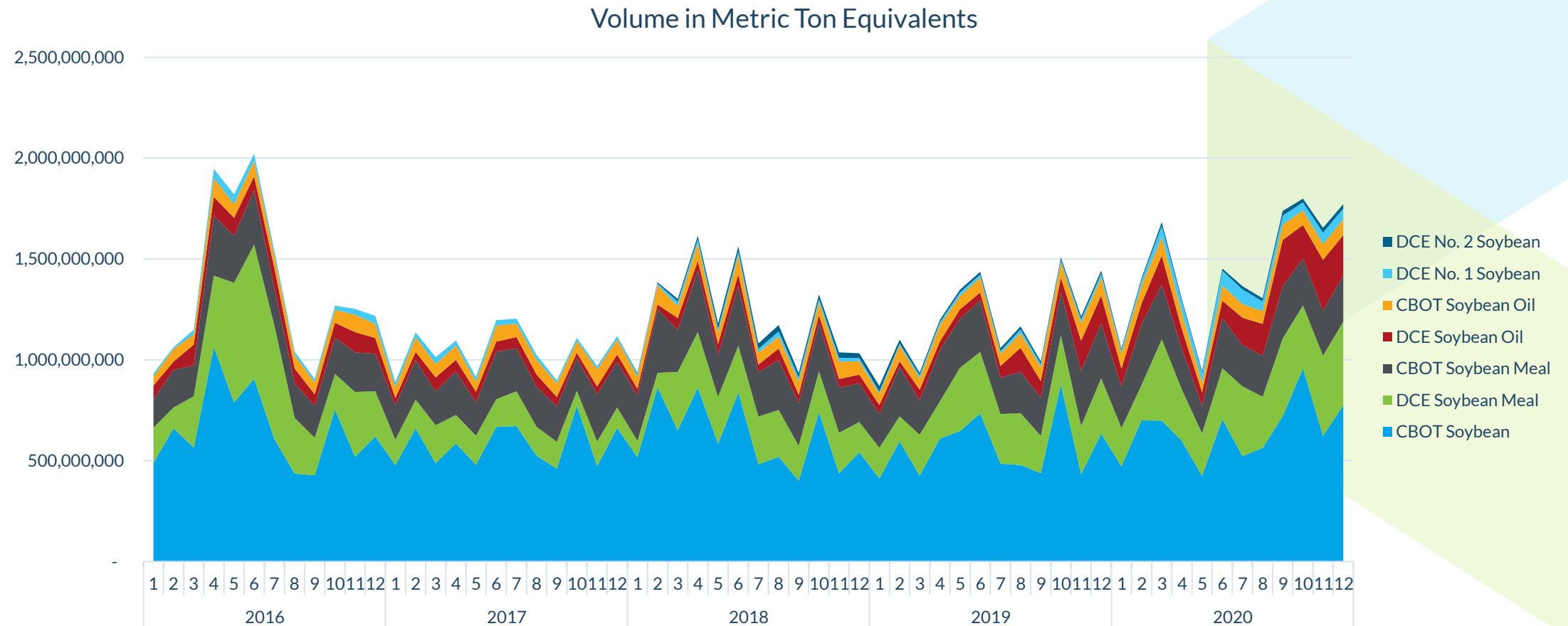
China's DCE has developed a large market for futures on soybean meal



Note: DCE = Dalian Commodity Exchange, CBOT = Chicago Board of Trade

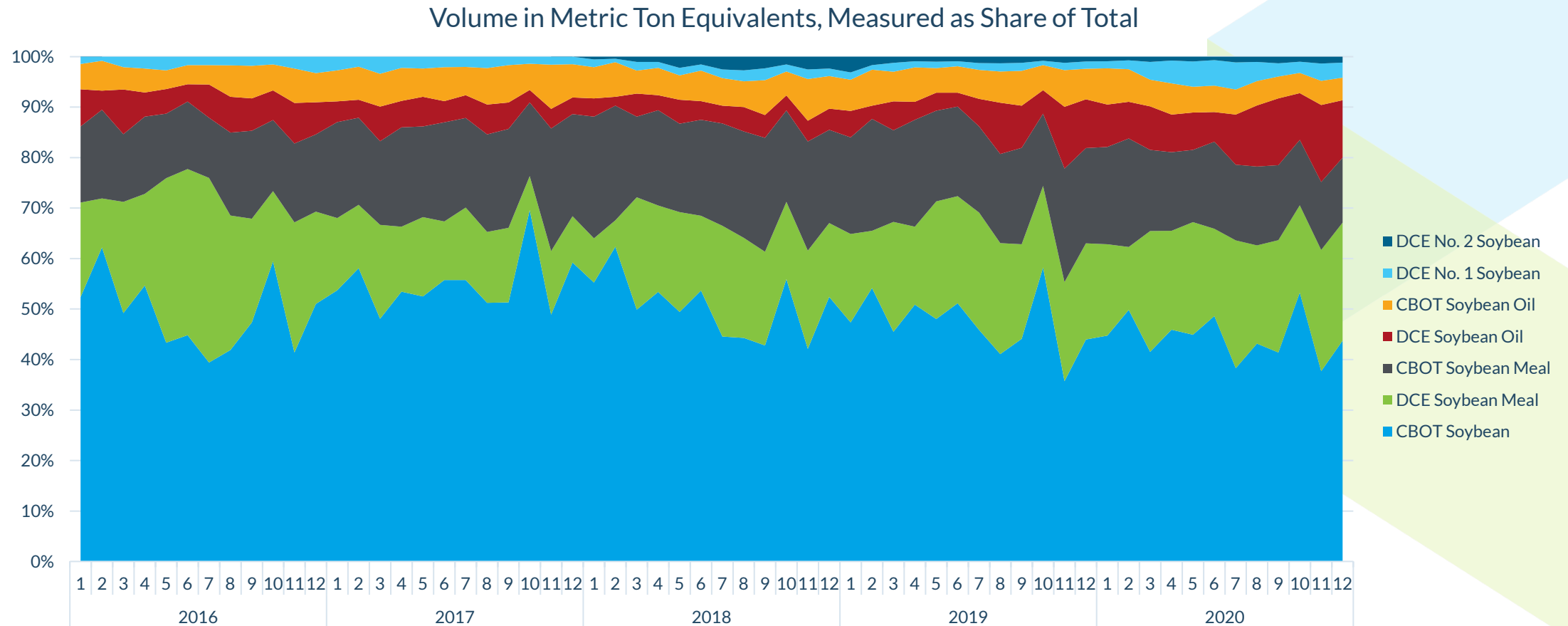
Soy Complex – Growth in Volume over Time

Trading activity picked up in the second half of 2020, but did not match the peak set in 2016



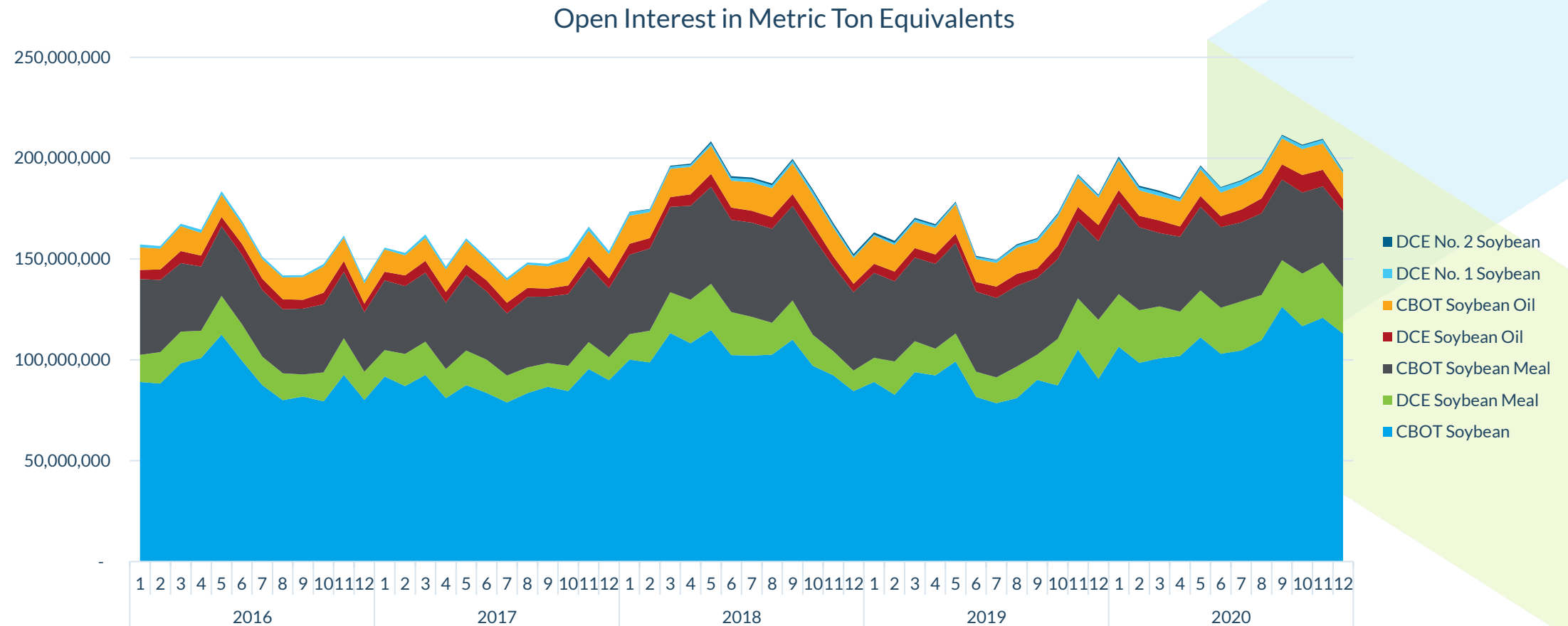
Soy Complex – Change in Relative Volume over Time

Trading activity has been growing faster on DCE than CBOT



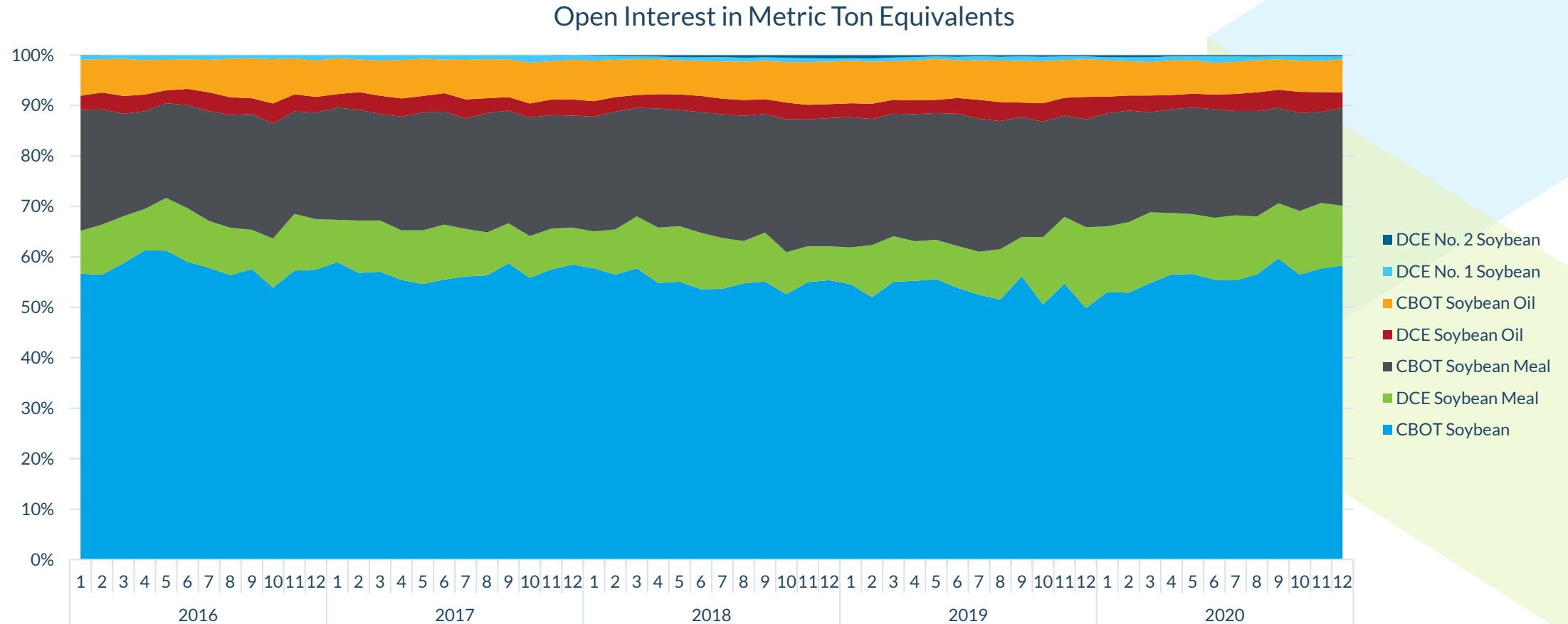
Soy Complex – Growth in Open Interest over Time

Open interest reached record levels in second half of 2020



Soy Complex – Change in Open Interest over Time

China and US exchanges have held roughly equivalent amounts of open interest over the last five years



Canola/Rapeseed and Palm Contracts

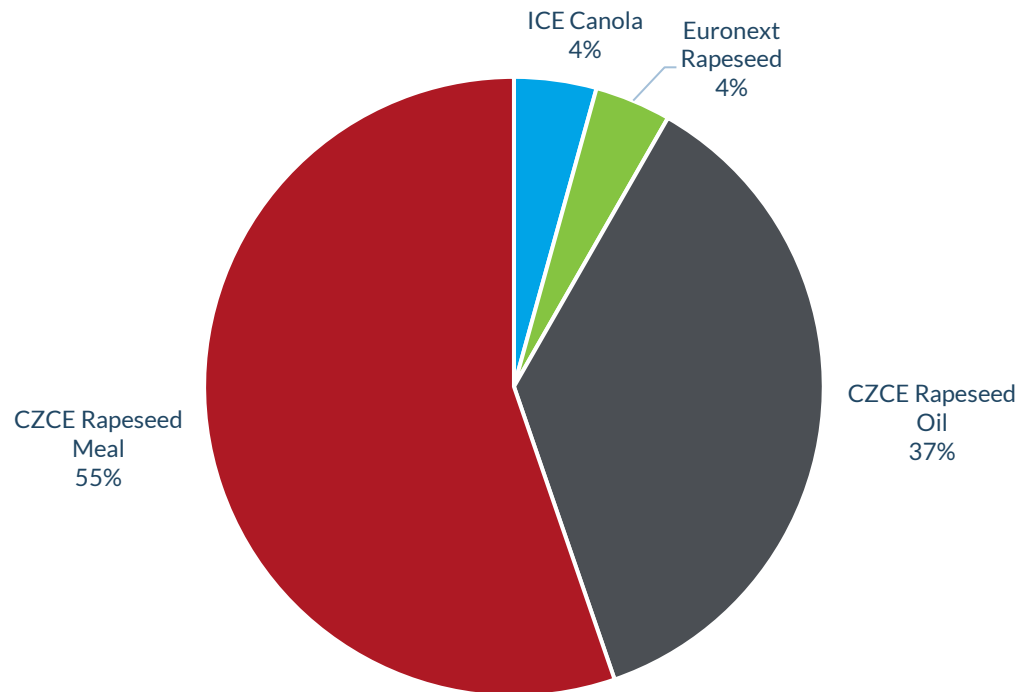
Exchange	Type	Contract	Metric Tons	2020 Volume	2020 OI	Adjusted Volume	Adjusted OI
ICE Futures U.S.	Future	Canola	20.0	6,219,990	201,638	124,399,800	4,032,760
Euronext Derivatives Market	Future	Rapeseed	50.0	2,304,362	96,309	115,218,100	4,815,450
Zhengzhou Commodity Exchange	Future	Rapeseed (RS)	10.0	2,378	0	23,780	0
Zhengzhou Commodity Exchange	Future	Rapeseed Oil (OI)	10.0	105,447,334	161,387	1,054,473,340	1,613,870
Zhengzhou Commodity Exchange	Future	Rapeseed Meal (RM)	10.0	159,893,801	478,995	1,598,938,010	4,789,950
Dalian Commodity Exchange	Future	RBD Palm Olein	10.0	315,167,096	416,392	3,151,670,960	4,163,920
Asia Pacific Exchange	Future	Crude RBD Palm Olein	10.0	7,667,088	22,439	76,670,880	224,390
Malaysia Derivatives Exchange	Future	Crude Palm Oil (FCPO)	25.0	14,606,684	165,594	365,167,100	4,139,850

Note: Adjusted volume and open interest were calculated by multiplying the number of contracts by the number of metric tons represented by each contract.

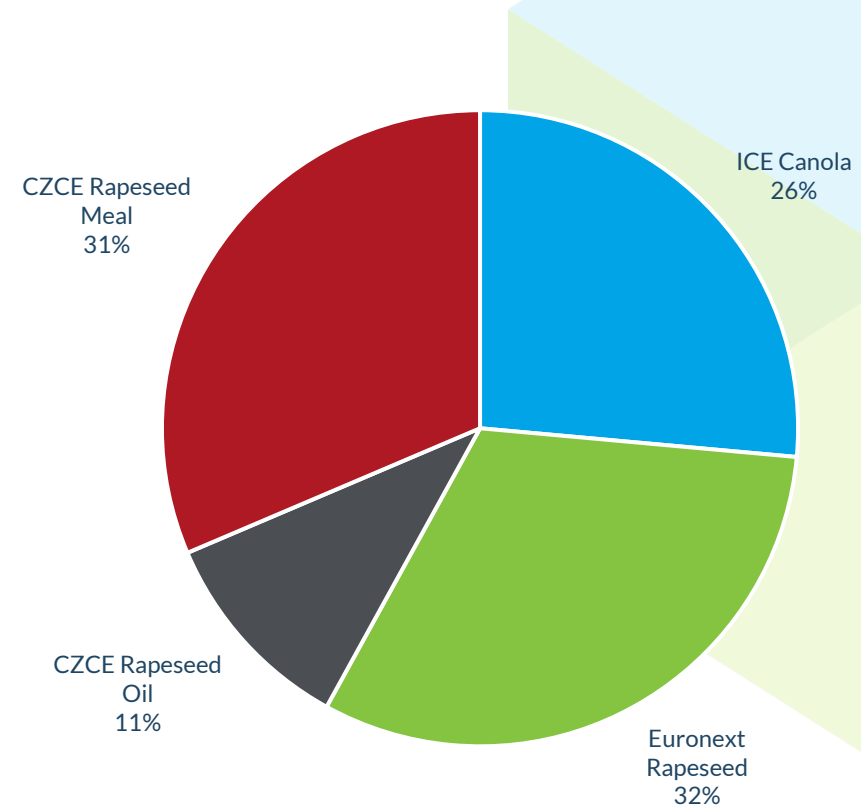
Rapeseed/Canola – Comparing China, EU and US

ICE and Euronext account for less than 10% of volume but more than half of open interest

Volume in Metric Ton Equivalents



Open Interest in Metric Ton Equivalents

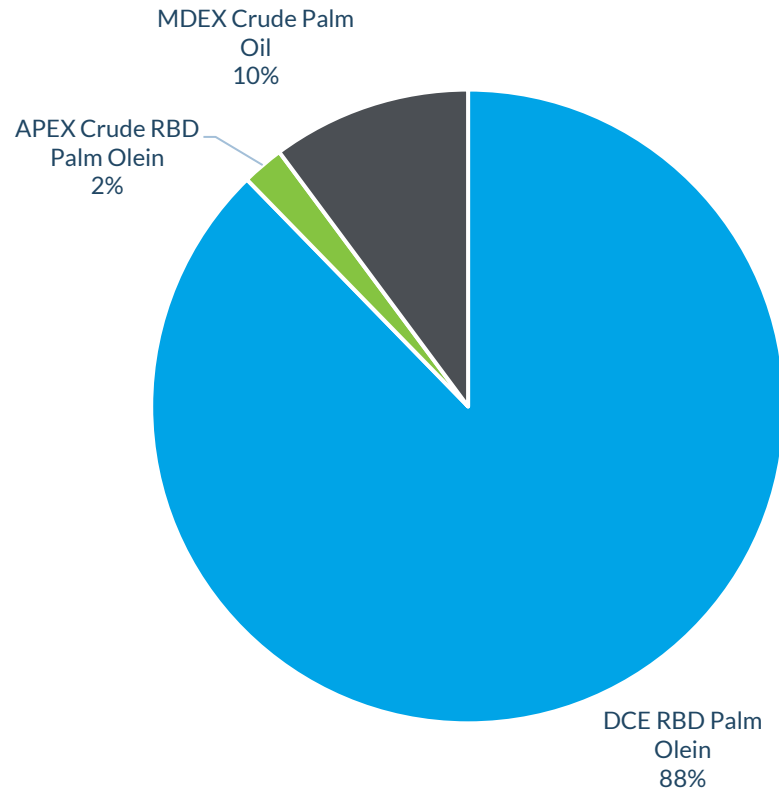


Note: CZCE = Zhengzhou Commodity Exchange, ICE = ICE Futures US

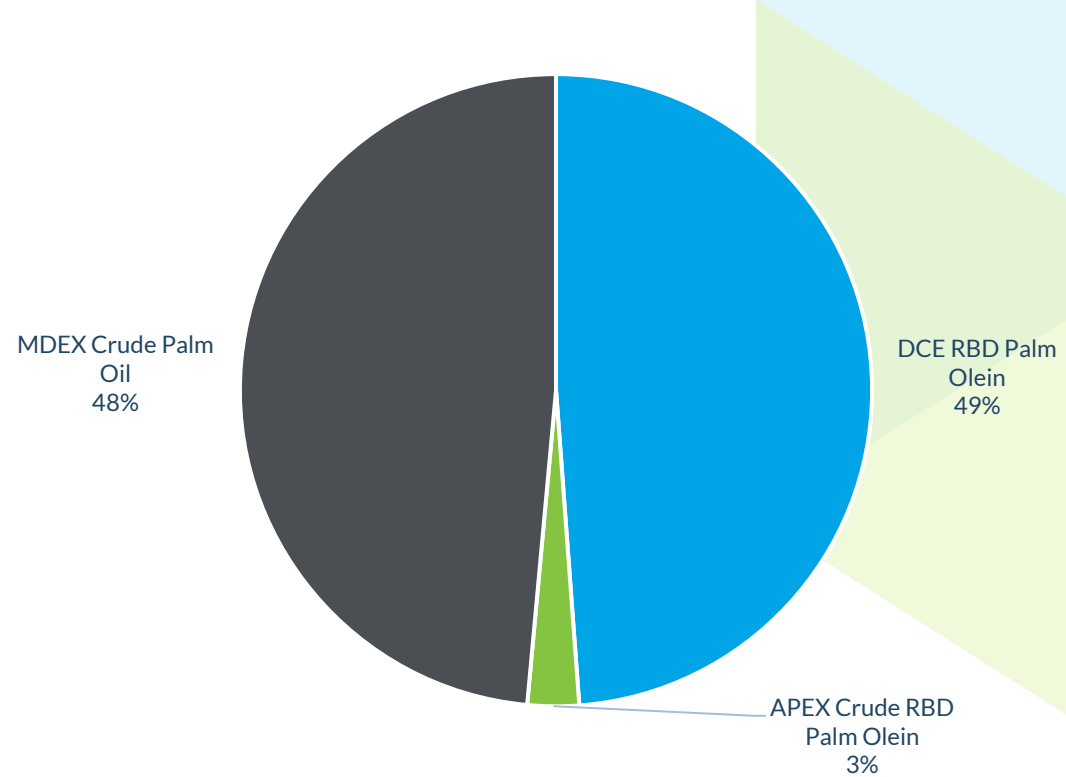
Palm Oil- Comparing China, Malaysia and Singapore

Open interest reached record levels in second half of 2020

Volume in Metric Ton Equivalents



Open Interest in Metric Ton Equivalents



Note: DCE = Dalian Commodity Exchange, APEX = Asia Pacific Exchange, MDEX = Malaysia Derivatives Exchange

Sugar and Cotton Contracts

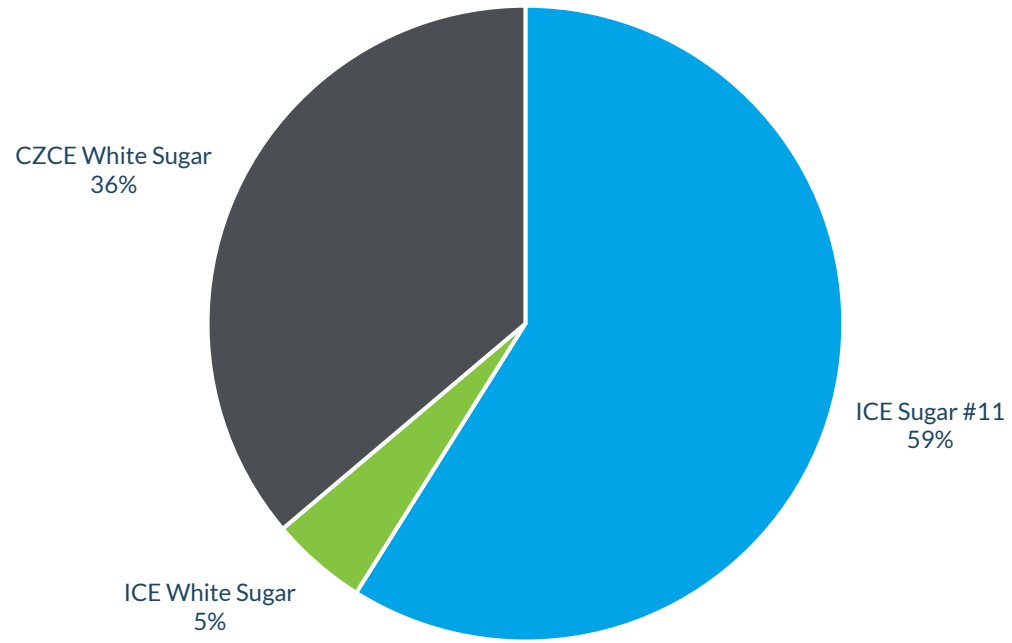
Exchange	Type	Contract	Metric Tons	2020 Volume	2020 OI	Adjusted Volume	Adjusted OI
ICE Futures U.S.	Future	Sugar #11	50.8	39,949,270	1,066,198	2,029,422,916	54,162,858
ICE Futures Europe	Future	White Sugar	50.0	3,373,567	91,421	168,678,350	4,571,050
Zhengzhou Commodity Exchange	Future	White Sugar (SR)	10.0	124,551,207	559,029	1,245,512,070	5,590,290
ICE Futures U.S.	Future	Cotton #2	22.7	8,324,233	228,235	188,960,089	5,180,935
Zhengzhou Commodity Exchange	Future	Cotton No. 1 (CF)	5.0	108,338,363	635,692	541,691,815	3,178,460

Note: Adjusted volume and open interest were calculated by multiplying the number of contracts by the number of metric tons represented by each contract.

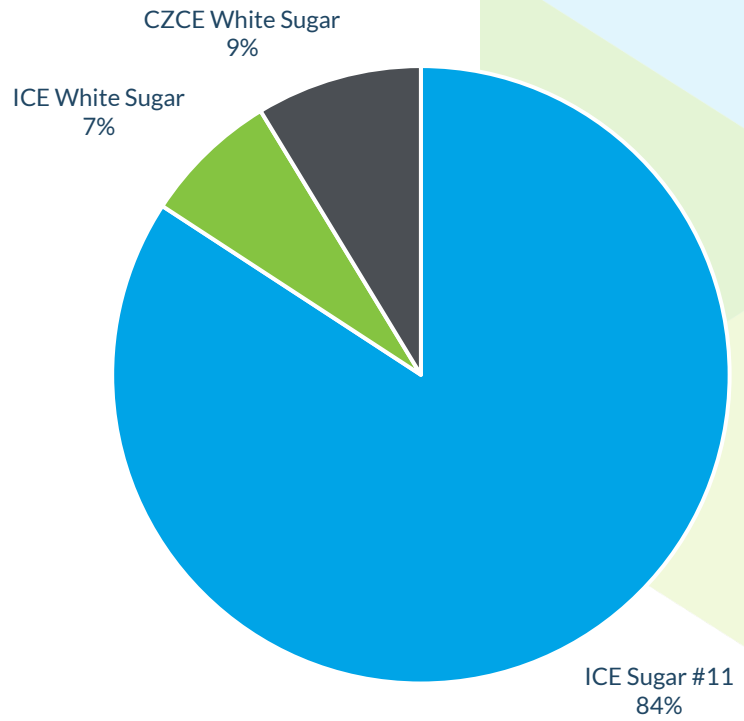
Sugar – Comparing China, US and UK Markets

ICE US remains the primary center for price discovery and risk management

Volume in Metric Ton Equivalents



Open Interest in Metric Ton Equivalents

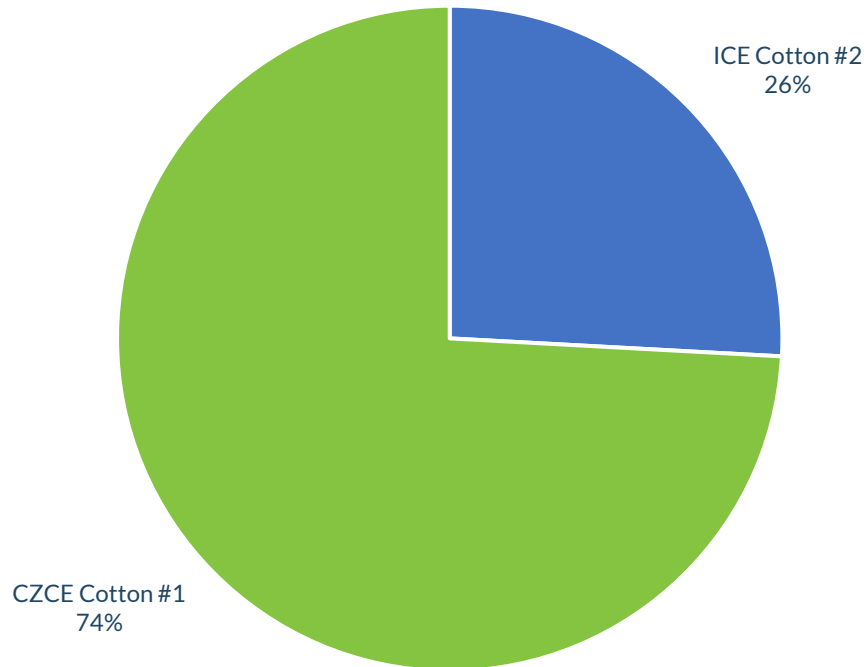


Note: CZCE = Zhengzhou Commodity Exchange; ICE Sugar #11 traded on ICE Futures US, ICE White Sugar traded on ICE Futures Europe

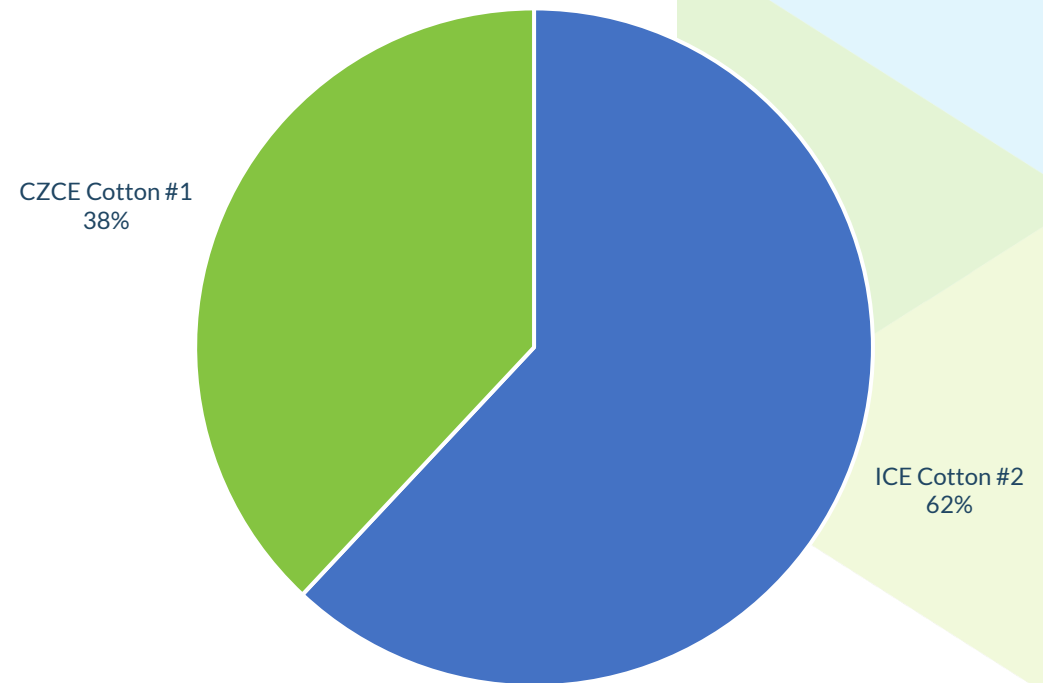
Cotton – Comparing China and US Markets

China's CZCE has become an important center for price discovery and risk management

Volume in Metric Ton Equivalentents



Open Interest in Metric Ton Equivalentents



Wheat and Corn Contracts

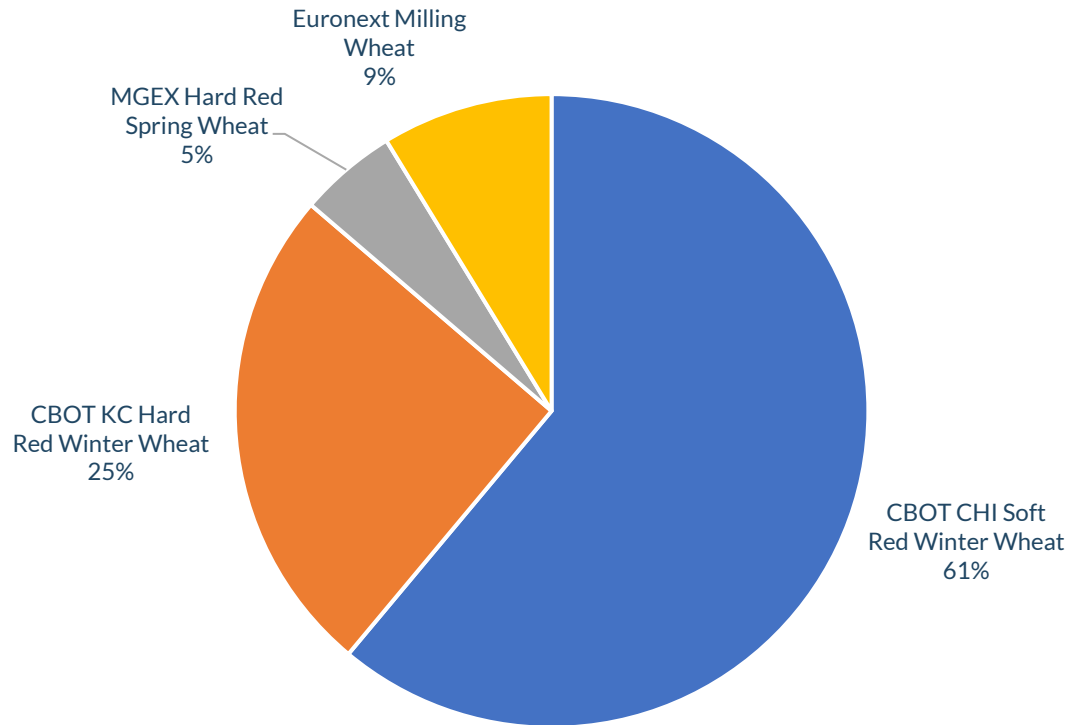
Exchange	Type	Contract	Metric Tons	2020 Volume	2020 OI	Adjusted Volume	Adjusted OI
Chicago Board of Trade	Future	Chicago Soft Red Winter Wheat	136.0	33,365,343	402,613	4,537,686,648	54,755,368
Chicago Board of Trade	Future	KC Hard Red Winter Wheat	136.0	13,761,590	217,162	1,871,576,240	29,534,032
Minneapolis Grain Exchange	Future	Hard Red Spring Wheat	136.0	2,730,870	75,785	371,398,320	10,306,760
Euronext Derivatives Market	Future	Milling Wheat	50.0	12,969,205	457,451	648,460,250	22,872,550
Chicago Board of Trade	Future	Corn	127.0	89,753,068	1,750,518	11,398,639,636	222,315,786
Dalian Commodity Exchange	Future	Corn	10.0	177,715,573	1,556,234	1,777,155,730	15,562,340

Note: Adjusted volume and open interest were calculated by multiplying the number of contracts by the number of metric tons represented by each contract.

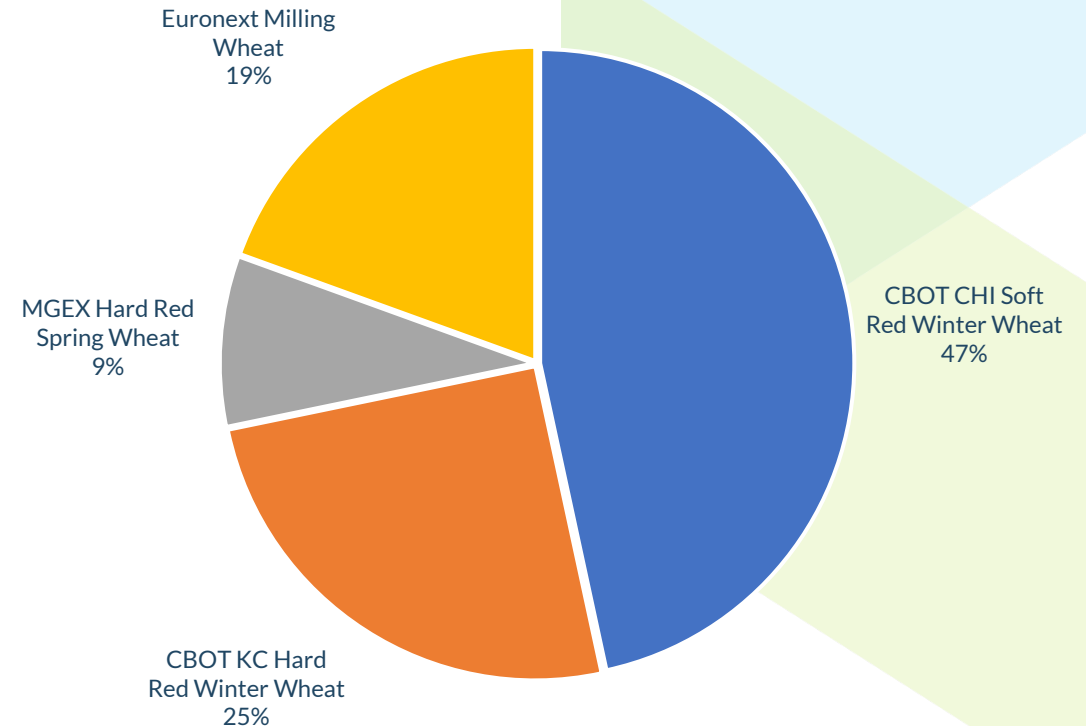
Wheat – Comparing EU and US Markets

The Paris wheat contract is the most heavily traded agricultural futures in Europe

Volume in Metric Ton Equivalents



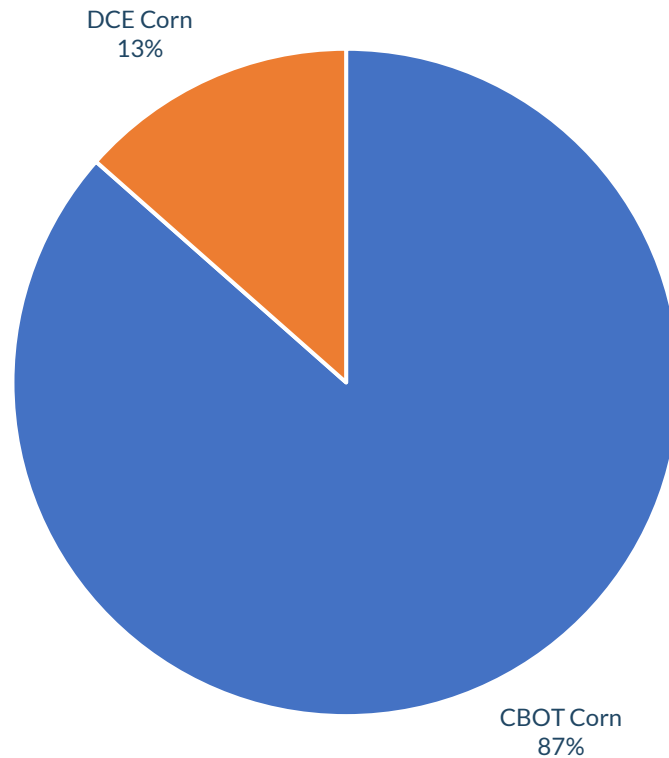
Open Interest in Metric Ton Equivalents



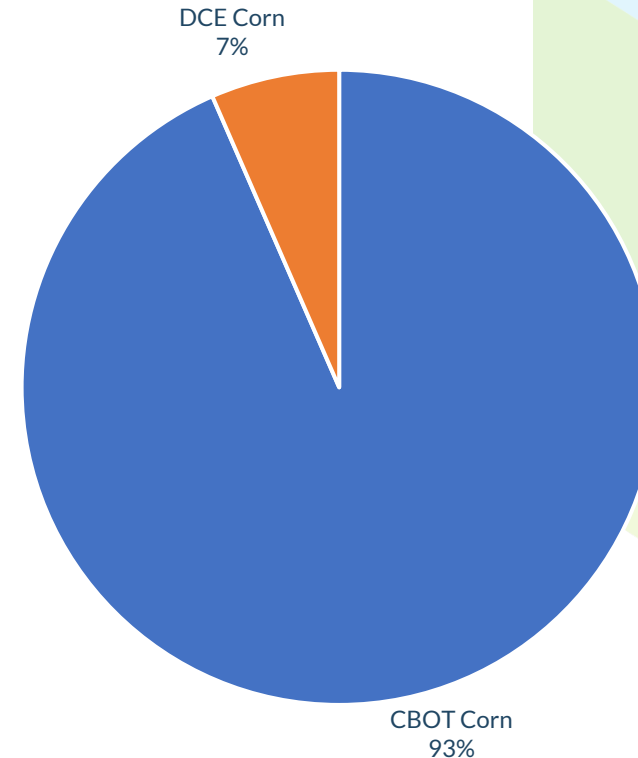
Corn – Comparing China and US Markets

The US remains the dominant center for price discovery and risk management

Volume in Metric Ton Equivalents



Open Interest in Metric Ton Equivalents





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<https://www.fia.org/data-resources>

FIA

The image features the letters 'FIA' in a bold, sans-serif font. The 'F' is dark grey. The 'I' is dark grey with a green triangle on its right side. The 'A' is composed of a green triangle on the left and a blue triangle on the right, with the two overlapping. The background consists of several overlapping geometric shapes: a light green triangle pointing down from the top left, a light blue triangle pointing up from the bottom left, a light green triangle pointing up from the bottom right, and a light blue triangle pointing down from the top right. The overall composition is clean and modern.