Winter Grain Market Outlook

Ben Brown, State Specialist
Agricultural Business and Policy Extension
Outline

❖ Economic Drivers
❖ The things that I just don’t know...
❖ January WASDE Key Points
❖ Demand Fundamentals
❖ 2021 Acreage
❖ Wrap-up
Money Flow Into Sector- USD

- Inverse Relationship between Dollar and Commodities
  - The USD is the benchmark pricing mechanism for most commodities.
  - Commodities are global assets.

- New Administration is appealing to Congress for more federal stimulus in 2021.

Data Source: Trading View
Money Flow Into Sector - TRCCI

Thomson Reuters Equal Weight Commodity Index

Index Breakdown by Components

- Agriculture, 47.0%
- Metals, 23.5%
- Energy, 17.6%
- Livestock, 11.8%

Components:
- Wheat, 5.88%
- Coca, 5.88%
- Coffee, 5.88%
- Copper, 5.88%
- Corn, 5.88%
- Cotton, 5.88%
- Crude Oil, 5.88%
- Gold, 5.88%
- Platinum, 5.88%
- Silver, 5.88%
- Soybeans, 5.88%
- Orange Juice, 5.88%
- Live Hogs, 5.88%
- Live Cattle, 5.88%
- Heating Oil, 5.88%
- Natural Gas, 5.88%
Money Flow Into Sector - TRCCI

Data Source: DTN ProphetX
Money Flow Into Sector- USD


Data Source: CFTC Weekly
Wildcard Continues To Be COVID

Daily U.S. Cases

Daily U.S. Deaths

Source: Center for Disease Control
Wildcard Continues To Be COVID

Global deaths from COVID-19 reported per 100,000 population in the past 7 days

Source: Center for Disease Control
Government Response to COVID

COVID-19: Government Stringency Index, Jan 21, 2020
This is a composite measure based on 14 response indicators including school closures, workplace closures, and travel bans, scaled to range from 0 (no restrictions) to 100 (strictest). If data varies at the subnational level, the index is shown at the response level of the strictest sub-region.

Note: The data represents the stringency of government policies and should not be interpreted as reflecting the effectiveness of a country’s response. Government stringency index is measured on a 0-100 scale.

COVID-19: Government Stringency Index, Apr 7, 2020
This is a composite measure based on 14 response indicators including school closures, workplace closures, and travel bans, scaled to range from 0 to 100 (strictest). If data varies at the subnational level, the index is shown at the response level of the strictest sub-region.

Note: The data represents the stringency of government policies and should not be interpreted as reflecting the effectiveness of a country’s response. Government stringency index is measured on a 0-100 scale.

COVID-19: Government Stringency Index, Jul 20, 2020
This is a composite measure based on 14 response indicators including school closures, workplace closures, and travel bans, scaled to range from 0 to 100 (strictest). If data varies at the subnational level, the index is shown at the response level of the strictest sub-region.

Note: The data represents the stringency of government policies and should not be interpreted as reflecting the effectiveness of a country’s response. Government stringency index is measured on a 0-100 scale.

COVID-19: Government Stringency Index, Oct 6, 2020
This is a composite measure based on 14 response indicators including school closures, workplace closures, and travel bans, scaled to range from 0 to 100 (strictest). If data varies at the subnational level, the index is shown at the response level of the strictest sub-region.

Note: The data represents the stringency of government policies and should not be interpreted as reflecting the effectiveness of a country’s response. Government stringency index is measured on a 0-100 scale.

COVID-19: Government Stringency Index, Nov 11, 2020
This is a composite measure based on 14 response indicators including school closures, workplace closures, and travel bans, scaled to range from 0 to 100 (strictest). If data varies at the subnational level, the index is shown at the response level of the strictest sub-region.

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COVID-19: Government Stringency Index, Jan 20, 2021
This is a composite measure based on 14 response indicators including school closures, workplace closures, and travel bans, scaled to range from 0 to 100 (strictest). If data varies at the subnational level, the index is shown at the response level of the strictest sub-region.

Note: The data represents the stringency of government policies and should not be interpreted as reflecting the effectiveness of a country’s response. Government stringency index is measured on a 0-100 scale.

Source: Oxford COVID-19 Government Response Tracker
Government Response to COVID

United State’s COVID Response

Source: Oxford COVID-19 Government Response Tracker
Restaurant Sector

Source: Open Table.com

Source: National Restaurant Association
Phase 1 Trade Deal

**Agriculture** - China reached 64% of their target in 2020, but US imports up 65% over 2019.

US Data show the previous record of $25.9 billion. Jan-Nov stand at $21.7 billion.

**Energy** - China reached 39% of their target.

**Manufactured Goods** - China reached 60% of their target.

**Uncovered Goods** - No set target, but down 23% from 2017 levels.

**Question becomes** - how does the Biden Administration respond?
African Swine Fever - this week

Germany finds 30 more African swine fever in wild boar

By Reuters Staff

- Germany had been in talks with China, Japan and others to relax restrictions on German pork imports - where are those now??

- China’s hog herd reportedly grew 31% year over year, but hog prices and feeding margins remain strong.

- Strong producer prices have aided China in building a more modern pork industry.

UPDATE 1-China reports first African swine fever outbreak in nearly 3 months - Reuters

21-Jan-2021 06:23:21 AM

Adds background, detail on previous outbreaks

Jan 21 (Reuters) - China on Thursday reported an outbreak of African swine fever in the southern province of Guangdong - the country's first reported cases of the deadly disease in almost three months. African swine fever ravaged the pig herd in China, the world's top pork consumer, after the first outbreak in mid-2018, killing millions of hogs. The industry has recovered, however, with the herd growing by 31% year-on-year to 406.5 million heads by the end of 2020. (Full Story)

The Guangdong outbreak occurred on a farm in Pingyuan county with 1,015 pigs, killing 214 of them, the Ministry of Agriculture and Rural Affairs said in a statement, adding that illegal transportation was the suspected cause.

The last reported swine fever outbreak in China was on Oct. 26, when authorities seized a vehicle that was illegally taking pigs into Sichuan province from another region.

The last confirmed outbreak on a farm was more than seven months ago, on June 5, in Yunnan province, according to the ministry's website.
Weekly Soybean meal crush exceeded 2mmt 23 times in 2020. It only did it 5 times between 2017-2019.
In January USDA lowered corn production:
- 1.5 mmt for Argentina
- 1 mmt for Brazil

Lower soybean production:
- 2 mmt for Argentina
- Nothing for Brazil
South American Weather

GFS 12Z
23 Jan 2018

Precipitation deficit has opened over last two months

Dryness set to worsen over next two weeks

GFS 12Z
19 Jan 2021

Much better rainfall recently

More rainfall in the forecast

Image Credit: Karen Braun
South American Weather - Arg.
South American Weather- Brazil

Image Credit: StoneX
Most Active Futures Contracts

Most Active Futures Contracts for Corn and Soybeans
Index= 1/1/2020

Source: DTN ProphetX
January WASDE- Jan. 12th

World Agricultural Supply and Demand Estimates
Crop Production- Annual Summary
1st Quarter Grain Stocks
Winter Wheat Seedings
World Markets and Trade- Grains and Oilseeds

2020/21 U.S. Crop Production

<table>
<thead>
<tr>
<th></th>
<th>Corn</th>
<th>Soybeans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yield</td>
<td>Production</td>
</tr>
<tr>
<td>NASS. January</td>
<td>172.0</td>
<td>14.182</td>
</tr>
<tr>
<td>Trade Average</td>
<td>175.3</td>
<td>14.470</td>
</tr>
<tr>
<td>NASS November</td>
<td>175.8</td>
<td>14.507</td>
</tr>
<tr>
<td>2019/20 Final</td>
<td>167.5</td>
<td>13.620</td>
</tr>
</tbody>
</table>

2020/21 Ending Stocks

<table>
<thead>
<tr>
<th></th>
<th>US</th>
<th>World</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jan. (Dec)</td>
<td>Estimate</td>
</tr>
<tr>
<td>Corn</td>
<td>1.552</td>
<td>1.599</td>
</tr>
<tr>
<td></td>
<td>(1.702)</td>
<td></td>
</tr>
<tr>
<td>Soybeans</td>
<td>0.140</td>
<td>0.139</td>
</tr>
<tr>
<td></td>
<td>(0.175)</td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td>0.838</td>
<td>0.859</td>
</tr>
<tr>
<td></td>
<td>(0.862)</td>
<td></td>
</tr>
</tbody>
</table>

1st Quarter Grain Stocks (Dec. 1)

<table>
<thead>
<tr>
<th></th>
<th>Corn</th>
<th>Soybeans</th>
<th>Wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 1</td>
<td>11.322</td>
<td>2.933</td>
<td>1.674</td>
</tr>
<tr>
<td>Estimate</td>
<td>11.951</td>
<td>2.920</td>
<td>1.695</td>
</tr>
<tr>
<td>Surprise</td>
<td>-.629</td>
<td>+0.013</td>
<td>0.021</td>
</tr>
</tbody>
</table>
US Corn Yield - Nov. to Final

Change in US Corn Yield
(Final - November Estimate)

Bushels/Acre


Source: USDA NASS
### U.S. Corn Yield Change

#### 2020 US Corn Production
Industry Expectations vs NASS

#### Ranked by 2019 Production

<table>
<thead>
<tr>
<th>State</th>
<th>Nov. 2019</th>
<th>Jan. 2020</th>
<th>Nov-Jan Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iowa</td>
<td>184</td>
<td>178</td>
<td>-3.3%</td>
</tr>
<tr>
<td>Illinois</td>
<td>195</td>
<td>192</td>
<td>-1.5%</td>
</tr>
<tr>
<td>Nebraska</td>
<td>185</td>
<td>181</td>
<td>-2.2%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>202</td>
<td>192</td>
<td>-5.0%</td>
</tr>
<tr>
<td>Indiana</td>
<td>189</td>
<td>187</td>
<td>-1.1%</td>
</tr>
<tr>
<td>S. Dakota</td>
<td>165</td>
<td>162</td>
<td>-1.8%</td>
</tr>
<tr>
<td>Kansas</td>
<td>132</td>
<td>134</td>
<td>1.5%</td>
</tr>
<tr>
<td>Ohio</td>
<td>168</td>
<td>171</td>
<td>1.8%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>184</td>
<td>174</td>
<td>-5.4%</td>
</tr>
<tr>
<td>Missouri</td>
<td>167</td>
<td>171</td>
<td>2.4%</td>
</tr>
<tr>
<td>N. Dakota</td>
<td>145</td>
<td>139</td>
<td>-4.1%</td>
</tr>
<tr>
<td>Michigan</td>
<td>160</td>
<td>154</td>
<td>-3.8%</td>
</tr>
<tr>
<td>Kentucky</td>
<td>181</td>
<td>184</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

Source: USDA NASS
US Corn Yield and Deviation

US Corn Yield

2021 Trend Yield
180.5 bushels

Source: USDA NASS
1st Quarter Grain Stocks - Corn

December 1st Corn Stocks

<table>
<thead>
<tr>
<th>Year</th>
<th>Stocks (Million Bushels)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>8,530</td>
</tr>
<tr>
<td>2001</td>
<td>8,265</td>
</tr>
<tr>
<td>2002</td>
<td>7,638</td>
</tr>
<tr>
<td>2003</td>
<td>7,954</td>
</tr>
<tr>
<td>2004</td>
<td>9,452</td>
</tr>
<tr>
<td>2005</td>
<td>9,815</td>
</tr>
<tr>
<td>2006</td>
<td>8,933</td>
</tr>
<tr>
<td>2007</td>
<td>10,278</td>
</tr>
<tr>
<td>2008</td>
<td>10,072</td>
</tr>
<tr>
<td>2009</td>
<td>10,902</td>
</tr>
<tr>
<td>2010</td>
<td>10,057</td>
</tr>
<tr>
<td>2011</td>
<td>9,647</td>
</tr>
<tr>
<td>2012</td>
<td>8,033</td>
</tr>
<tr>
<td>2013</td>
<td>10,453</td>
</tr>
<tr>
<td>2014</td>
<td>11,211</td>
</tr>
<tr>
<td>2015</td>
<td>11,235</td>
</tr>
<tr>
<td>2016</td>
<td>12,383</td>
</tr>
<tr>
<td>2017</td>
<td>12,567</td>
</tr>
<tr>
<td>2018</td>
<td>11,937</td>
</tr>
<tr>
<td>2019</td>
<td>11,327</td>
</tr>
<tr>
<td>2020</td>
<td>11,322</td>
</tr>
</tbody>
</table>

Source: USDA NASS

Trade was Expecting 11,951
1st Quarter Corn Stocks

Suprises in US December Corn Stocks
Trade Average minus Actual Stocks

At 629 mil. Bu. – largest in nearly 3 decades

Source: USDA NASS and Reuters

Stocks were 629 million bushels lower than traders expected.

However, there was the 288 mil. Bushel reduction in productions from what traders expected.

Subtracting 288 from 629 equals 341 million bushels of more demand than what traders expected.

So much for decreased feed use due to COVID.
Projected 2020/21 Feed and Residual Use

Implied First Quarter Feed and Residual Use = 2,725.7 million bushels.

<table>
<thead>
<tr>
<th>Percent of Total Feed Use used During the First Quarter</th>
<th>Implied 2020/21 Feed and Residual Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>39% Observed During 2006/07-2009/10</td>
<td>6,989 mil. Bu.</td>
</tr>
</tbody>
</table>
Ending Stocks of US Corn

U.S. Corn Ending Stocks by Month

Bushels (Million)

U.S. Corn Ending Stocks to Use in Relations to Price Received

$/Bushel

Source: USDA WAOB
US Soybean Yield and Deviation

US Soybean Yield

2021 Trend Yield is 50.6 bushel/acre

6 out of last seven years have been above trend yields

Source: USDA NASS
1st Quarter Grain Stocks - Soybeans

December 1st Soybean Stocks

Trade was Expecting 2,920

Source: USDA NASS
Ending Stocks of US Soybeans

U.S. Soybean Ending Stocks by Month

- 2013/14
- 2014/15
- 2015/16
- 2016/17
- 2017/18
- 2018/19
- 2019/20
- 2020/21

Soybean Stocks to Use in Relation to Price Received

Source: USDA

WAOB
Weekly Demand of Finished Motor Gasoline

- 5-Year Average
- 2019
- 2020
- 2021

12% below year ago levels

Source: Energy Information Agency
Corn Demand - Ethanol Production

Us Weekly Ethanol Production

14% below year ago levels

Source: Energy Information Agency
Corn Demand- Exports

Weekly US Corn Exports

Export Shipments for most current week are 61 million bushels below pace to hit current USDA target.

Source: Author
Calculation using USDA FAS Data
China just updated their numbers to show there is a production to use gap of 28 mmt.

Thoughts: Would require a change in Chinese Policy.
- Self-Sufficiency
- Other Grains
- Flood their domestic market

Increasing Chinese Corn Supply
- Dec. 31 report on development outlines that “ethanol is okay only if it stocks aren’t tight” and that “corn and corn acres for industry should not compete with food security.”
Soybean Demand - Exports

Weekly U.S. Soybeans Export Sales

21% ahead of Current USDA Export Pace
- 458 million bushels!!
December was 2 million bu. Below trade estimates, but 8.4 mil. Bu. above last December.

- Second all-time highest month - behind October 2020.

- All four months of 2020/21 have set new monthly records!!

- Implied crush signals a 42 million bushel increase over last year. USDA is up 35 million year over year.
What's driving Soybean Crush?

Labor Concerns in Argentina
- Down roughly 2/3 in December

Soybean Meal - Most Active Contract

Soybean Crush - Replacement Values
IHS Markit/Informa put their 2021 Corn Acres at 94.2 up from 91.1 in December, 90.5 for Soybeans
### Corn Balance Sheet: Shrinking Production, Demand?

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Planted</td>
<td>Mil.ac.</td>
<td>94.0</td>
<td>90.2</td>
<td>88.9</td>
<td>89.7</td>
<td>90.8 (-1.2)</td>
<td>90.5</td>
</tr>
<tr>
<td>Area Harvested</td>
<td>Mil. Ac.</td>
<td>86.7</td>
<td>82.7</td>
<td>81.3</td>
<td>81.3</td>
<td>82.5 (-1)</td>
<td>83.1</td>
</tr>
<tr>
<td>Yield</td>
<td>Bu./acre</td>
<td>174.6</td>
<td>176.6</td>
<td>176.4</td>
<td>167.5</td>
<td>172.0 (-6.5)</td>
<td>180.5</td>
</tr>
<tr>
<td>Beg. Stocks</td>
<td>Mil. Bu.</td>
<td>1,737</td>
<td>2,293</td>
<td>2,140</td>
<td>2,221</td>
<td>1,919 (-334)</td>
<td>1,552</td>
</tr>
<tr>
<td>Production</td>
<td>Mil. Bu.</td>
<td>15,148</td>
<td>14,609</td>
<td>14,340</td>
<td>13,620</td>
<td>14,182 (-718)</td>
<td>15,000</td>
</tr>
<tr>
<td>Imports</td>
<td>Mil. Bu.</td>
<td>57</td>
<td>36</td>
<td>28</td>
<td>42</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total Supply</strong></td>
<td>Mil. Bu.</td>
<td>16,942</td>
<td>16,939</td>
<td>16,509</td>
<td>15,883</td>
<td><strong>16,127 (-1,051)</strong></td>
<td>16,567</td>
</tr>
<tr>
<td>Feed and Res.</td>
<td>Mil. Bu.</td>
<td>5,470</td>
<td>5,304</td>
<td>5,429</td>
<td>5,827</td>
<td>5,650 (-175)</td>
<td>5,700</td>
</tr>
<tr>
<td>Food, Seed, In</td>
<td>Mil. Bu.</td>
<td>6,885</td>
<td>7,057</td>
<td>6,793</td>
<td>6,282</td>
<td>6,375 (-150)</td>
<td>6,450</td>
</tr>
<tr>
<td>Ethanol Crush</td>
<td>Mil. Bu.</td>
<td>5,432</td>
<td>5,605</td>
<td>5,378</td>
<td>4,852</td>
<td>4,950 (-150)</td>
<td>5,025</td>
</tr>
<tr>
<td>Exports</td>
<td>Mil. Bu.</td>
<td>2,294</td>
<td>2,438</td>
<td>2,066</td>
<td>1,778</td>
<td>2,550 (+225)</td>
<td>2,300</td>
</tr>
<tr>
<td><strong>Total Use</strong></td>
<td>Mil. Bu.</td>
<td>14,649</td>
<td>14,798</td>
<td>14,288</td>
<td>13,887</td>
<td><strong>14,575 (-100)</strong></td>
<td>14,450</td>
</tr>
<tr>
<td>Ending Stocks</td>
<td>Mil. Bu.</td>
<td>2,293</td>
<td>2,140</td>
<td>2,221</td>
<td>1,919</td>
<td>1,552 (-351)</td>
<td>2,117</td>
</tr>
<tr>
<td>Farm Price</td>
<td>$/Bu.</td>
<td>$3.36</td>
<td>$3.36</td>
<td>$3.61</td>
<td>$3.56</td>
<td><strong>$4.20 (+$0.70)</strong></td>
<td><strong>$3.65</strong></td>
</tr>
</tbody>
</table>

Source: USDA WAOB
## Soy Balance Sheet: Surprising Yields, Trade Optimism

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Planted</td>
<td>Mil. Acres</td>
<td>83.4</td>
<td>90.2</td>
<td>89.2</td>
<td>76.1</td>
<td>83.1 (-0.7)</td>
<td>90.5</td>
</tr>
<tr>
<td>Area Harvested</td>
<td>Mil. Acres</td>
<td>82.7</td>
<td>89.5</td>
<td>87.6</td>
<td>74.9</td>
<td>82.3 (-0.7)</td>
<td>88.4</td>
</tr>
<tr>
<td>Yield</td>
<td>Bu./Acres</td>
<td>52.0</td>
<td>49.3</td>
<td>50.6</td>
<td>47.4</td>
<td>50.2 (-1.7)</td>
<td>51.0</td>
</tr>
<tr>
<td>Beg. Stocks</td>
<td>Mil. Bu.</td>
<td>197</td>
<td>302</td>
<td>438</td>
<td>909</td>
<td>525 (-52)</td>
<td>140</td>
</tr>
<tr>
<td>Production</td>
<td>Mil. Bu.</td>
<td>4,296</td>
<td>4,412</td>
<td>4,428</td>
<td>3,552</td>
<td>4,135 (-178)</td>
<td>4,508</td>
</tr>
<tr>
<td>Imports</td>
<td>Mil. Bu.</td>
<td>22</td>
<td>22</td>
<td>14</td>
<td>15</td>
<td>35 (+20)</td>
<td>30</td>
</tr>
<tr>
<td>Total Supply</td>
<td>Mil. Bu.</td>
<td>4,515</td>
<td>4,735</td>
<td>4,880</td>
<td>4,476</td>
<td>4,695 (-208)</td>
<td>4,678</td>
</tr>
<tr>
<td>Soy Crush</td>
<td>Mil. Bu.</td>
<td>1,901</td>
<td>2,055</td>
<td>2,092</td>
<td>2,165</td>
<td>2,220 (+20)</td>
<td>2,205</td>
</tr>
<tr>
<td>Exports</td>
<td>Mil. Bu.</td>
<td>2,166</td>
<td>2,134</td>
<td>1,752</td>
<td>1,676</td>
<td>2,230 (+105)</td>
<td>2,200</td>
</tr>
<tr>
<td>Seed</td>
<td>Mil. Bu.</td>
<td>105</td>
<td>104</td>
<td>88</td>
<td>96</td>
<td>103 (+3)</td>
<td>105</td>
</tr>
<tr>
<td>Residual</td>
<td>Mil. Bu.</td>
<td>41</td>
<td>5</td>
<td>39</td>
<td>16</td>
<td>22 (-16)</td>
<td>25</td>
</tr>
<tr>
<td>Total Use</td>
<td>Mil. Bu.</td>
<td>4,214</td>
<td>4,297</td>
<td>3,971</td>
<td>3,953</td>
<td>4,555 (+113)</td>
<td>4,535</td>
</tr>
<tr>
<td>Ending Stocks</td>
<td>Mil. Bu.</td>
<td>302</td>
<td>438</td>
<td>909</td>
<td>525</td>
<td>140 (-320)</td>
<td>143</td>
</tr>
<tr>
<td>Farm Price</td>
<td>$/Bu.</td>
<td>$9.47</td>
<td>$9.33</td>
<td>$8.48</td>
<td>8.57</td>
<td>$11.15 (+1.90)</td>
<td>$11.80</td>
</tr>
</tbody>
</table>

Source: USDA WAOB
Key Take Aways

❖ Several Factors continue to add downside risk
  ❖ COVID-19
  ❖ South American Weather
  ❖ Trade

❖ Fundamentals for corn and soybeans have greatly improved and support current prices.
  ❖ All attention was given to the USDA corn yield adjustment, but corn feed and residual demand was also very impressive.

❖ Expectations are that Soybean prices may continue to decline as Brazil's Harvest mitigates short-term supply concerns.
  ❖ World Supply and Demand Fundamentals still point to prices remaining well above the depressed levels observed before August

❖ 2021 acreage remains a key question.
  ❖ Profitability gives soybeans the edge against most crops
  ❖ But spring weather is a big factor, and
  ❖ Farmers just love to plant corn.
Thank You- Ohio!

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