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Growing Pains

Soybean Meal Demand Key to U.S. Crush Industry's Outlook as Capacity Grows

by Will Secor
Economist,
Grain and Farm Supply

Inside…

Key Points:

- The historically strong crush margins that soybean processors have enjoyed in recent years have driven the industry into the biggest expansion phase in 20 years.
- Two new soybean processing plants are expected to start production in the U.S. by the end of 2019 with a third expected to begin operation by the end of 2021.
- These new facilities will support local soybean basis to the benefit of farmers, but may pressure local grain elevators competing for soybeans at harvest.
- Soybean meal consumers may struggle to keep pace with the new production for 4 years, pressuring crush margins, but soybean oil consumers could use around 75 percent of it in the first year.
- Increasing exports for U.S. soybean meal will be necessary to alleviate the industry's growing pains of soybean meal oversupply in the years ahead.

Introduction

While the short-term soybean processor outlook is positive with elevated soybean crush margins expected through the spring of 2019, soybean processor profitability will be threatened by the end of 2019 as two new soybean processing plants could begin operations by the end of next year with another expected to come online by the end of 2021.

The 2-5 year outlook is one of cautious optimism. The fundamentals of soybean supply and soybean meal and oil demand support the soybean processing industry. Around the globe, farmers are growing consistently large soybean crops. Additionally, rising meat demand from a bourgeoning global middle class will require more soybean meal to feed more livestock.

Pressure in the 2-5 year outlook comes from the additional U.S. capacity coming on-line with current projections pegging capacity to grow by around 6-10 percent. Domestic soybean meal consumers will not be able to absorb all of the new production immediately. If soybean meal and oil demand overseas does not increase to match the growth in U.S. production, prices of soybean meal and oil in the U.S. will likely decline.

U.S. Soybean Processing Capacity

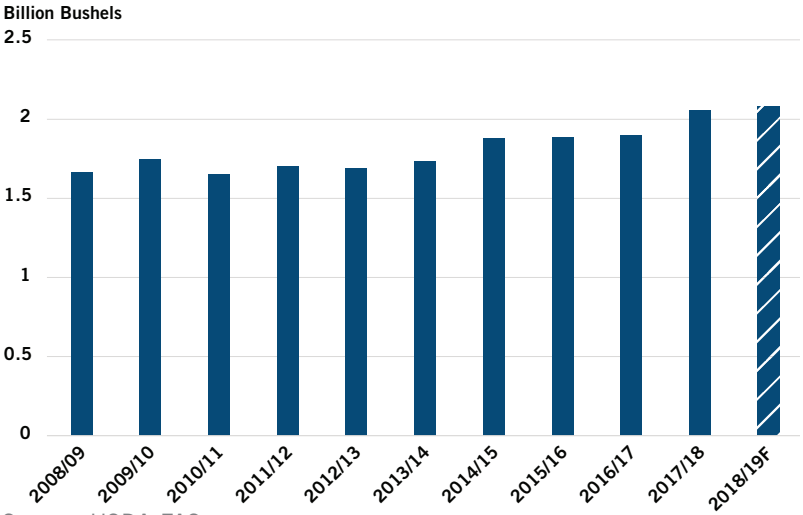
Soybean product users in the U.S. and abroad are absorbing record domestic crush this year. (See *Exhibit 1*.) This is the result of U.S. soybean processors responding to the extraordinary margin environment and Argentina's production shortfall. (See *Exhibit 2*.) However, new capacity coming online over the next year will cause growing pains if global crush does not hit major production problems like last year.

Soybean crush capacity is concentrated in the Midwest to take advantage of lower soybean basis and lower transportation costs to serve hog, beef, and dairy markets. Additional capacity is sprinkled through the Mid-Atlantic and Southeast to service the poultry industry concentrated in the Southeast and Delta regions of the U.S.

Older plants will typically be smaller and more inefficient than new plants. Most existing plants have a capacity to crush around 70,000-120,000 bushels/day with newer plants in the 100,000-120,000 bushel/day range.

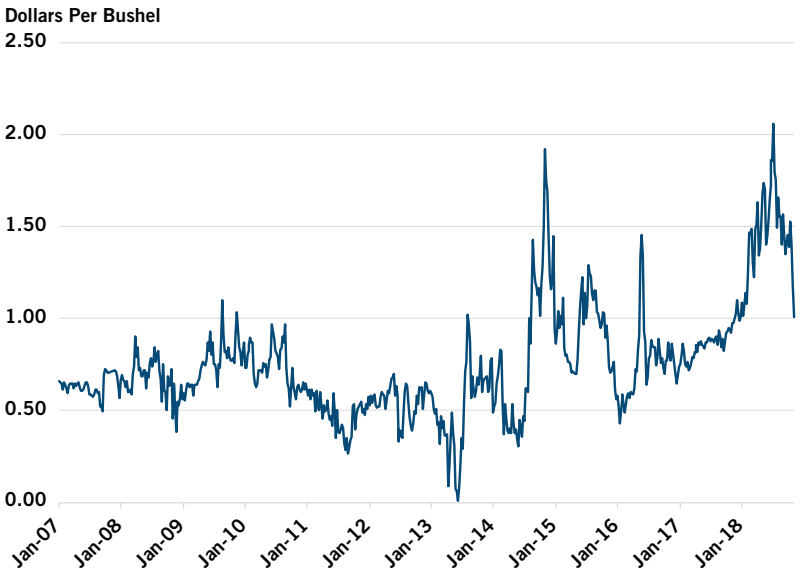
Two new soybean processing plants are currently expected to start production in the U.S. by the end of 2019. These plants will be located in Michigan and South Dakota. A third plant is expected to come online by the end of 2021 if adequate funding is secured. This plant is slated to be built in North Dakota.

EXHIBIT 1: U.S. Soybean Crush Volume



Source: USDA-FAS

EXHIBIT 2: Soybean Crush Margin



Source: CME Group

Combined, these three plants are expected to increase overall U.S. capacity by at least 6 percent. This amounts to around 120 million bushels per year with each plant expected to have the capacity to crush approximately 40 million bushels per year. This capacity would make it possible to produce nearly 2.8 million tons of soybean meal and over 1.4 billion pounds of soybean oil.

These estimates are relatively conservative because they do not account for expansions at existing soybean crush facilities. Any additional capacity would increase these production figures.

The immediate impact of the new capacity on soybean meal markets could be severe. Domestic users may take in less than 40 percent of the new plants' production in 2019/20. However, soybean oil users could consume 75 percent of the new production that year.

Negative margin impacts could be short-lived. Additional soybean meal production could be absorbed by the U.S. and global markets within 5 years. If international demand growth increases at the pace seen since 2000/01, additional production may have a neutral impact on margins with exports soaking up excess supplies in 2020/21 and 2023/24.

The additional soybean oil production could be absorbed by domestic users within two years after the first two plants start running. When the third plant starts production, domestic users will likely be able to use all of the new production. Additional exports will help support soybean oil prices.

The risk for soybean processors is that slower consumption growth could stretch that timeframe by several years. For soybean oil, the timeline could increase from two years to 5-6 years. For soybean meal, the timeline could increase from five years to 7-8 years.

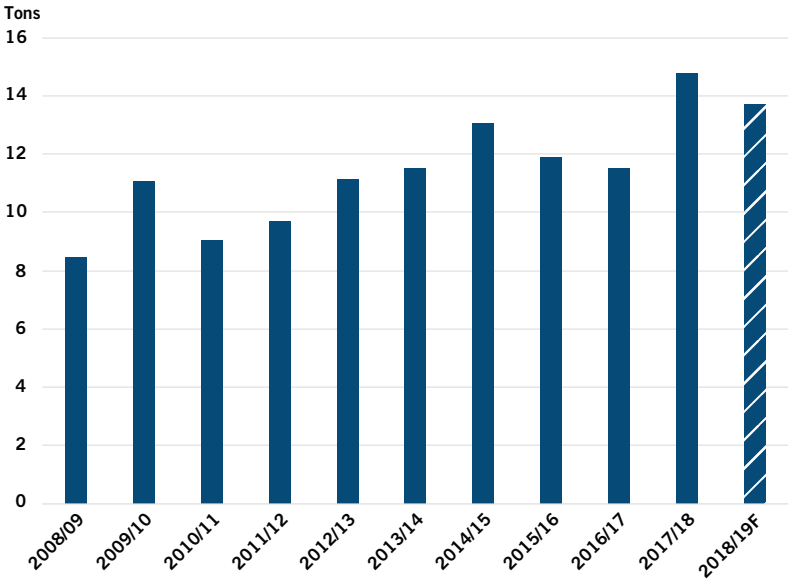
Basis and Export Risk

Soybean meal flows will likely change as a result of the new capacity. The two new plants being built in North and South Dakota in particular will likely focus more intensely on exports due to a relatively small local feed demand base. These two plants are expected to have a crush capacity of at least 80 million bushels/year, producing around 1.9 million tons of soybean meal annually. These plants will soak up more soybeans that were destined for other processors within the U.S. or for export.

The plant in South Dakota is also well positioned to absorb excess soybean supplies in the short-run if the U.S.-China trade dispute continues. This is a win for the processing plants buying relatively cheap soybeans and a silver lining for local farmers who benefit from increased marketing opportunities and potentially stronger basis. Longer term, both plants in the Dakotas will be a win for farmers as trade relations with China normalize and the new soybean processing plants will provide basis support. However, this same basis support may pressure local grain elevators competing for soybeans at harvest.

As a result of the current weak basis environment created by the large crop and ongoing trade dispute with China, farmers in the Dakotas are likely to pull back on soybean acres in 2019. For 2019/20, the plant in South Dakota could face local supply short-falls causing a potential increase in bids. This lower production may be mitigated by larger 2018/19 ending stocks. If this low-soybean-acre environment persists, both plants in the Dakotas could see sharply higher soybean prices. However, the larger risk to these plants is continued access to international markets for soybean meal exports due to current U.S. trade policy uncertainty.

EXHIBIT 3: U.S. Soymeal Exports



Source: USDA-FAS

The new plants being built in North and South Dakota will look to export mainly out of the Pacific Northwest and displace other exporters currently serving Asian buyers, or help the U.S. gain market share in these growing markets. Soybean meal produced by other processors that would have gone overseas will likely receive a lower price in export markets or need to find a home domestically, also at a potentially lower price.

Soybean Meal Risk and Opportunities

In the U.S., soybean meal prices will be pressured by the additional production. While soybean meal exports are growing faster than domestic consumption, approximately 75 percent of soybean meal is still fed domestically.

Domestic users will be able consume around 75 percent of new soybean meal production by 2023/24, assuming domestic demand increases 1 percent per year. This assumption is based on CoBank pork and poultry production estimates and USDA's long-term projections. USDA forecasts around 1 percent growth per year in domestic soybean meal consumption after 2018/19. To be conservative, we assume that 1 percent growth continues between 2017/18 and 2018/19, lower than the current 3.2 percent growth projected by USDA.

In the first year, if 75 percent of the initial 1.9 million ton increase is consumed domestically, it would be a 4 percent jump in domestic soybean meal consumption. This would be roughly in line with the increase seen between 2016/17 and 2017/18.

If growth slows to just 0.75 percent, the average annual growth rate between 2000/01 and 2017/18, domestic end-users would not be able to absorb 75 percent of this new soybean meal production until at least 2025/26 – four years after the third plant is completed.

Current projections are for pork and poultry production to increase 1 percent per year through 2021 according to CoBank estimates. These industries have large animal inventories and strong demand in the U.S. and in export markets. The pork industry has expanded since 2014 with packers having invested heavily in new processing capacity, and farmers having built new hog barns in the countryside. Broiler production is expected to increase steadily on growing demand projections and more infrastructure investments.

Competition from high-protein DDGs may also increase as ethanol plants seek to add value to the ethanol by-product. However, more intense competition than currently exists will be limited in the next 2-5 years because DDGs cannot fully substitute for soybean meal or corn in swine and broiler rations due to a weak amino acid profile. To the extent that these DDGs and synthetic amino acids compete in the medium-term, they may erode meal prices and eat into soybean processor margins.

As a result of the domestic supply and demand mismatch, export markets would be needed to soak up excess supplies. Since 2010/11, exports have ranged between 9.1 million and 14.8 million tons with growth averaging around 7.8 percent per year. (See *Exhibit 3.*)

Growing Pains

The recent run-up in soybean crush margins has soybean processors well-positioned for any growing pains from capacity growth. Many crushers have used profits to pay cash for capital expenditures and boost working capital.

Processors that invested in their infrastructure with cash will be positioned to weather any margin compression thanks to a lower cost structure. Crushers that built reserves during the margin spike will also have a buffer to help through any downturns.

An additional 1.2 million tons of soybean meal leftover from the domestic market in the 2019/20 marketing year would represent an 8.5 percent jump from USDA's current 2018/19 forecast. The export market in 2019/20 would need to absorb a total of around 14.9 million tons from the U.S., beating out last year's record setting figure of 14.8 million tons.

Abroad, top soybean meal-exporter Argentina is unlikely to face a similar soybean production shortfall as it did in 2017/18. As a result, soybean meal production will likely rebound in 2018/19. To the extent that Argentina continues to favor soybean meal and oil exports over soybean exports – and soybean production does not face major problems – U.S. soybean meal will face stiff competition on the export market in the near term. Long-term, the U.S. and Argentina will both benefit from increasing global feed demand as the global soybean meal market grows, but they will likely engage in price competition as they muscle for market share in times of supply surplus.

Additionally, there are signs that global economic growth is slowing. A sluggish global economy would likely lower meat consumption which would then reduce soybean meal demand. This would put further downward pressure on global soybean meal prices.

A slowdown in soybean meal demand growth could significantly increase crush margin pressure. Processing plants that are inefficient or have disadvantageous basis will struggle. Smaller plants can often require a higher crush margin to breakeven. Location will play an important role as transportation costs are expected to remain firm.

The crush pace in the U.S. may slow as crush margins decline. At an extreme, some soybean processors may decide to mothball plants. While margins will be under pressure for only a few years in the baseline analysis, if processors take a more pessimistic outlook, mothballing may be on the table.

Global soybean production and crush will continue to be major determinants of soybean crush margins through 2019. World soybean production is expected to increase in 2018/19, which will help keep a lid on upward price movements. However, any production issues or major acreage shifts out of soybeans could push soybean prices higher next marketing year and erode crush margins.

Conclusions

Soybean crush margins have been exceptional due to Argentina's soybean production shortfall that resulted in strong soybean meal prices, and U.S.-Chinese trade tensions that have pressured domestic soybean values.

U.S. soybean processors have reinvested this windfall into their core operations and expanded production capacity, which will likely result in fierce price competition in moments of supply surplus as the U.S. and Argentina fight for market share in the global soybean meal market.

Locally, soybean basis will strengthen as plant expansions increase demand in local markets. Combined, the pending weakness in soybean meal prices from increased supply, and strengthening local soybean basis from improved demand will erode margins for processors.

However, following years of healthy margins and record crush, U.S. soy processors are generally well-positioned financially to shoulder periods of low processing margins. However, some processors may need to curtail production in this low-margin environment.

The strength of U.S. and overseas demand for soybean meal, and the ability of U.S. soybean processors and animal protein producers to compete in export markets, will determine how quickly the industry will work through any low margins due to the new capacity build-out.

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