



# 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.



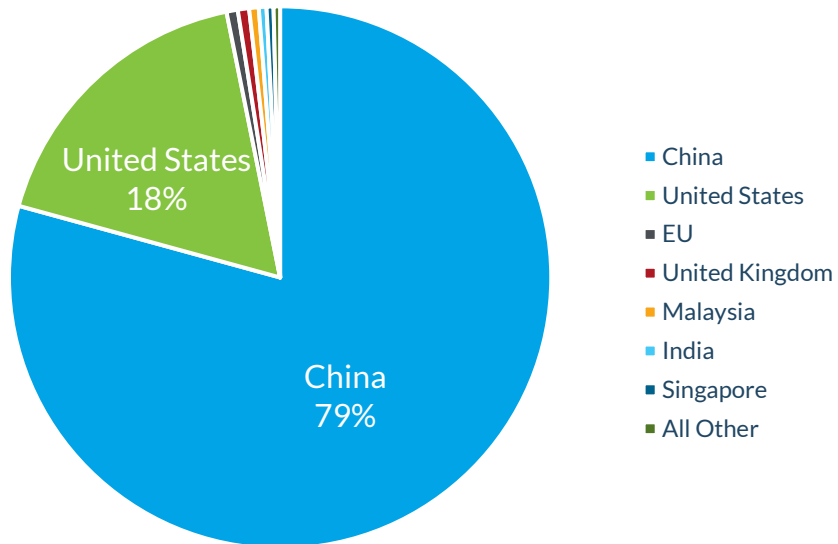
# Understanding the Data

- 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.

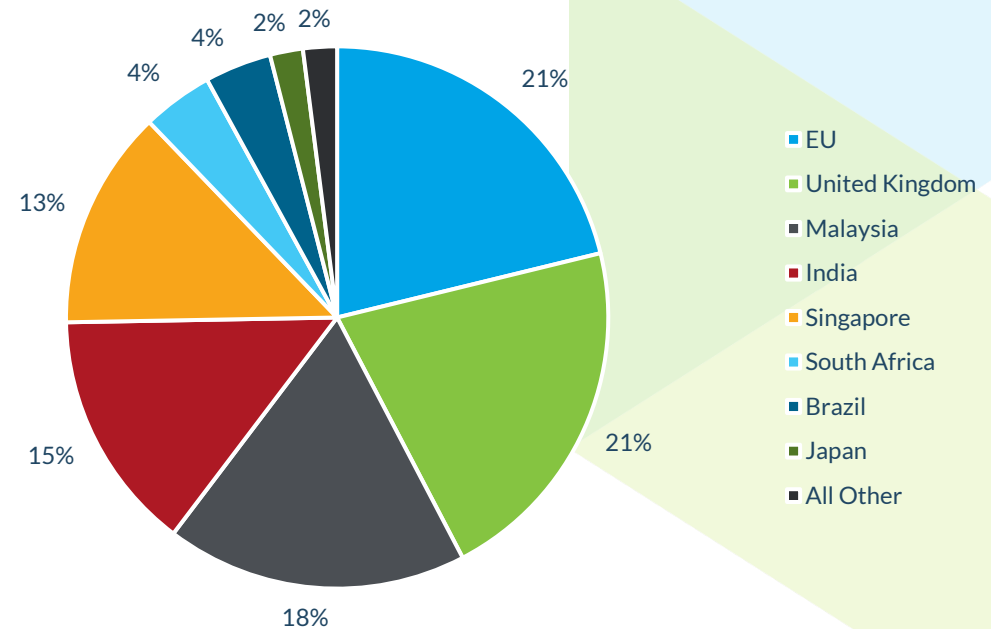
# Trading Volume in 2020 by Location of Exchange

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                      |

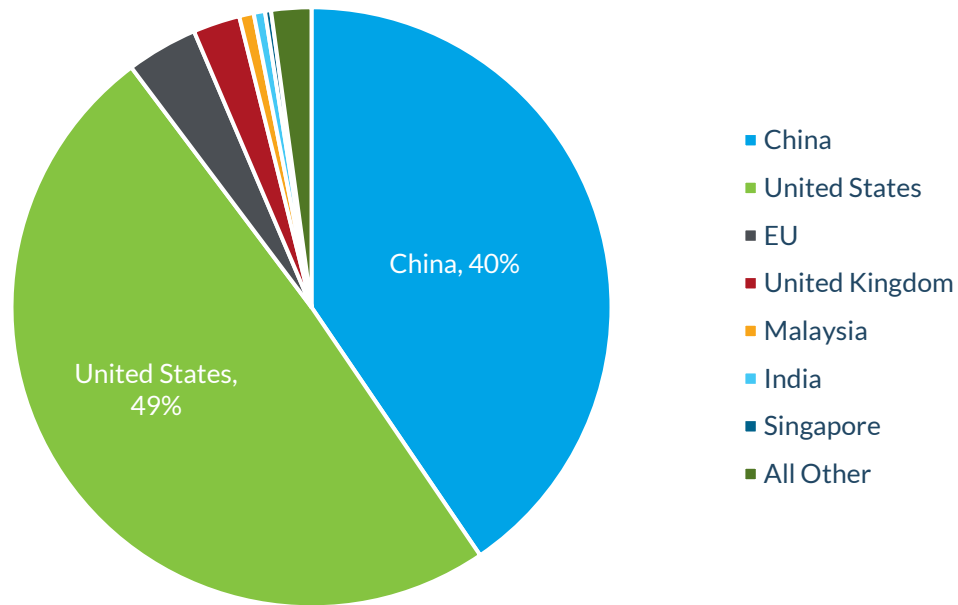


Note: Volume and open interest measured by the number of futures and options contracts traded on exchanges in these jurisdictions.

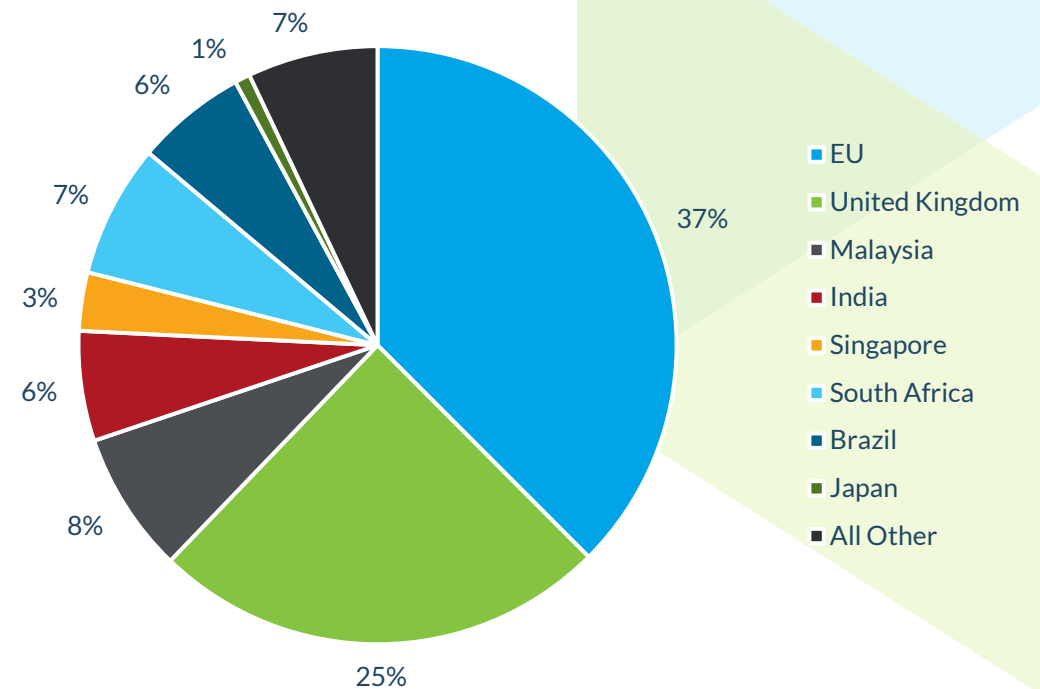
# Open Interest by Location of Exchange

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



# 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      |

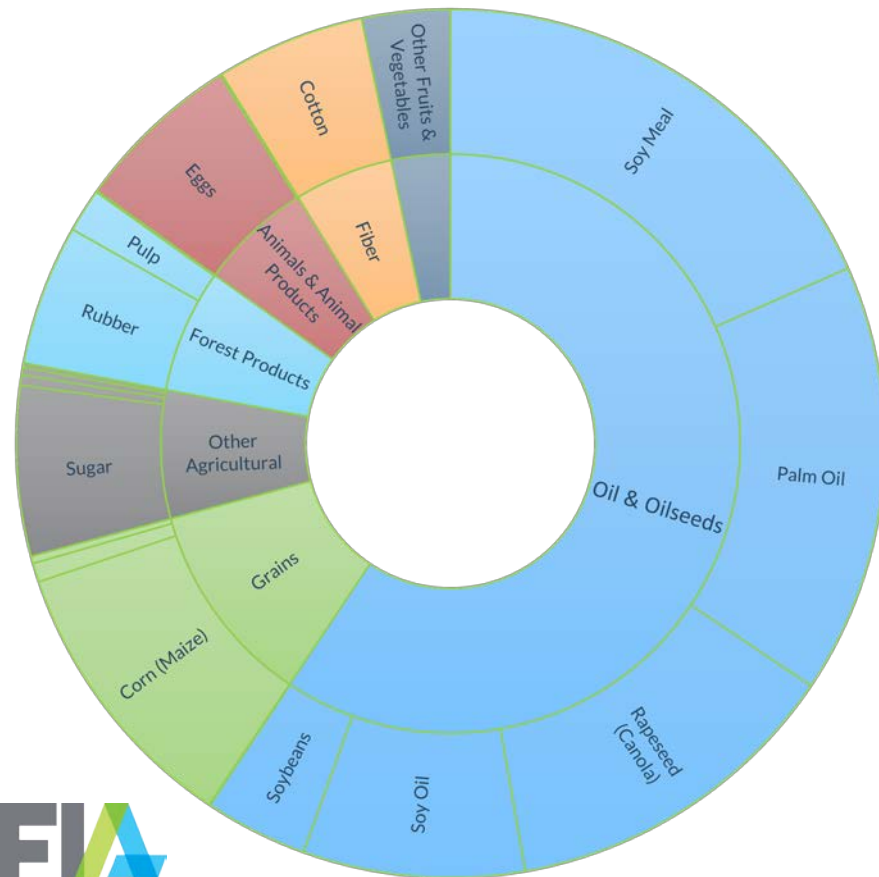


Note: Volume and open interest measured by the number of futures and options contracts traded on exchanges in these jurisdictions.

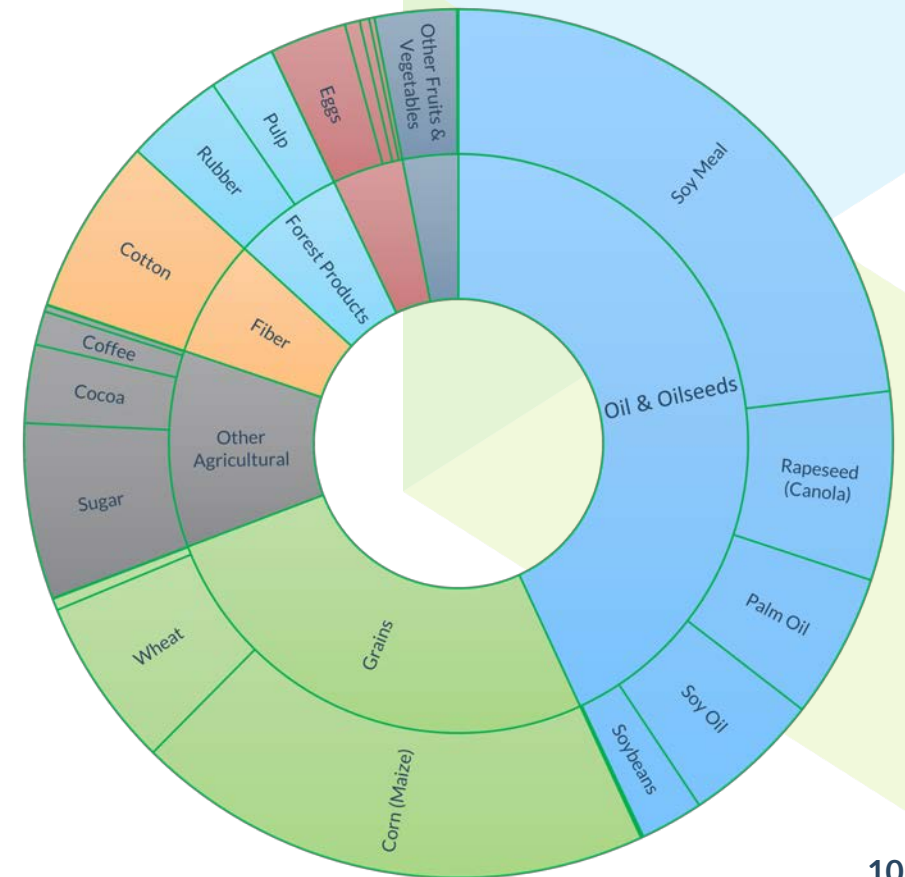
# Non-US Volume and OI by Sector

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

Total 2020 Volume



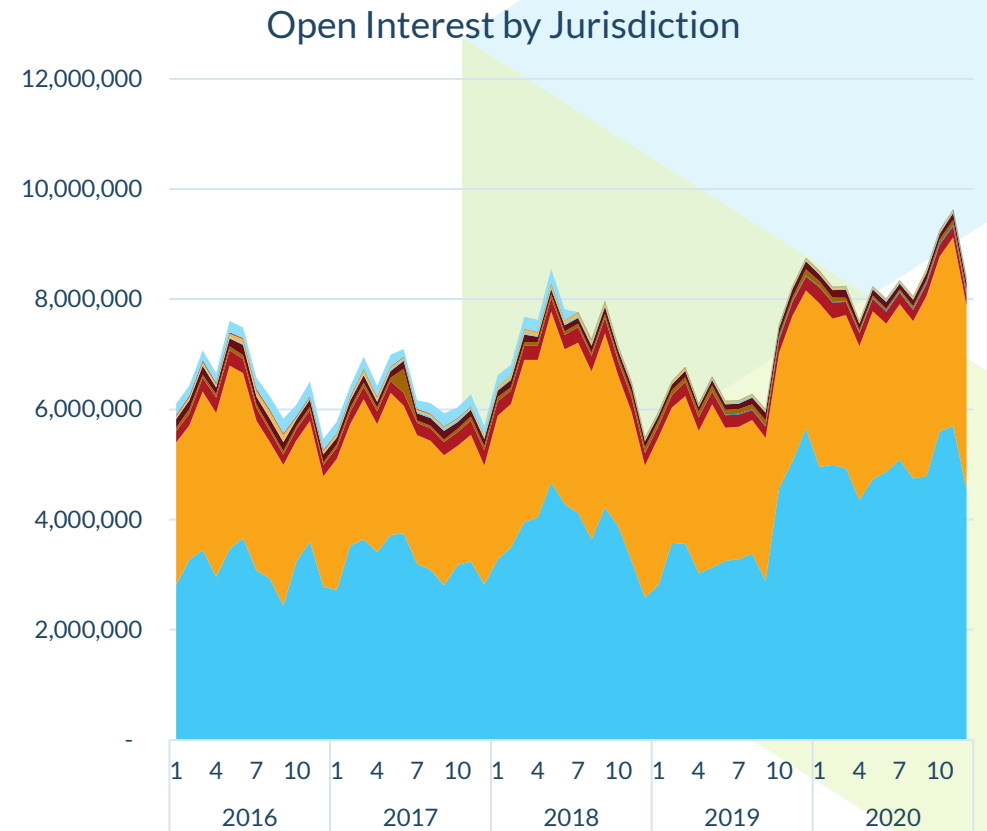
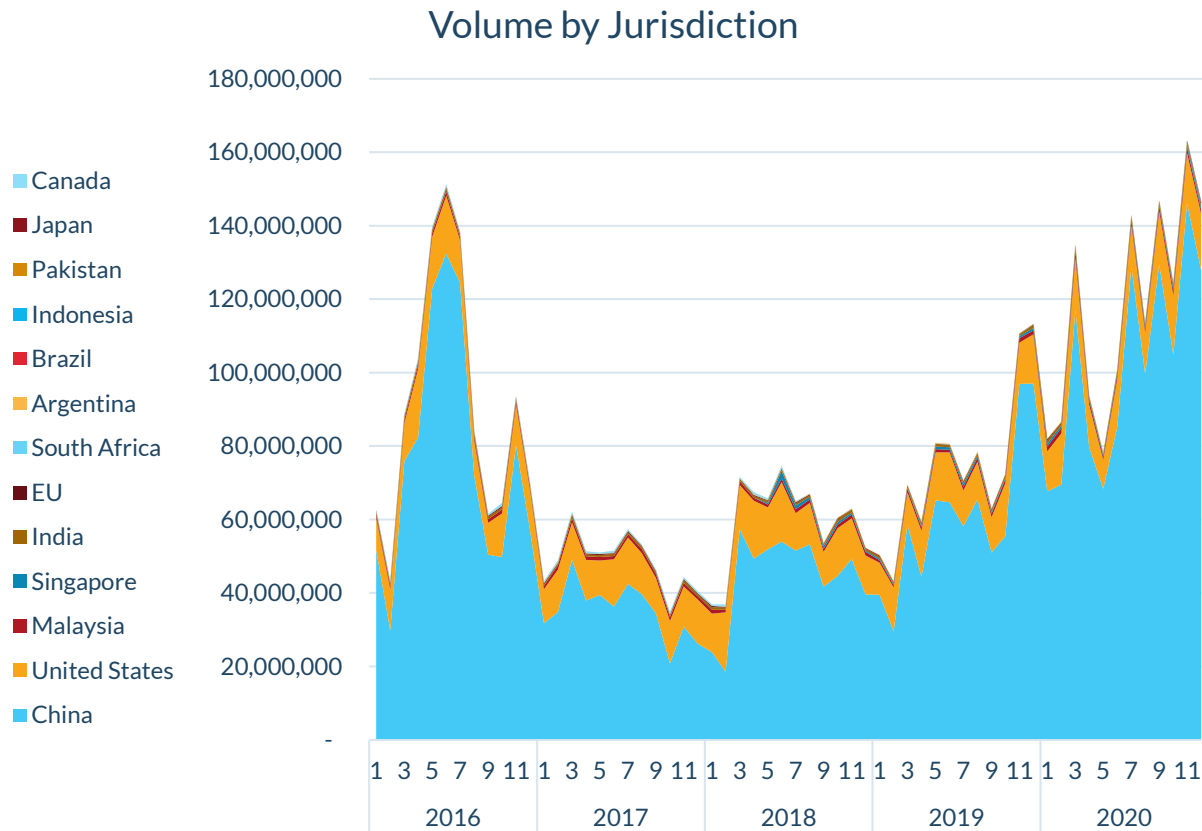
Year-End Open Interest



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

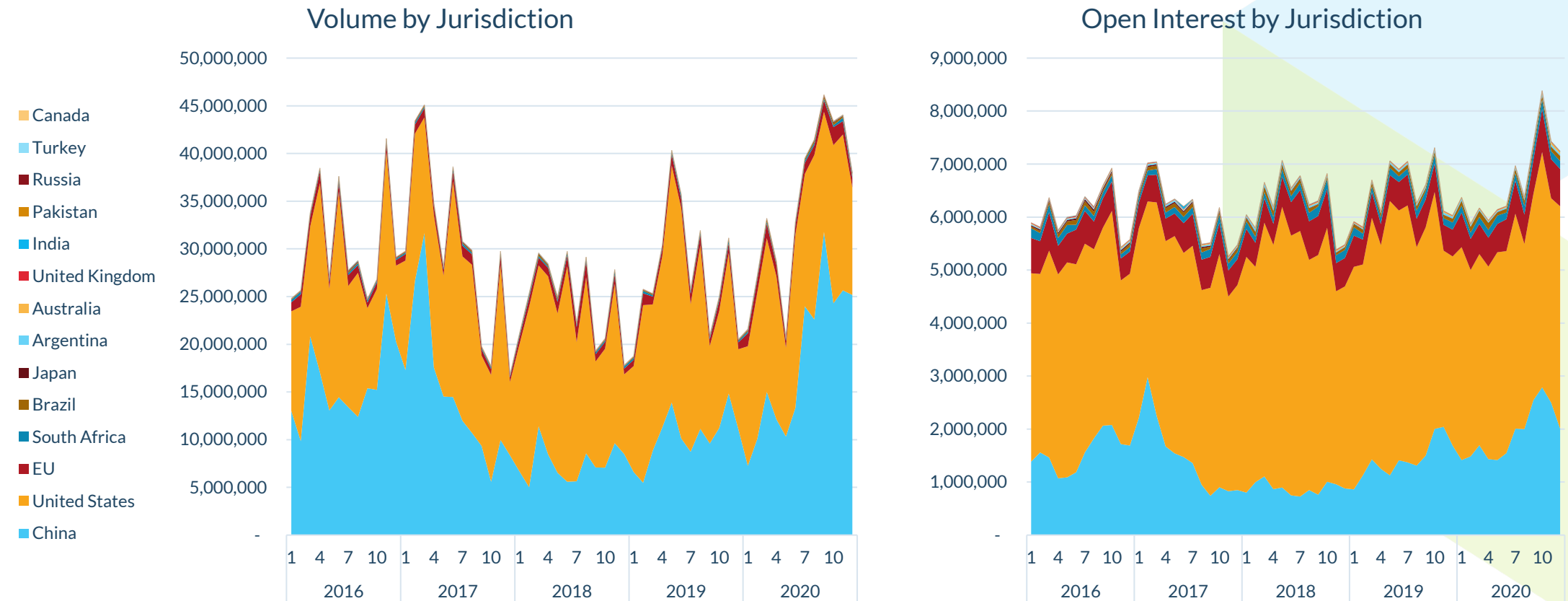


Note: Volume and open interest measured by the number of futures and options contracts traded on exchanges in these jurisdictions.



# Grains – Five Year Trends

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

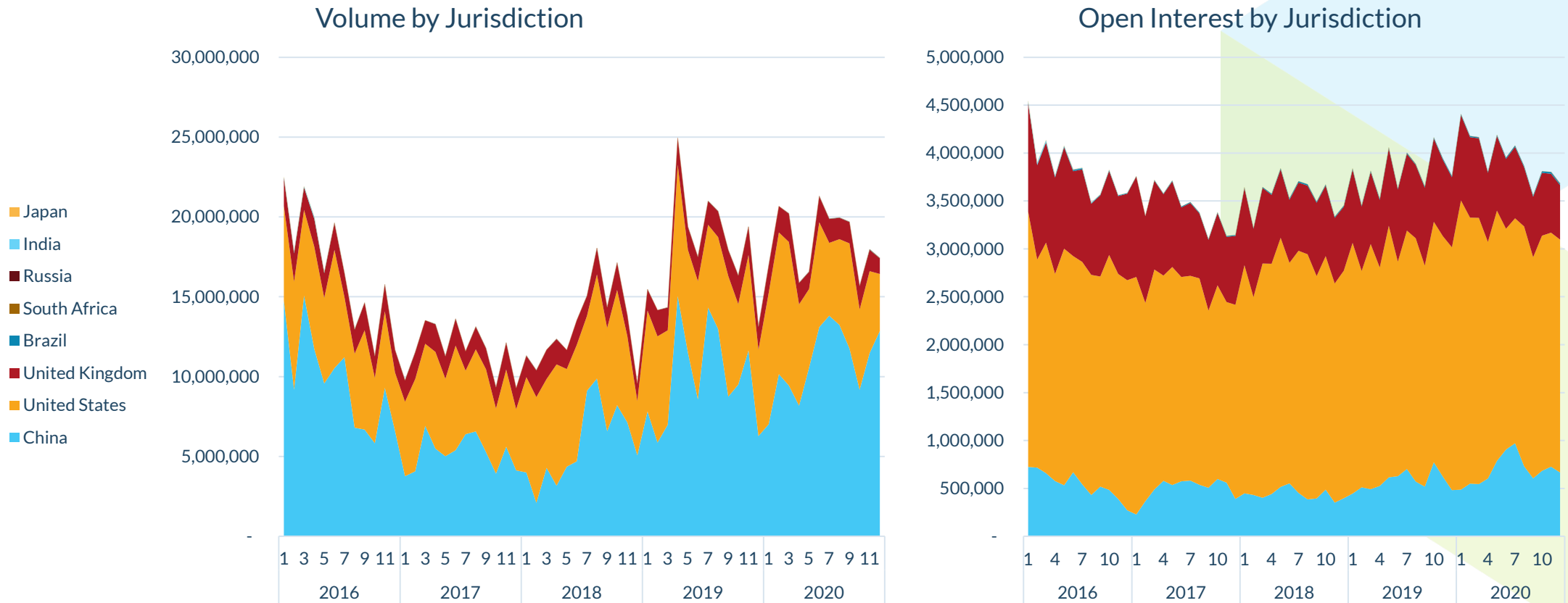


Note: Volume and open interest measured by the number of futures and options contracts traded on exchanges in these jurisdictions.



# 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.

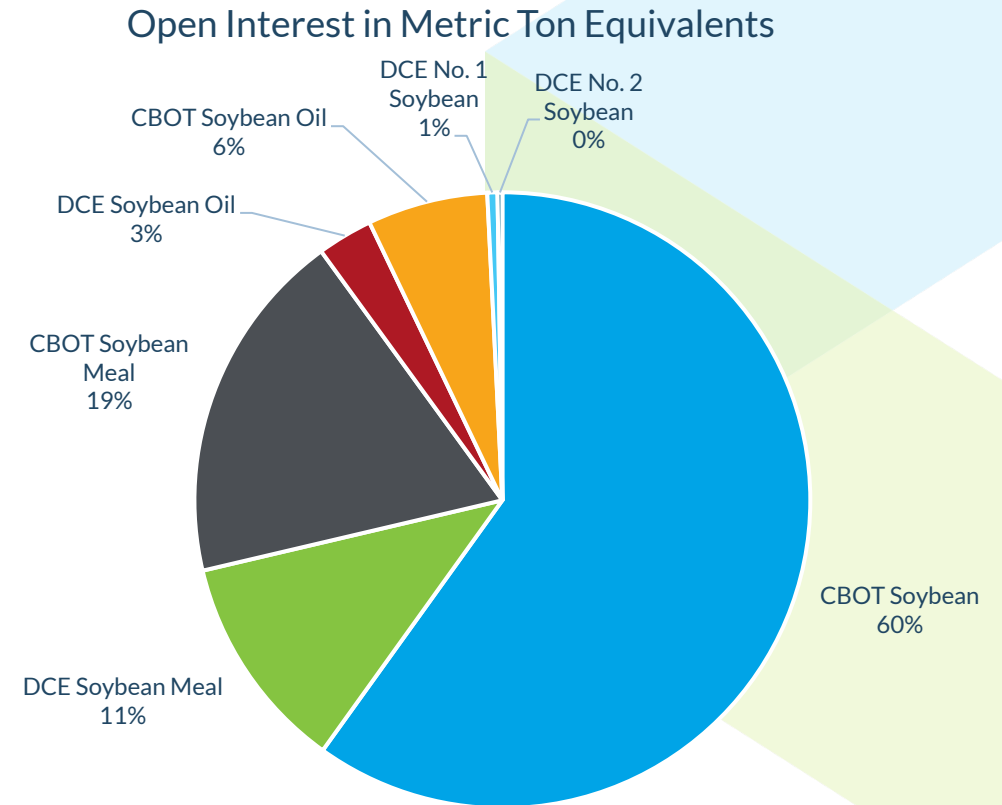
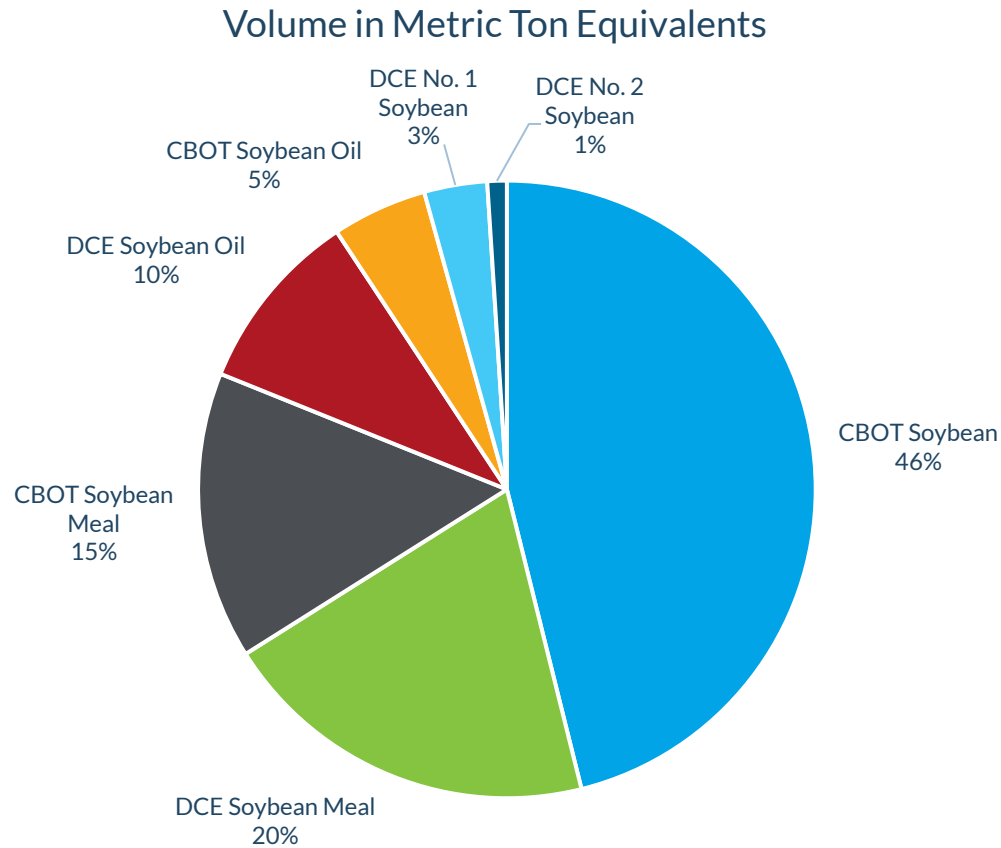
# Soy Contracts on China and US Exchanges

| 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

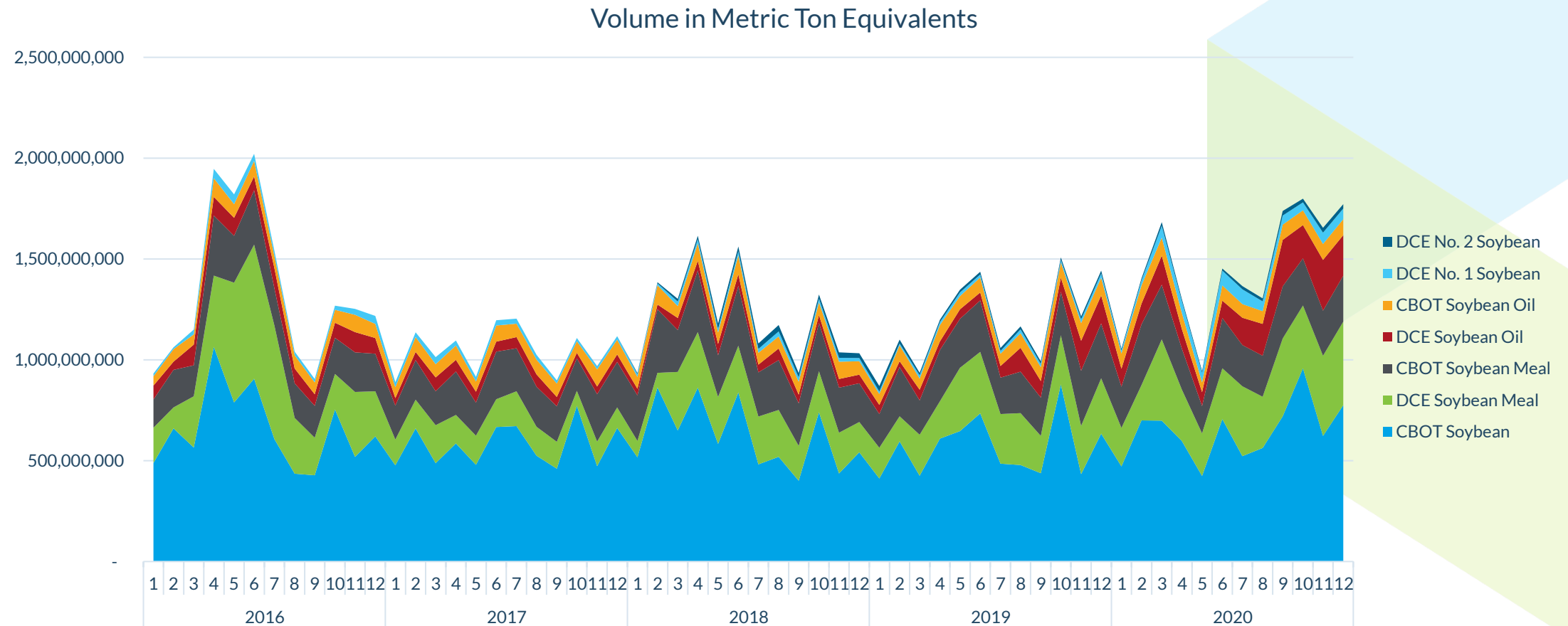


Note: DCE = Dalian Commodity Exchange, CBOT = Chicago Board of Trade



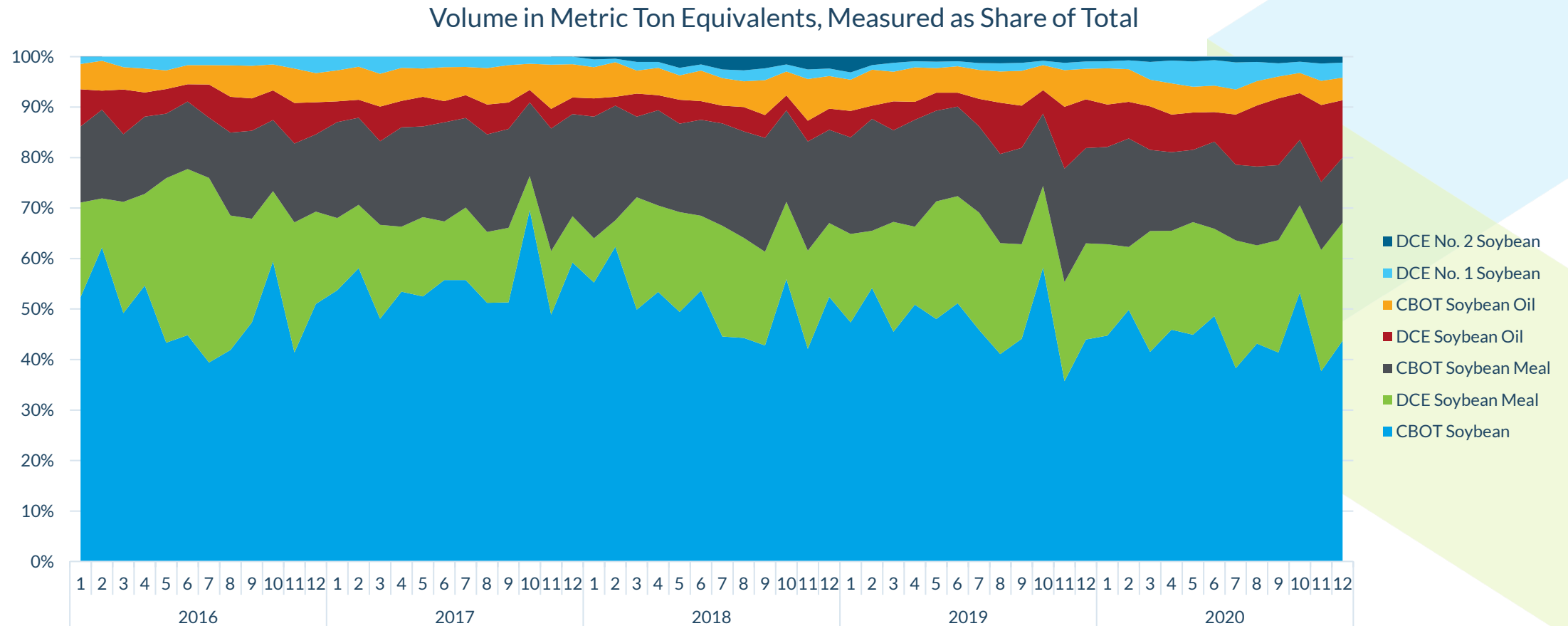
# Soy Complex – Growth in Volume over Time

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



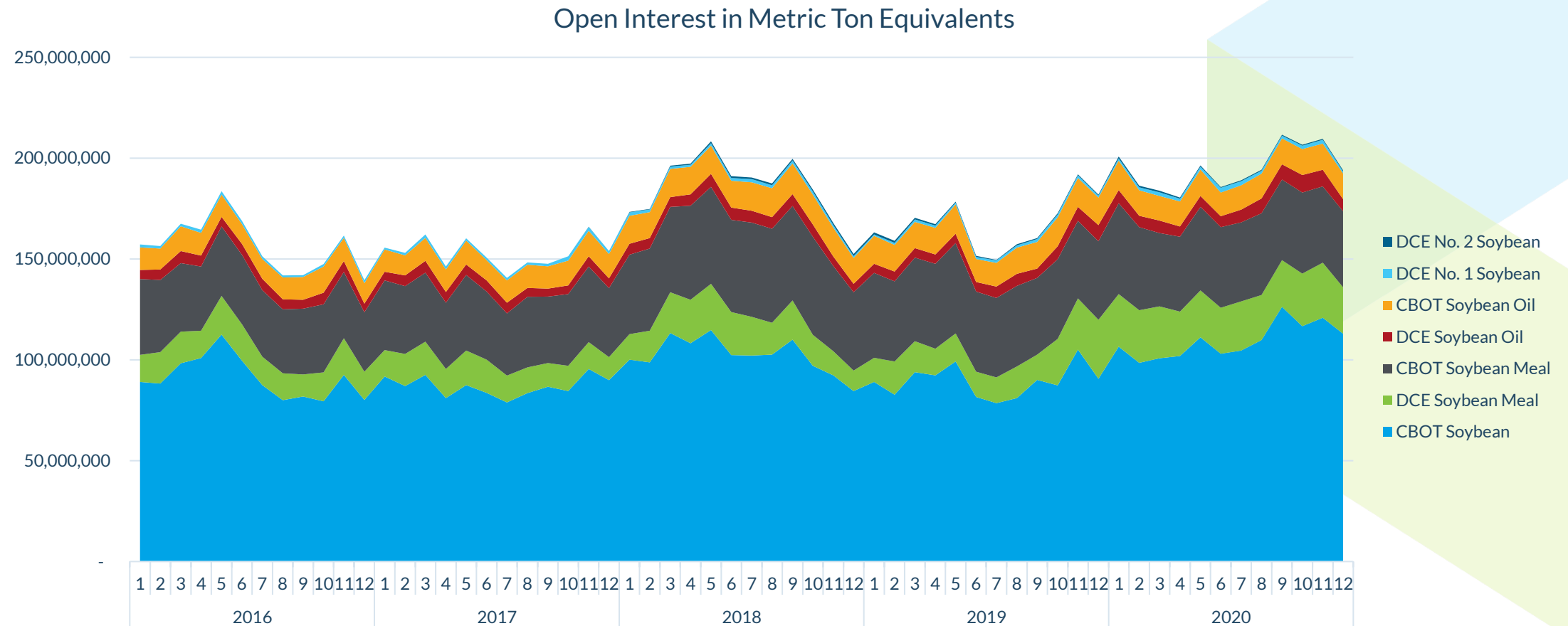
# Soy Complex – Change in Relative Volume over Time

Trading activity has been growing faster on DCE than CBOT



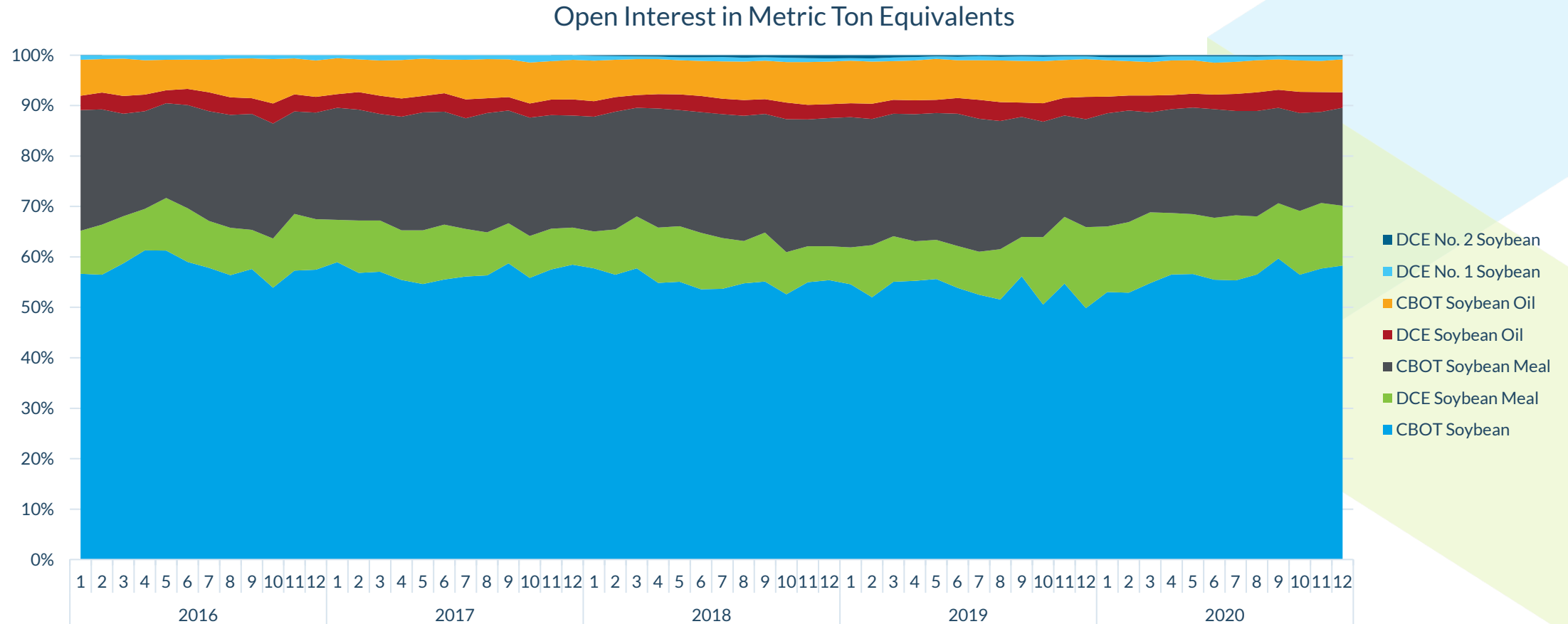
# Soy Complex – Growth in Open Interest over Time

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

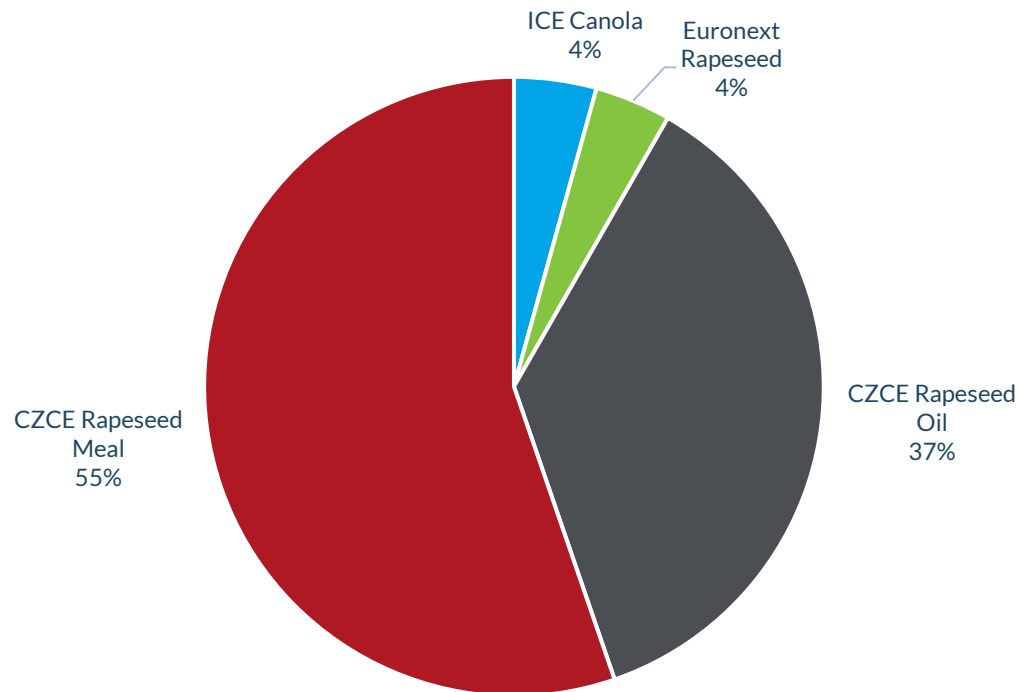
| Exchange                      | Type   | Contract              | Metric Tons | 2020 Volume | 2020 OI | Adjusted Volume | Adjusted OI |
|-------------------------------|--------|-----------------------|-------------|-------------|---------|-----------------|-------------|
| ICE Futures U.S.              | 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.

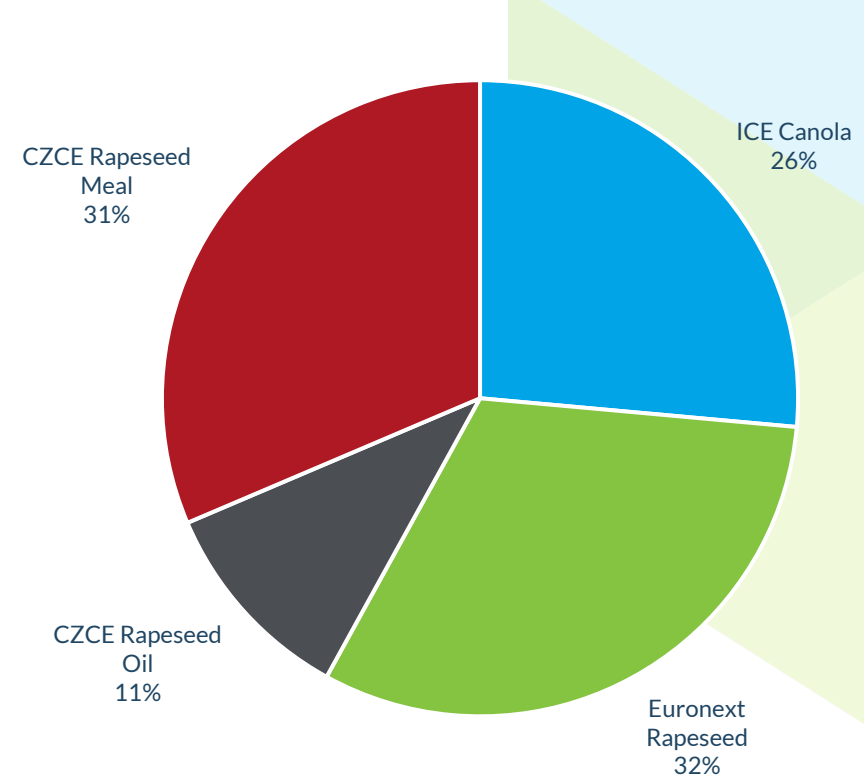
# Rapeseed/Canola – Comparing China, EU and US

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

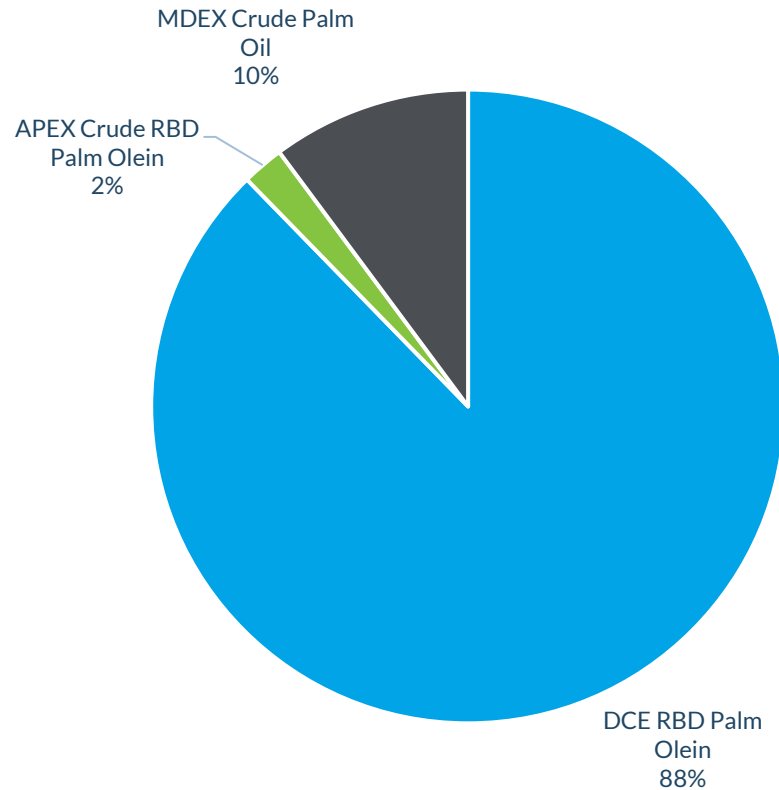


Note: CZCE = Zhengzhou Commodity Exchange, ICE = ICE Futures US

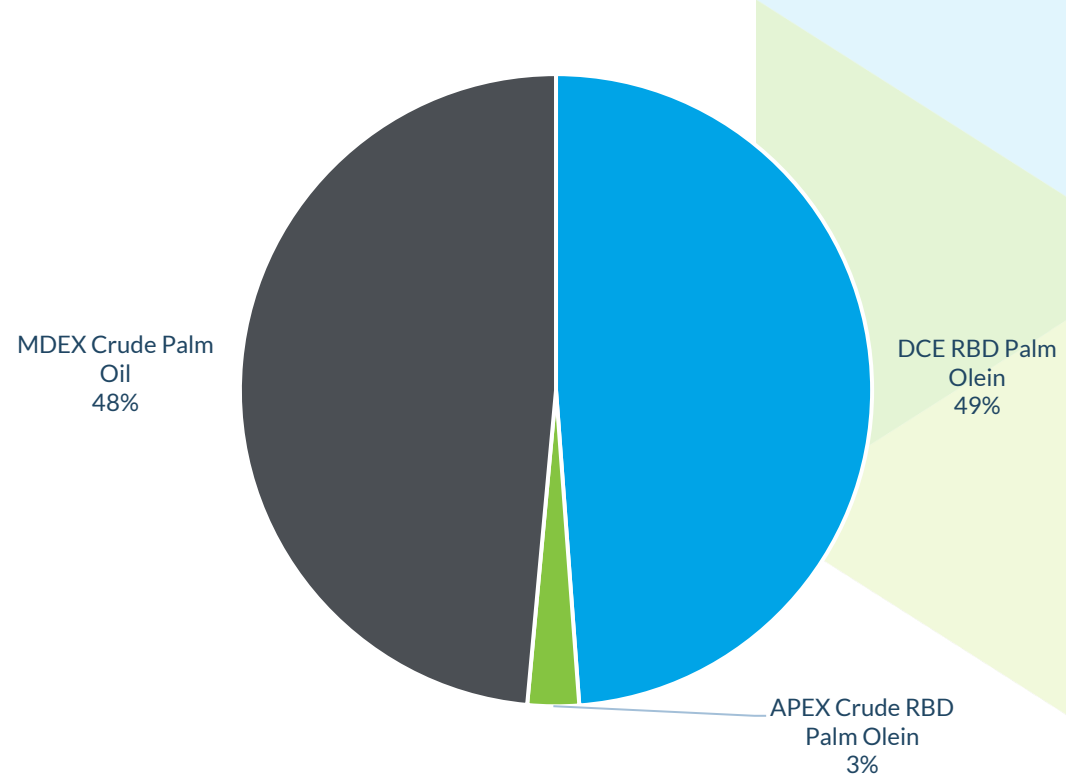
# Palm Oil- Comparing China, Malaysia and Singapore

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   |

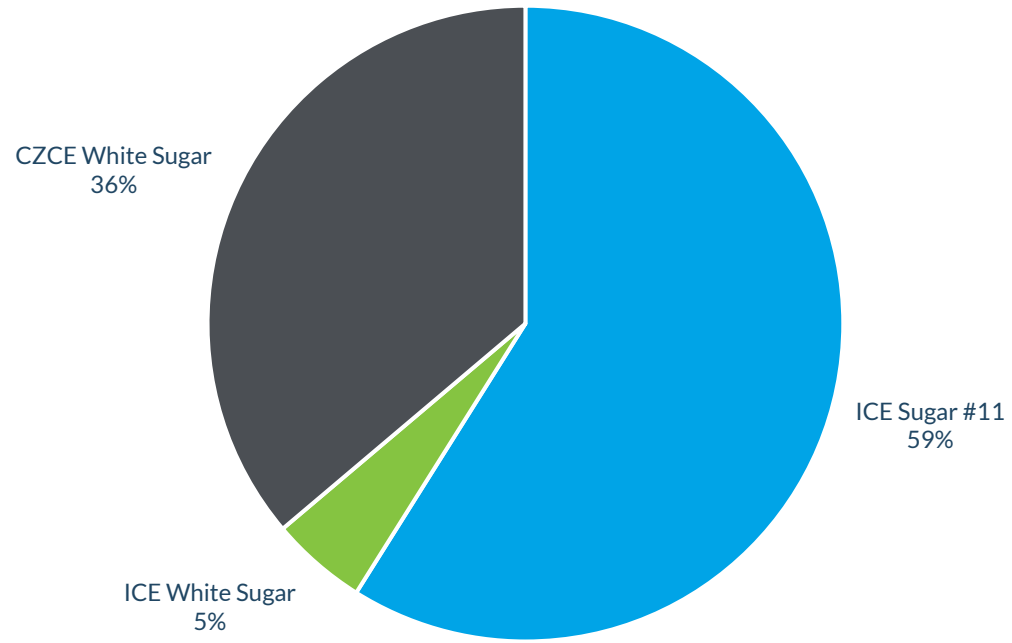
Note: Adjusted volume and open interest were calculated by multiplying the number of contracts by the number of metric tons represented by each contract.



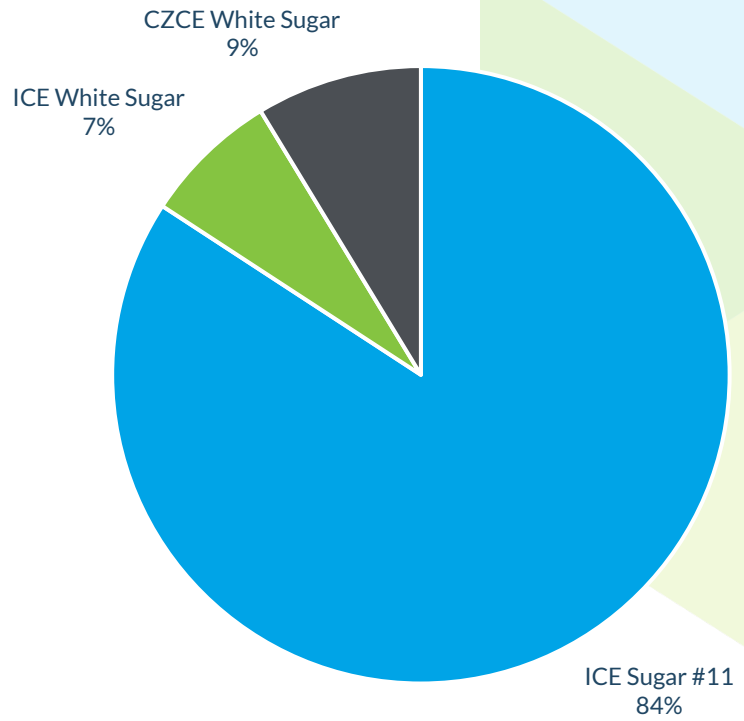
# Sugar – Comparing China, US and UK Markets

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

Volume in Metric Ton Equivalents



Open Interest in Metric Ton Equivalents

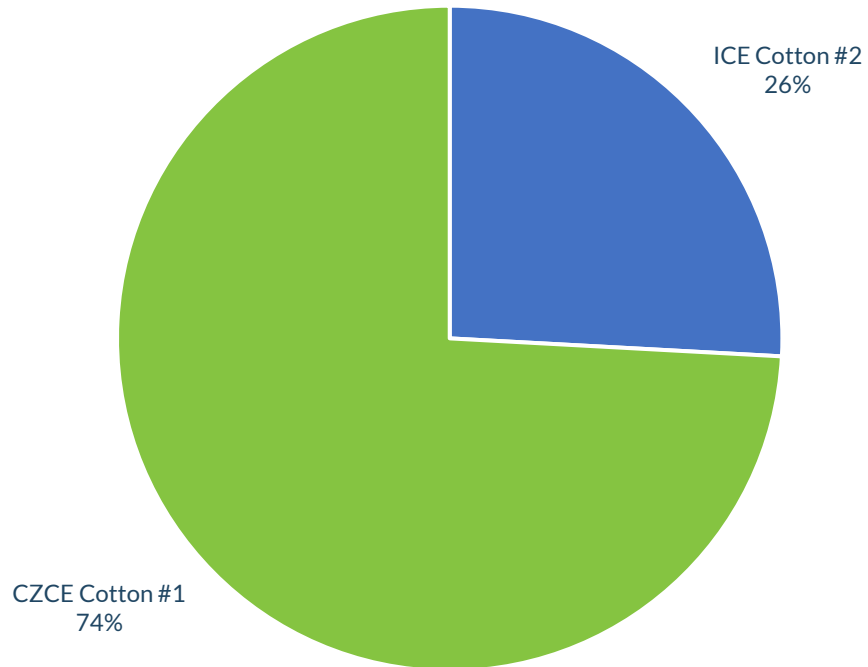


Note: CZCE = Zhengzhou Commodity Exchange; ICE Sugar #11 traded on ICE Futures US, ICE White Sugar traded on ICE Futures Europe

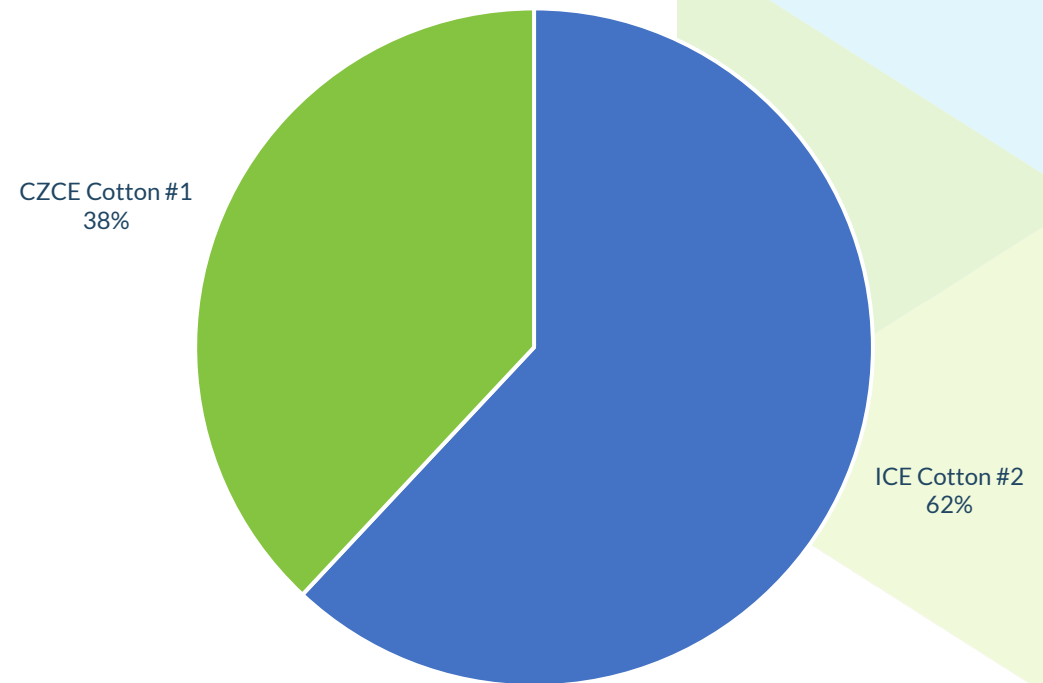
# Cotton – Comparing China and US Markets

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

Volume in Metric Ton Equivalents



Open Interest in Metric Ton Equivalents



# Wheat and Corn Contracts

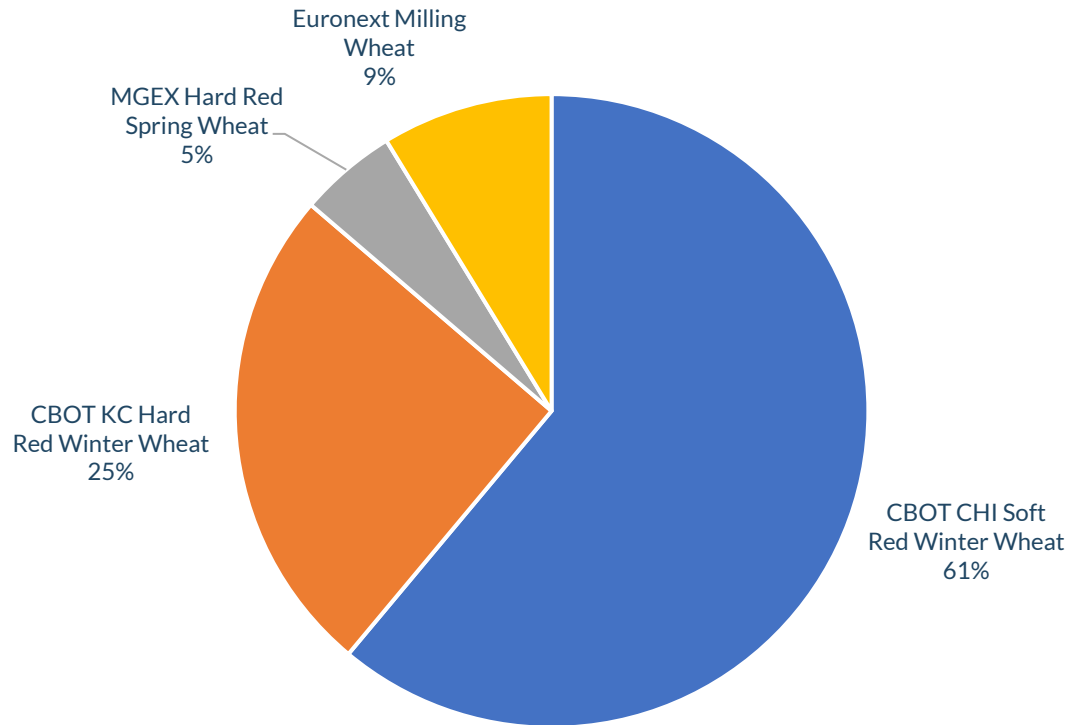
| Exchange                    | Type   | Contract                      | Metric Tons | 2020 Volume | 2020 OI   | Adjusted Volume | Adjusted OI |
|-----------------------------|--------|-------------------------------|-------------|-------------|-----------|-----------------|-------------|
| Chicago Board 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.

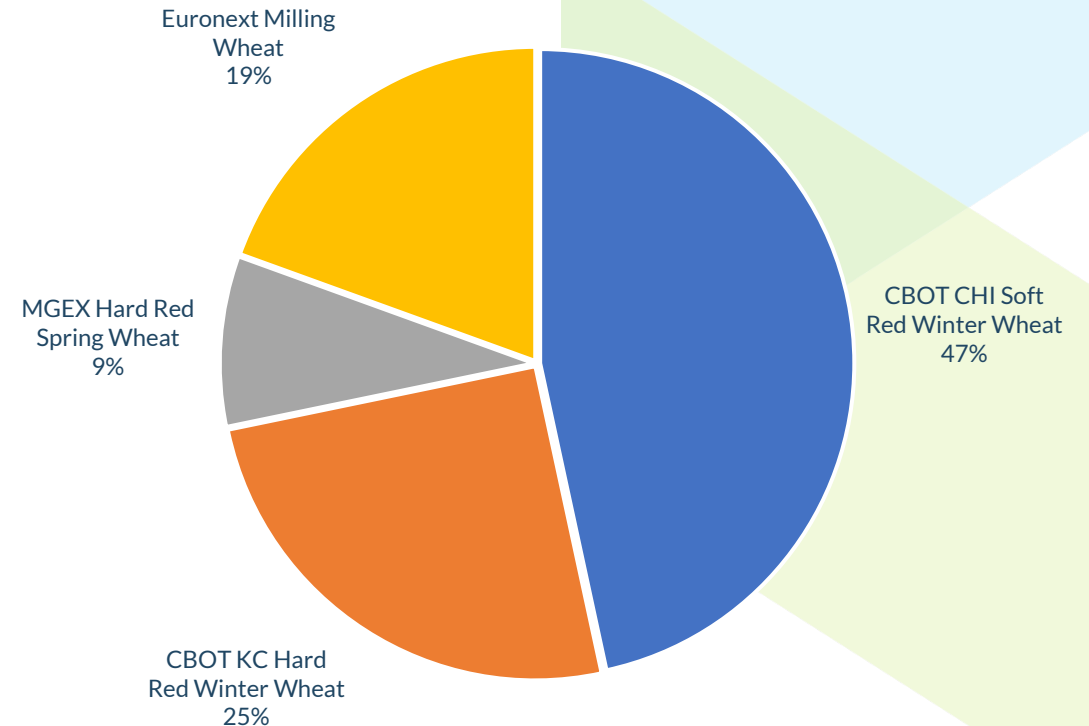
# Wheat – Comparing EU and US Markets

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

Volume in Metric Ton Equivalents



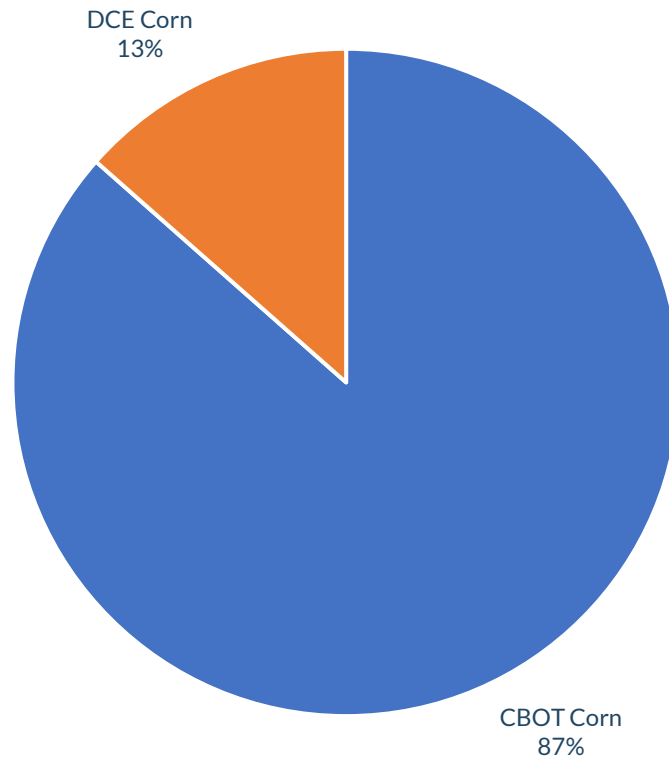
Open Interest in Metric Ton Equivalents



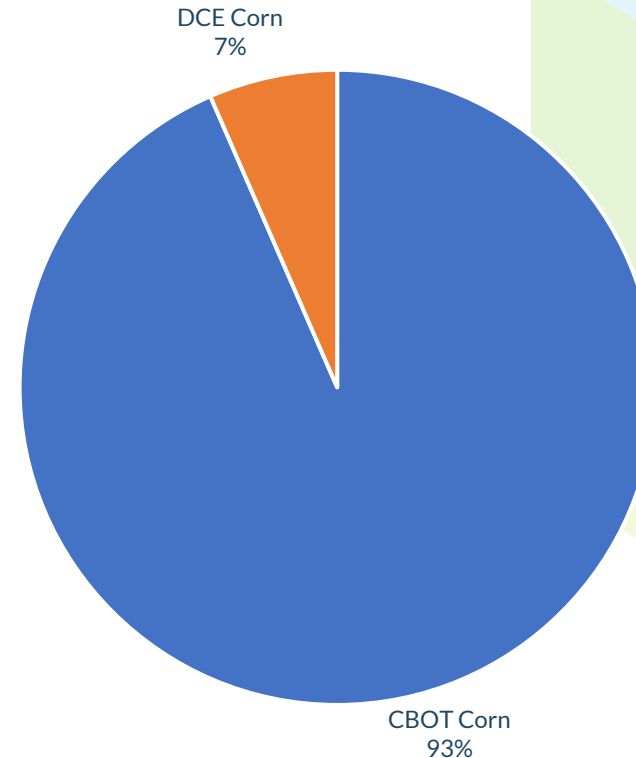
# Corn – Comparing China and US Markets

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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FIA Data Resources – including quarterly webinars, data spotlights, and regular statistical reports on derivatives trading activity, customer funds held at FCMs, and risk exposures at CCPs.

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

**FIA**

The logo consists of the letters 'F', 'I', and 'A' 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 formed by two overlapping shapes: a light blue triangle on the left and a darker blue triangle on the right. The background features large, overlapping geometric shapes in light green, light blue, and a darker green.