Will the Proposed CME Sorghum Futures Contract be Good for Sorghum Producers?

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The CME Group is considering launching a new sorghum futures contract priced as a basis contract relative to CBOT corn futures, with delivery infrastructure borrowing from the Kansas City hard red winter wheat (KC HRW) contract. This paper evaluates whether the proposed contract will benefit sorghum producers. While a well-functioning sorghum futures market would improve price discovery and risk transfer we identify several concerns suggesting the contract may not achieve viability. First, sorghum contracts were listed at least three times since 1944 by the KCBOT, CBOT, and CME, and each attempt failed to attract sufficient liquidity, as commercial users continued cross-hedging with corn. Second, the proposed delivery locations around Kansas City, Salina, Hutchinson, and Wichita capture only 17% of sorghum planted acres in key producing states, compared to 22% for HRW wheat, with the most intensive sorghum production and major end users (cattle feedlots) lie further west. Third, the sorghum cash market is under considerable stress, with exports to China down 97% in the 2024 marketing year and approximately 40 Gulf locations no longer handling sorghum. Fourth, the contract's limited delivery territory and relatively small deliverable supply increase susceptibility to market manipulation through corners and squeezes. We recommend that if the contract launches, producers wait to participate until it demonstrates deep, sustained liquidity, leaving the risks of an illiquid market to larger participants who can absorb them.

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The CME group is considering a new sorghum futures contract. Though specifics have not been officially announced, apparently the new contract price will be quoted as the difference between local sorghum and corn CBOT futures prices rather than as a flat price per bushel for sorghum. Therefore, the contract will function as a basis contract to corn, and market participants wishing to take a long flat price position in sorghum would need to place two trades in the same direction. That is, buy the sorghum basis contract and buy the CBOT corn contract. The delivery mechanism for the new sorghum contract will be consistent with recent reforms in the Kansas City hard red winter wheat (KC HRW) contract to allow for, and give price differential incentive to, shuttle train loadout.

Sorghum is the third largest cereal grain by harvested acres, behind only corn and wheat. In 2024 farmers harvested 5.61 million acres of sorghum, compared to 82.9 million acres of corn and 38.5 million acres of wheat (all classes) (Crop Production -- 2024 Summary, 2025). Yet corn, wheat, and soybeans[2] all have actively traded futures contracts that facilitate the transfer of risk in those markets, while sorghum does not. Since sorghum is grown in similar areas to HRW wheat and sorghum production is just under half of HRW (344 vs 770 mil bu in 2024 (Crop Production -- 2024 Summary, 2025)), it may seem at first glance that a sorghum futures contract should be viable. In fact, sorghum futures contracts have been listed at least three times in past, and none of the prior attempts gained enough interest and trading volume to survive.

[2] Though soybeans are an oilseed and not a cereal grain, it is typically the largest principle crop by harvested acres, and the CBOT soybean futures contract is actively traded and liquid.

There is no doubt that a well-functioning futures market provides incredible value to producers, consumers and everyone in between through increased price discovery, price transparency, and facilitation of risk transfer. Without a dedicated sorghum futures contract, market participants face more risk than if there was a well-functioning futures market. The current status quo is that market participants cross hedge using CBOT corn futures. This is an imperfect solution because there is basis risk due to the large distance between the Western Plains and the Illinois River Delivery System (same as Western Plains corn producers face), as well as the basis risk of sorghum prices relative to corn.

While the previous discussion highlights the imperfection of the current status quo, the fact is that most futures contract launches fail to attract enough liquidity to survive for a number of predictable reasons – even when contracts are designed optimally (Till, 2015). Further, even contracts with deep liquidity can be the target of manipulation, as evidenced by persistent attempts to manipulate through corners, squeezes, wash trading, and spoofing.[3,4] While even perfect contract design does not guarantee against manipulation attempts (hence the continued need to regulatory oversight), contract design can influence how susceptible a specific contract is to certain kinds of manipulation.

[3] Corner/squeeze: trader takes control of most or all of the deliverable supply of the commodity, gets long in the futures contract, and stands for delivery. Remaining shorts are trapped because they are unable to offset their positions for a reasonable price, they also cannot make delivery because there is no physical supply to be had. Wash trading: a trader simultaneously takes long and short positions at the same time for the purpose of raising trading volume without taking price risk with the purpose of manipulating the appearance of activity and possible influence price. Spoofing: placing large orders to trade with the intension of cancelling them without getting filled in order to create the perception of buy or sell pressure that may influence the price.

[4] Browse recent enforcement actions by the CFTC to see these activities are still an issue in modern markets.
https://www.cftc.gov/PressRoom/PressReleases?combine=&field_press_release_types_value=Enforcement&field_release_number_value=&prtid=All&year=all

In this article we explore the ways things could go wrong with the proposed sorghum futures contract. We remind the readers of the difficult task of bootstrapping enough liquidity to make the contract a success, as well as contract design elements that may make the proposed sorghum contract more susceptible to squeeze attempts and other manipulative behavior. We argue that the conditions that led to the demise of previous incarnations of the sorghum contract are still relevant, and that the proposed delivery locations increase the potential for squeezes or other manipulations if the contract maintains viability from a volume perspective.

At the end of the day, if the CME launches a new sorghum futures contract and it is an abject failure (defined as no one trades it) the CME just loses the cost to research, develop, and launch the contract. That is the cost of doing business for an exchange that constantly needs to expand revenue and footprint. No harm would come to market participants in this case. The more dangerous case is if the sorghum contract launches to middling success with barely sufficient liquidity. In that case producers especially may find themselves on the wrong side of an illiquid market with questionable pricing signals. Negatively impacted producers are likely to be quite upset and vocal about the experience, likely to impact other producers' participation. If the new sorghum futures contract is launched, we would recommend that producers wait to use the new sorghum contract until it has proven ability to attract deep liquidity. Leave the navigation of an illiquid and high transaction cost market to the large players that can withstand that risk.

Background on Prior Sorghum Futures Contract Attempts

The Grain Futures Act of 1922 and the Commodity Exchange Act of 1936 regulated transactions in grain sorghum (and other commodities) (Commodity Exchange Act, 1936; Grain Futures Act, 1922). Since these landmark pieces of legislation sorghum futures contracts have been launched a few times and have failed each time. Sorghum futures contracts have been offered at different points of time between 1944 and the 1990s by the KCBOT, CBOT, and CME. The KCBOT first listed sorghum futures contracts in 1944 as did the CBOT in 1951 (Jackson et al., 1980). In the 1970's the KCBOT and the CME still had sorghum contracts listed, but since sorghum trading never attracted much volume, trading was offered and suspended a few times from the 1970's through the early 1990's (Maidenberg, 1976), when it was finally suspended for good; at least until now.

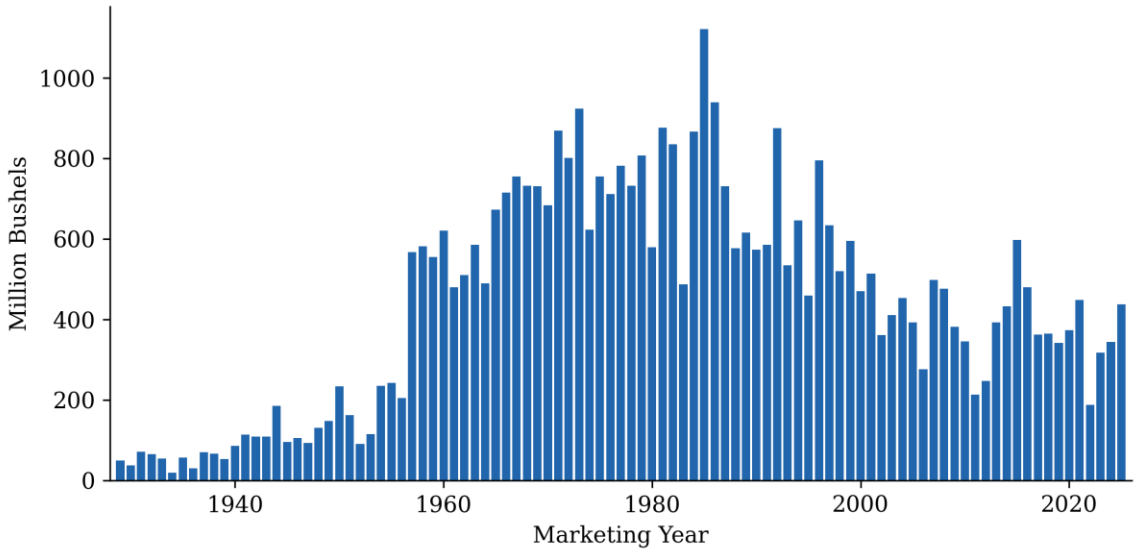
An important attempt at a sorghum futures contract occurred in 1988 at KCBT as this attempt contains documentation on contract revisions addressing issues from past experiences (Elam & Smith, 1990). US annual grain sorghum production in the late 1980's was similar to production in the 1970's, both decades enjoying the height of sorghum production in the U.S. According to Elam and Smith (1990), the revised KCBT contract: 1) added three delivery points to the Kansas City delivery location, for a total of four delivery locations; 2) imposed stricter standards for delivering #3 sorghum; and 3) offered flat transit billing as opposed to freight paid to another destination. Additional delivery locations should help the contract succeed due to increases in confidence in convergence and larger geographic footprint for hedging exists. Number 3 sorghum, with its lower physical standards appears to have disrupted market liquidity and that this issue

has persisted into the 2000's (Grain Inspection, Packers and Stockyards Administration, 2006). Flat transit billing reduced cost variability.

Despite the contract changes, the KCBT sorghum futures contract was discontinued a few years later. While KCBT grain sorghum futures historical volume open interest data is not publicly available, Elam and Smith (1990) report low liquidity as commercial users kept cross-hedging with corn futures.

Since the 1988 KCBT Sorghum Futures Contract, no further attempts to establish sorghum futures contracts have been made. With sorghum futures unavailable, cross-hedging became the norm (Elam and Smith, 1990). Perhaps cross-hedging is the primary reason why sorghum futures failed to obtain enough liquidity.

Figure 1: Annual U.S. Sorghum Production 1929-2025



Note: U.S. grain sorghum production, 1929–2025, in million bushels. Source: USDA Economic Research Service, Feed Grains Yearbook, Table 1. Marketing year begins September 1 (October 1 prior to 1986). The 2025 value is a USDA projection.

Why do futures contracts fail?

Gray (1966) identifies three primary reasons for the failure of futures trading. First, the delivery process may disproportionately benefit either the buyer or the seller, enabling one party to squeeze the other as the delivery date nears. Second, there may be a reluctance to engage with a futures market. If the current forward contracting system benefits those with market power, the introduction of a futures contract must overcome the resistance of those who prefer to maintain their advantageous position rather than support a futures market. The third reason is the inability to attract speculative interest. Specifically, speculators may be disinclined to trade a contract characterized by a regular supply but a demand that is seasonal, erratic, and influenced by numerous cross-elasticities. Furthermore, Gray (1966) asserts that the success of a futures market necessitates compelling reasons for commercial buyers and sellers to participate, as opposed to relying on over-the-counter agreements. Such reasons may include inventory financing, forward pricing opportunities, and financial stability. To attract hedgers, the contract, delivery terms, months, and locations must closely align with commercial movement. Additionally, the market must be appealing to speculators. Till (2015) provides a similar view that there are three key elements that must be present for a new futures contract to be successful: 1. A commercial need for hedging; 2. A pool of speculators that will trade the market, and 3. Regulations that are not too discouraging of trading futures.

The Case for Sorghum

There is clearly a commercial need for hedging and the commercial buyers and sellers seem roughly equal in terms of market power, but commercial interests have been managing risks by cross hedging in the corn futures market for a very long time, even when there was a listed sorghum contract. As for attracting speculators, it is probably safe to say that there is a larger pool of speculators than there was the previous sorghum contracts were traded, but it is also true that the number of instruments on which to speculate has exploded in the time since then as well. It is not clear to us that a sorghum contract listed today will attract more speculative liquidity than past versions of the sorghum contract. Comparing the regulatory environment today to previous times seems neutral to positive.

Sorghum Cash vs Corn Futures and Cross Hedging

Cross-hedging provides a way to manage price risk (Anderson & Danthine, 1981). Hedging sorghum in the corn futures market effectively reduces risk only if the prices of sorghum and corn futures exhibit predictable relative movements (Schroeder, 1987, 1988). The prevalence of cross-hedging between grain sorghum and corn has prompted academic investigations into their relationship (Aglasan et al., 2021; Grenham, 2018; Zhao & Goodwin, 2012). Zhao and Goodwin (2012) evaluated dynamic cross-hedge ratios between sorghum and corn using copula models, identifying significant linkages between the two markets, and confirming the use of cross-hedging as a strategy for managing sorghum price risk. Grenham (2018) assessed the effectiveness of simple cross-hedges between sorghum and corn, concluding that corn provides an effective

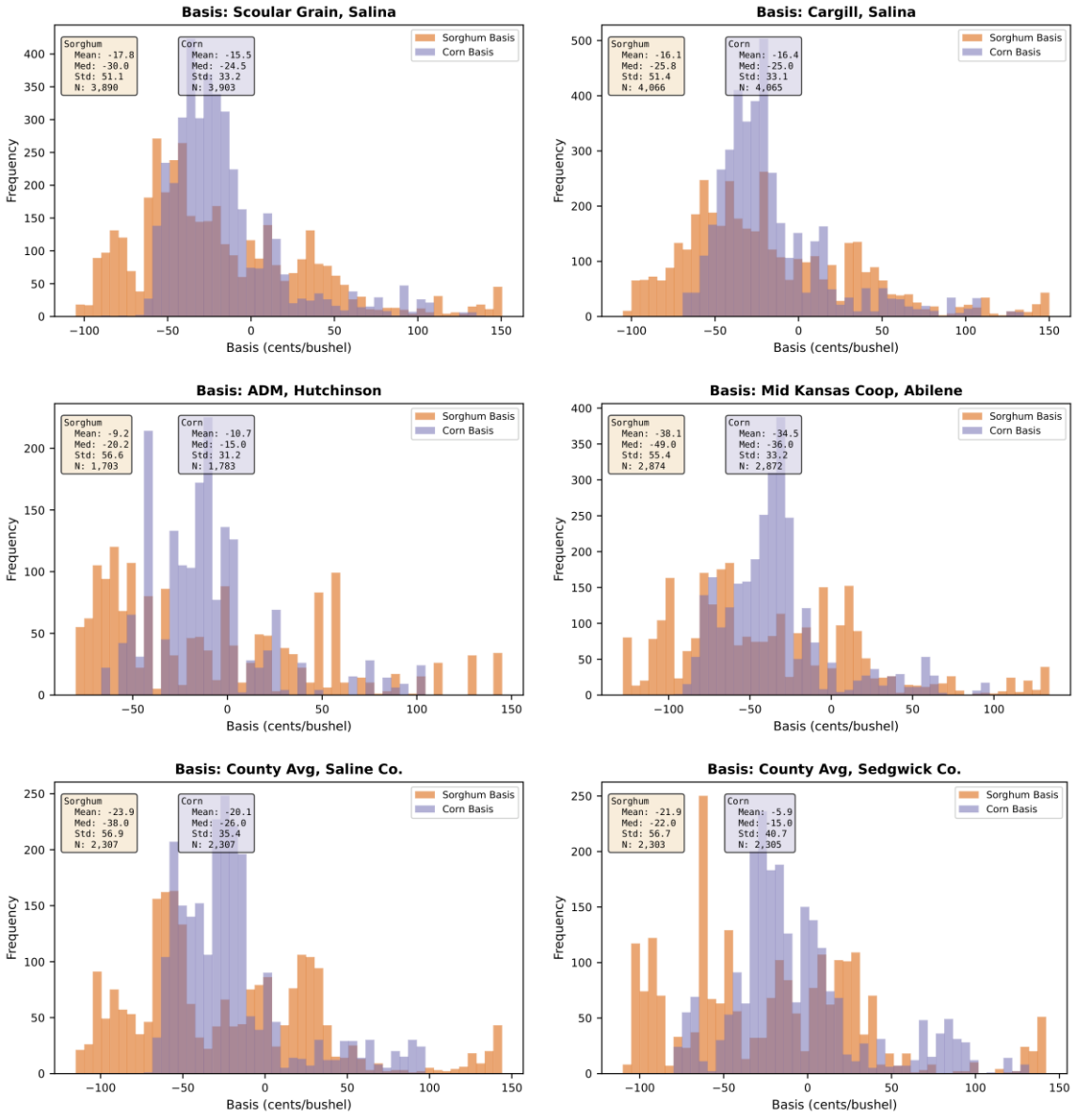
hedge against sorghum. In a more recent study, Wu, Aglasan, and Goodwin (2021) explored the optimal hedge ratio for cross-hedging between sorghum and corn using various models, finding that copula models, which allow for a more flexible joint distribution of the two prices, outperform conventional optimal hedge ratio methods. This approach benefits sorghum traders by providing a superior method for estimating their hedge ratio. Research on hedge ratios generally supports the utility of cross-hedging rather than refuting it as a viable alternative. Recent studies, such as that by Wu, Aglasan, and Goodwin (2021), utilize data from the 2010s, reflecting recent market conditions and suggesting that cross-hedging remains a valid hedging strategy. Though Elam and Smith (1990) suggested that hedging risk for cash sorghum could decrease by 17 to 34% when compared to a cross-hedge in corn futures, the KCBT grain sorghum futures contract was discontinued one year later, in 1991.

Figure 2 illustrates the extra basis risk faced by sorghum producers compared to corn producers in the Western Plains from 2000 to early 2026. We plot histograms of local sorghum basis (against the nearby CBOT corn futures contract) overlaid on histograms of the local corn basis at Scoular Grain and Cargill in Salina, KS, ADM in Hutchinson, KS, Mid Kansas Coop in Abiline, KS, and the county average basis in Sedgwick county KS.

Both corn and sorghum face significant basis risk due to being far from the CBOT corn delivery system. Sorghum faces more extreme basis uncertainty because of the additional uncertainty in the value of sorghum relative to corn. We can see that while corn typically ranges from -50 to as high as +100 cents per bushel in Salina, sorghum

ranges from -100 to +150 cents per bushel. The mean and mode basis value is lower as well.

Figure 2: Sorghum and Corn Local Basis – Calculated off of Nearby CBOT Corn Futures



Note: Distribution of daily sorghum basis (orange) and corn basis (purple) at six Kansas elevator and county-average locations within the proposed delivery territory. Basis is calculated as the local cash bid minus the Illinois River-delivered corn futures price (cents per bushel). Data are daily closing prices from DTN for January 3, 2000 through February 6, 2026.

Concerns with the Contract

There are several concerns with the proposed contract structure and market environment in sorghum that make us concerned that the contract will not be a net positive for producers. 1. The new contract will have low liquidity at least at first, and probably even if it is successful. 2. The delivery locations being outside the most important production regions. 3. Recent loss of infrastructure in the cash market. 4. The potential for market manipulation.

Liquidity Risk

Bootstrapping liquidity for new futures contracts is very difficult. Trading from commercial hedgers is needed to attract speculators, without speculators wide bid-ask spreads make hedging too costly. In extreme cases, if there is very low liquidity traders can even become 'trapped' in positions if they have an open position and there are literally no bids or offers, or they are extremely wide.

The chicken-and-egg problem is not easily solved. There are numerous cases of futures contracts failing, even when underlying market has all the requisite properties for success that Gray and Till identified. Silber (1981) calculated that only about 1/3 of new futures contracts survived to produce more than 10,000 contracts traded after three years, and Peterson (2012) highlights that there were 584 new contracts launched worldwide in 2011 and 52% of them never traded a single contract in their first year trading. Most of them likely have since been delisted.

Till (2015) describes the failed attempts of barley and Pacific Northwest wheat. Contracts in both these commodities failed because there was a liquid alternative. Cross

hedging was good enough, so a liquid alternative that was correlated was better than a directly applicable contract with low liquidity. This is the same pattern we learned from the previous failures of sorghum futures contracts.

A recent example is the CBOT's launch of spring wheat futures which directly competes with the Minneapolis Grain Exchange's longstanding spring wheat contract. Volume has been very low on the new contract as traders see little reason to trade on the new contract when an identical contract with good liquidity exists. The contract has not technically failed, but as of yet not much liquidity has pulled away from the Minneapolis contract to the CME's new spring wheat contract.

In our view, this all means a new sorghum futures contract has a very low chance of attracting liquidity needed to survive. In order for the contract to have any chance of surviving and attracting liquidity, we believe the following are necessary prerequisites, and even then success is not guaranteed:

1. Actively develop interest from commercial hedgers.

The exchange must make sure to gauge interest in the contract from commercial elevators and end users. From our interviews with commercial interests, there appears to be little interest in moving away from cross-hedge opportunities. A clear hedging need must be demonstrated to attract commercial interest, or the contract will be dead in the water.

2. Incentivize market makers to participate in bootstrapping liquidity through an incentivized designated market maker program.

Recruiting and providing incentives to designated market makers can improve market quality, and help skip over the chicken-and-egg stage of bootstrapping liquidity (Bessembinder et al., 2020; Li et al., 2024).

3. Add delivery locations further west than Hutchinson and Salina.

It is important that the delivery locations match where a large portion of commercial activity takes place. Using the existing locations of the KC HRW wheat contract and not adding delivery locations west of Hutchinson and Salina where the most intense sorghum production counties are found can cause problems, which we discuss in the subsequent subsections.

Concerns with Delivery Locations of the Proposed Contract

The new sorghum contract will utilize the same delivery rules and elevators that are regular for delivery for the KC HRW wheat contract. The HRW contract was recently revised to include shuttle train loadout on Class 1 railroads within 75 miles of the original switching districts of Kansas City, Salina, Hutchinson, and Wichita. If the sorghum contract proves viable, CME has indicated more delivery locations could be added west of the current HRW delivery regions.

Figure 3 shows the delivery regions against planted acres of sorghum and HRW wheat for comparison.[5] While the KC HRW delivery regions align nicely with the most intense production regions for HRW wheat, the biggest sorghum producing counties lie to the west of the HRW delivery regions. If we compare the sorghum acres inside versus outside the KC HRW delivery regions with the HRW wheat acres inside verses outside we see that for sorghum 17% of TX, KS, NE, OK, and SD planted acres fall within the delivery region versus 22% for HRW wheat.

[5] Figure 4 utilizes Risk Management Agency (RMA) data as National Agriculture Statistics Service (NASS) data does not estimate or publish acreage in counties with little acreage. The RMA data reveals insured sorghum acres in all counties, allowing for a better picture of the sorghum production area. The RMA data reflects an estimate as 1) the data does not capture non-insured acreage; and 2) double counts crop-share acreage. We adjusted the RMA data downward to reflect double counting by identifying how many acres the RMA data was over NASS data for a county and a year.

While it is understandable from a cost efficiency perspective why CME would like to use the KC HRW wheat delivery system for a new contract like sorghum, the production regions do not line up perfectly. In our opinion, this mismatch could spell trouble for the sorghum contract. There is a chicken and egg problem because before the contract proves itself the exchange does not want to invest in building out new relationships with elevators west of the current regular for delivery elevators. On the other hand, large commercial hedgers will only use the contract if it serves their hedging needs. As it stands with the current delivery proposal, there is a lot of production that would have to be moved east to be in position for delivery.

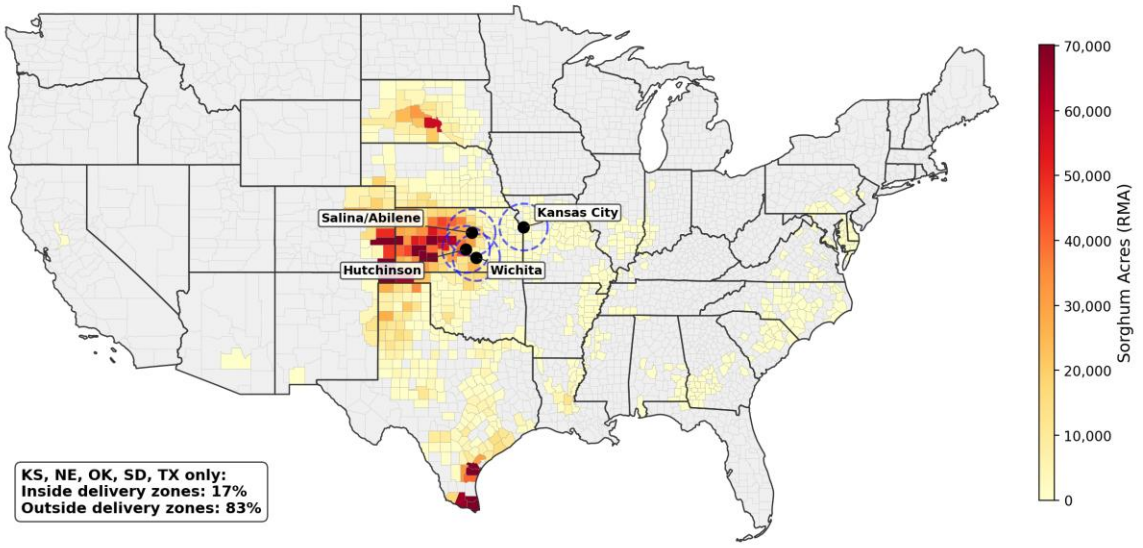
Is 17% sorghum versus 22% HRW wheat acres inside the delivery region enough of a difference to matter? It is hard to say beforehand. In our opinion, though, because sorghum production is less than half the size of the HRW wheat crop the contract design will have to be maximally appealing to attract the volume from commercial hedgers. Without commercial hedgers speculators will not bother to trade the contract either, and the contract will never achieve escape velocity out of the liquidity trap all new contracts face.

A related issue relative to the proposed HRW delivery locations for the sorghum contract is that not only is a large portion of the production outside the delivery region, but end users as well. The major end users of grain sorghum are livestock feed and exports, with beef cattle production being the only livestock industry with significant concentration in Kansas. The top 5 largest Kansas counties by cattle on feed are Haskell, Scott, Finney, Gray, and Grant. These all lie to the west of the HRW delivery region and align with some of the most intensive sorghum production counties in the country. The

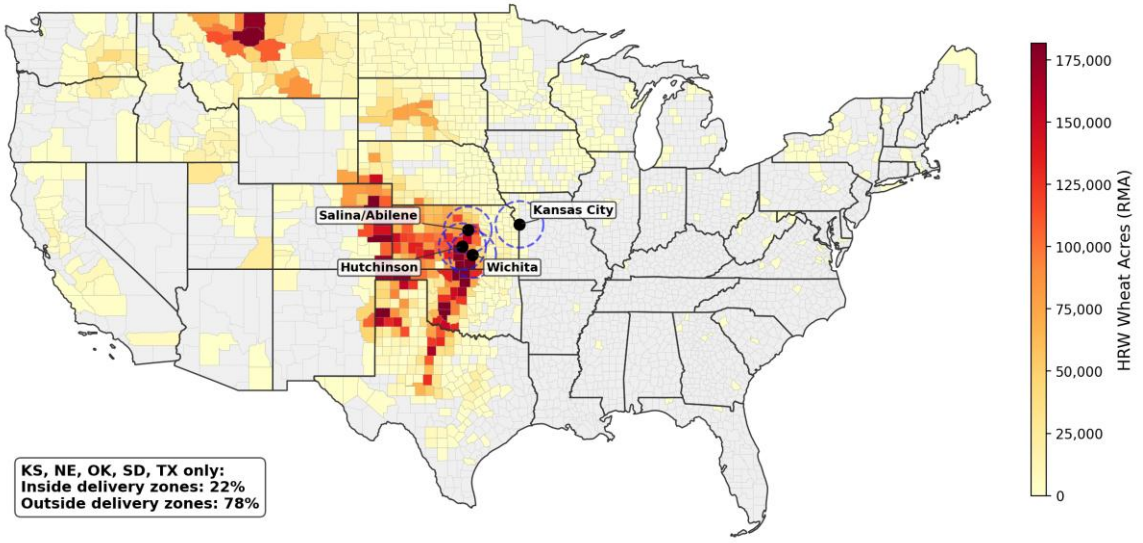
lack of end user demand present in the delivery region will be a hindrance to efficient price discovery needed for contract survival (USDA - National Agricultural Statistics Service Census of Agriculture, 2022).

Figure 3: U.S. Planted Acres by County and Contract Delivery Regions

Panel A: Sorghum



Panel B: KC HRW Wheat



Note: County planted acres in 2024 (most recent year with complete data). Source is RMA acreage data and author's calculations. Delivery regions for the proposed New Sorghum Futures Contract are shown as circles with a 75-mile radius around the current HRW wheat switching districts of Kansas City, Wichita, Hutchinson, and Salina. We calculate production outside the 75-mile radii around the current HRW wheat switching districts. To do so we assign all county production to the county centroid. If the county centroid falls outside of each circle, we consider that county's production outside the delivery region. Otherwise, that county's production lies inside the delivery region.

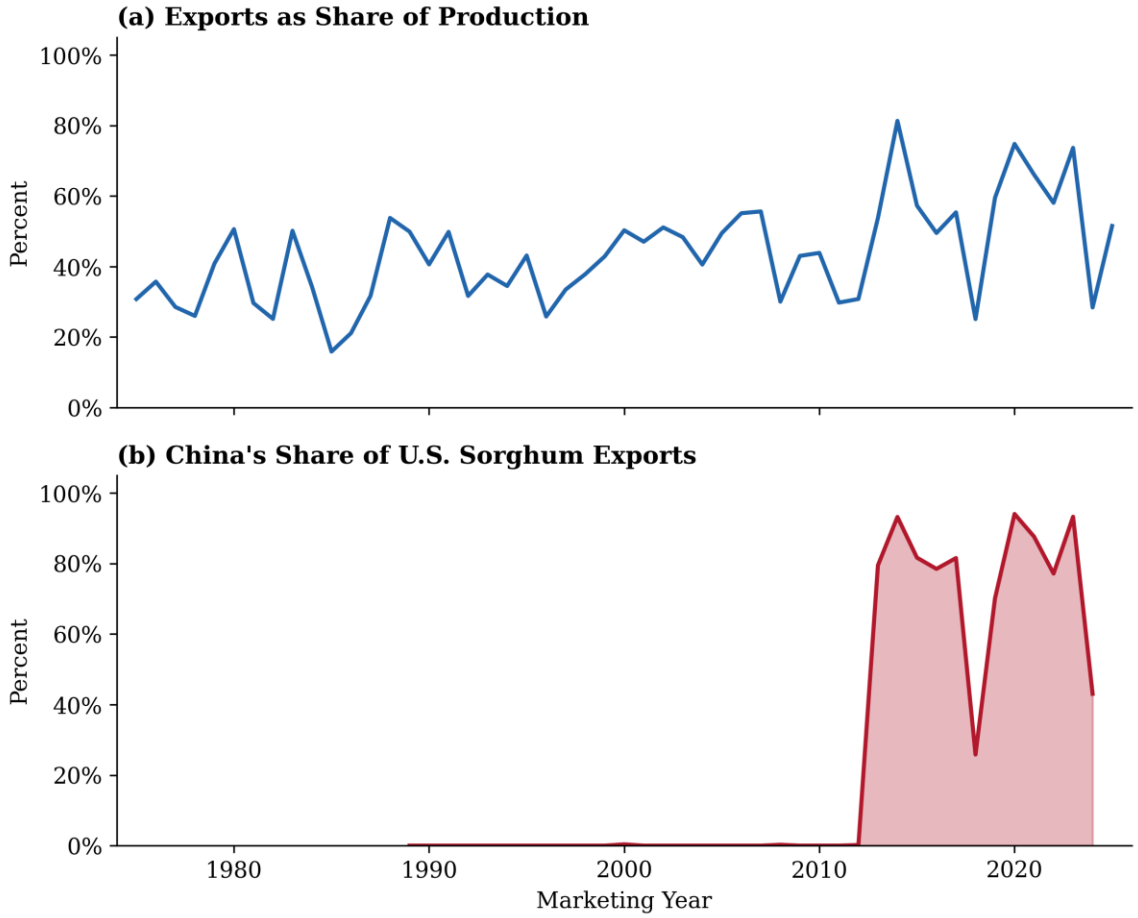
Concerns with the Current State of the Cash Market

Further, we know from Gray (1966) and Till (2015) that successful futures markets require there to be a healthy cash market for the commodity, that way the futures contract can contribute to making and taking delivery of the product as one of its functions for commercial market participants (Gray, 1966; Till, 2015). Currently, the cash market for sorghum is under stress. Exports to China have collapsed with 2024 marketing year exports down 97% compared to 2023. Figure 4 shows exports as a share of production and China's share of exports. Prior to 2013 China bought almost no sorghum from the U.S. Within a couple of years, they accounted for nearly all the U.S.'s exported sorghum. The trade wars of the first and second Trump administration can be seen by the two sharp crashes in China's export shares in the 2018 and 2024 marketing years.

This on again off again relationship with China has been especially hard on sorghum. There has been a significant loss of key infrastructure, especially in the Gulf Coast that typically receives sorghum shipments by rail to load out on ocean liners for the export market (Duff, 2025).

Several elevators serving the export market have shut down, and others have stopped biding for sorghum even if they are bidding for other commodities like corn or soybeans ("Farmers Hopeful Interstate Grain Elevator Will Operate Again.," 2019). In all, there are around 40 locations not taking sorghum today that were in 2020. Therefore, the state of the cash market currently is not conducive to launching a futures contract.

Figure 4: Annual Sorghum Exports as a Share of Production and China's Share of Annual Exports, 1975-2025



Note: U.S. sorghum exports, 1975–2025. Panel (a) shows total exports as a percentage of production, both measured in million bushels (Table 5 and Table 1). Panel (b) shows China's share of total U.S. sorghum exports by volume in thousand metric tons (Table 22). Source: USDA Economic Research Service, Feed Grains Yearbook. Marketing year begins September 1 (October 1 prior to 1986). China export data by destination available from 1989; China's share was negligible prior to 2013. The 2025 value is a USDA projection.

Concerns about Potential for Market Manipulation

Attempts to manipulate commodity futures markets are as old as the markets themselves. Pirrong (2017) cites several modern cases of alleged manipulation in soybeans, copper, gold, natural gas, silver, refined petroleum products, cocoa, and cotton. He notes that, "Manipulation is therefore both a very old problem, and a continuing one." He continues to be proven right; a perusal of recent CFTC enforcement actions reveal allegations of attempts to squeeze, spoof, and wash trade in commodity futures markets.

Markham called commodity futures price manipulation an "unprosecutable crime" due to the difficult burden of proof required at the time of his writing (Markham, 1991). Reforms in the Dodd-Frank Act significantly eased the burden of proof on regulators (CFTC, 2011). Since then CFTC enforcement activity has expanded dramatically (CFTC, 2023, 2024). Still, the CFTC is underfunded and understaffed compared to the task of regulating commodity futures and swaps markets (Roll Call, 2026).

The biggest issue for producers is that if manipulations occurs, it typically takes years for enforcement action to go through trial or settle. For example, the CFTC accused Kraft Foods Group Inc. of manipulating wheat futures in 2011 in a complaint filed four years later in 2015. The case was settled in 2022, 11 years after the initial complaint (Kraft/Mondelez admitted no wrongdoing, but agreed to pay $16 million) (*CFTC Settles Enforcement Action Against Kraft and Mondelēz | CFTC*, 2022). When enforcement action takes that long, the individual producers on the wrong side have already suffered irreversible harm (CFO.com, 2019). Therefore, it is imperative that manipulation be

discouraged through a dual approach of good contract design and vigorous regulatory enforcement.

Allen and Gale (1992) classify market manipulation as action-, information-, or trade-based; market power manipulation (of which corners and squeezes are most common in commodity futures) is an action-based manipulation Pirrong (2017). Pirrong (1993) shows how an increasing marginal cost structure of deliveries can permit short squeezes where longs that control a significant percent of the deliverable supply and therefore can manipulate the price higher. Since it is costly to move the commodity into deliverable position, the long who controls the physical supply traps the short(s) who have to close their position at a price above the competitive level. After the squeeze this can lead to 'burying the corpse' where the price falls after the squeeze because the artificially high price at the delivery location causes more commodity to be moved there than would have occurred under the competitive price. When the squeeze is over, the extra supply at the delivery location causes the spot price to crash. Obviously, producers who end up selling into depressed prices on the backside of a short squeeze will be harmed.

A similar thing can happen with a short manipulation (though Pirrong notes the short squeeze instigated by the longs is the more common manipulation). If the commodity can be moved into the delivery location at constant marginal cost, shorts can effectively flood the delivery market with supply, causing the cash price to go down to the benefit of their short futures position. The short can either cover at low futures prices, or they can easily source the commodity to deliver into the futures contract. Producers who sell while prices are depressed from the short manipulation will be harmed.

Since we are considering the possible launch of a new sorghum futures contract, the relevant question is when are these market power-based manipulations most possible to pull off? Pirrong (1993, 2017) argues that this kind of manipulation is most possible when there is enough volume where a trader can accumulate a large position in the cash and futures market without being detected, but concentrated enough that they can build a large position relative to the rest of the market.

This implies there is a kind of sweet spot where the market is small enough and/or concentrated enough that one player can obtain control a large portion of the cash market, but at the same time that there is enough trading that they can accumulate a large position in the futures market without being detected. In our view, if the sorghum contract launches to middling success (meaning it attracts small but consistent volume) it will be particularly vulnerable to this.

We argued above that the mismatch between the HRW delivery locations and the sorghum production acreage could cause problems for the contract. Market power manipulations are exactly what we have in mind. The elevators regular for delivery are quite concentrated; Cargill alone controls 35% of the elevator capacity in the HRW delivery regions (see Table 1). While this does not seem to cause problems in the HRW wheat contract, or in the corn contract where Cargill also holds 35% of the standing elevator capacity, the difference is that in the case of HRW wheat and corn there is a lot of deliverable supply close by and able to move into position for delivery. We saw in Figure 4 that 17% of sorghum acres compared to 22% of HRW wheat acres lie within the delivery region. This means it would be more costly to move sorghum into position than it currently is for HRW wheat, and therefore a squeeze would be easier to pull off.

Table 1: Capacity Regular for Delivery by Firm

Panel A: KC HRW Wheat Contract

Company	Total Capacity (bu)	Percent of Deliverable Capacity
Cargill	81,330,000	35%
Bartlett Grain Company	36,457,000	16%
Bunge USA Grain	30,542,000	13%
ADM Grain Company	28,374,000	12%
The Scoular Company	20,443,000	9%
Producer Ag	11,004,000	5%
AgMark	10,685,806	5%
Ardent Mills	5,682,000	2%
Hansen-Mueller	4,545,000	2%
Flint Hills Grain	2,152,000	1%
Grand Total	231,214,806	

Panel B: *CBOT Oats*

Company	Total Capacity (bu)	Percent of Deliverable Capacity
General Mills Operations	26,128,000	45%
Riverland Ag Corp.	18,978,000	33%
Savage Riverport	9,276,000	16%
Hansen-Mueller Co.	3,796,000	7%
Total	58,178,000	

Panel C: CBOT Corn Contract

Company	Total Capacity (bu)	Percent of Deliverable Capacity
Cargill	23,406,000	35%
ADM	12,678,000	19%
Consolidated Grain and Barge	11,985,000	18%
Lakeside Grain Trading	11,348,000	17%
CHS	3,909,000	6%
Bunge North America	1,116,000	2%
Consolidated Grain & Barge	899,000	1%
Louis Dreyfus	750,000	1%
CHS (Through put)	55,000 bu/day	
Zen-Noh Grain (Through put)	220,000 bu/day	
Grand Total	66,091,000	

Note: Source, Chapter 7: Delivery Facilities and Procedures. CBOT Rulebook. Facilities listed in live spreadsheet linked to rulebook chapter. Chapter 7. CHS and Zen-Noh Grain do not have capacities but are listed as 'Through Put' because they do not have dedicated storage capacity, though those facilities can issue shipping certificates from their Through Put capacity.

Recent experience in oats suggests our concern over potential for manipulation attempts is warranted. There are important parallels between the oats and sorghum markets. First the oats contract is small contract compared to corn, soybeans, and wheat. In our opinion, if the sorghum contract is launched, its trading volume and open interest will likely be more similar to oats than KC HRW wheat, or fall somewhere in between. For perspective, corn volume and open interest is routinely approximately 500 times and 250 times that of oats, and HRW wheat volume and open interest is often about 100 and 50 times oats volume, respectively. Both oats and sorghum contain relatively concentrated ownership of deliverable capacity. And finally, both crops have significant production areas outside the delivery region.[6]

We draw attention to oats since it is also a small volume grain that had a major manipulation enforcement action. In 2023 Ceres Global Ag Corp (which was purchased by Bartlett Grain Company in 2025) was accused of and settled charges filed against it by the CFTC for attempting to manipulate the oats contract in 2016 and 2017. The case was settled without Ceres admitting to wrongdoing (*INVESTOR ALERT*, 2023). The CFTC alleged Ceres traders were directed to build a large long position up to the speculative position limit while simultaneously purchasing a large number of shipping certificates without drawing attention to itself by other market participants – a classic short squeeze. At the time, Ceres operated four large warehouses that were regular for delivery in the oats contract (Clayton, 2023). It is not clear what percentage of deliverable capacity they represented, but Table 1 shows that oats is currently slightly more concentrated than the

[6] If we assume, as we have the whole article, that the HRW delivery system will be used for the sorghum contract.

HRW wheat and corn contracts in terms of companies controlling capacity regular for delivery.

This case highlights the potential for concentrated markets to provide opportunities for market power-based price manipulation. While the regulatory process works when the regulator has proper resources to pursue cases, there is a significant time lag and great uncertainty around when, if ever, producers who are harmed by manipulation will ever see justice or payment for the harm they experienced.

In our opinion, the sorghum contract would also be a prime target for trade-based manipulation, where traders attempt to mimic informed trade flow for the purpose of moving the price. Kyle (1985) showed that the price impact of an order is inversely proportional to market depth. The intuition being that it is difficult to push the price around of a deep market. Empirical research confirms this intuitive finding as well (Cont et al., 2014; Hasbrouck, 1991; Kyle & Obizhaeva, 2016).

Zhang (2022) discusses how traders who can obtain large positions in a derivative contract (like a future) and can influence the spot price, can then manipulate the derivative's price to their advantage. Zhang's model intuitively shows that concentration in storage capacity in the underlying as a direct manipulation risk.

We consider two primary scenarios for manipulation risk. First suppose that the sorghum contract launches to middling success (again defined as moderate volume but not deep liquidity). Then liquidity is likely to concentrate in certain times of the trading day like the open and the close. A trader could take a reasonably large position (long or short) without moving the price much. Then having established a large position, when liquidity is less, they could aggressively trade with the intention of moving the price.

Since price impact of orders is inversely proportional to market depth, the price could be moved a lot during the illiquid period. Then, as liquidity picks in into the close, the trader can offload their position at the more favorable price without moving the market. It is very difficult to prove that this kind of trading has a manipulative motive. This is in contrast to spoofing or wash trading, where intent can be gleaned directly from the order book and transactions.

While the first case is trade-based manipulation occurring purely in the future itself, there is also the potential to manipulate the price for financial gain utilizing both futures positions and by controlling the settlement price through the cash market. For this type of manipulation to be possible there should also be at least a moderate amount of liquidity in the futures contract and the delivery markets fairly concentrated. Here a trader could establish a large short position in the futures contract without moving price too much, then lower spot bids in the cash market. If the cash market is concentrated in the delivery region, this will move down the futures price. Then the trader can profit from the short futures position either by offsetting or delivering to settle the contract.

In both these scenarios, opportunity for manipulation requires sufficient liquidity that at certain points in time traders can obtain large positions without moving the price too much, then there being concentration in the cash market or periods of low liquidity that enable them to move the price with trading activity in the cash or futures market. Deep liquidity in the futures contract and competition in the cash market make manipulation attempts more difficult.

For that reason, a successful new sorghum contract could prove to be a curse for producers if they get caught in the cross-fire of manipulation attempts. Even if

manipulators ultimately get caught and fined or otherwise face justice, the process always takes years to resolve. Producers may not have the legal resources or the time to pursue compensation if they are harmed.

Potential for Unintended Consequences on the Sorghum Safety Net

The sorghum safety net consists of both Title 1 and Title 11 programs. Title 1 of the U.S. Farm Bill provides financial safety net for agricultural producers through both price and revenue support programs. Price Loss Coverage (PLC) represents a price program while Agriculture Risk Coverage (ARC) represents a revenue program. Title 11 represents crop insurance. Modifications to the sorghum price discovery process may result in unintended adverse effects on the safety net offered in both Title 1 and Title 11 programs.

Conclusions

The CME group is considering the reintroduction of a grain sorghum futures contract after nearly forty years without one. History has shown that grain sorghum futures contracts, despite design revisions, failed primarily due to low interest and liquidity. It appears that the central economic issue from past failures remains true today, that a futures contract succeeds only if commercial market participants find value. However, the design of the proposed grain sorghum contract is different, by quoting the difference between local sorghum and CBOT futures. The contract will function as a basis contract to corn.

Currently, sorghum producers and other commercial market participants utilize cross-hedging strategies with CBOT corn futures. Empirical research suggests corn futures provide an important reduction in sorghum price risk. Cross-hedging provides a

workable and well-understood sorghum hedging mechanism. The proposed grain sorghum futures contract design will require two positions for flat price exposure.

The proposed grain sorghum contract will increase transaction costs due to additional margin money and trade complexity. For a new grain sorghum futures contract to replace the current market structure, the contract must offer significant improvement in hedging effectiveness and/or lower transaction costs for a market where a structural shift in demand has occurred. We do not find evidence that a structural shift in demand has occurred.

The proposed grain sorghum futures contract delivery design, which will mirror the Kansas City HRWW contract delivery locations, raises additional concerns about success. A relatively small share of grain sorghum production lies within the proposed delivery region. Sorghum would have to move east, as most production lies west, to be positioned for delivery. The misalignment between production location and delivery design increases the risk of delivery (and therefore convergence), especially during years of production shortfall and/or export disruptions. Delivery on a basis contract appears to also be concerning in what games will be played and who will win and lose.

The risk around liquidity appears to be the most important threat to contract success. Past failures have revolved around liquidity. Thinly traded contracts impose higher transaction costs on participants. In particular, producers face danger of becoming trapped in a position with low liquidity with unreliable pricing.

Market manipulation risk furthers the producer's concern. Thin markets are historically more susceptible to forms of price distortion such as squeezes. Regulatory oversight exists, but enforcement and manipulation remain complex and costly. Limited

deliverable supplies, what appears to be limited commercial interest in participation, uneven cash market infrastructure (i.e., export market volatility), decreases sorghum futures market probability of success.

Additionally, the proposed sorghum futures contract may inadvertently exert adverse effects that are hard to predict beforehand on the farm safety net through price protection offered in both Title 1 and Title 11 programs.

Who bears the risk of contract failure? If the contract fails quickly due to low liquidity, then the exchange will bear the costs of failure. If the contract achieves a low level of liquidity, slightly higher than the minimum to delist, producers and commercial hedgers may bear the risk. If the sorghum futures contract is launched, producers and commercial hedgers must exercise caution in participation. For participation, the contract must demonstrate volume, tight bid-ask spreads, and convergence before including the contract into risk management strategies.

The economic conditions that accompanied failed previous sorghum futures contract attempts, i.e., cross-hedging opportunities (with tight bid-ask spreads, speculators, established price discovery), limited commercial demand, geographic delivery misalignment, and thin liquidity, appear to remain intact with this proposed launch. It appears a sorghum futures contract could provide value, but the burden of proof lies with the market to show that the contract can achieve volume and open interest to succeed. Until these conditions are met, cross-hedging with corn futures remains the more stable and proven risk management tool.

What has changed today in that commercials demand a sorghum contract? We were unable to identify an industry-driven incentive to participate in a grain sorghum

contract. Introducing a grain sorghum contract without industry demand can be dangerous as the contract can be a target for manipulation due to low liquidity.

The proposed grain sorghum futures contract is highly likely to fail due to a failure to attract liquidity. A result that would be worse than continuing with the current system of cross-hedging with corn.

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