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Permanent Subcommittee on Investigations
Committee on Homeland Security and Governmental Affairs
U.S. Senate

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A. Executive Summary:

Chairman Levin, Ranking Member Coburn, and Members of the Subcommittee, we commend you for your leadership in addressing the factors affecting the integrity and functioning of commodity markets, which we view as a critical endeavor. We appreciate the opportunity to present our thoughts on the recently released Subcommittee report entitled, "Excessive Speculation in the Wheat Market." This is a substantial piece, which provides a rich and detailed history of the wheat market and raises critical issues, such as the importance of price convergence between the cash and futures markets.

I have been involved with commodity markets for the last 15 years, having helped construct and manage commodity index products for much of that time. I served as a member of the Policy Committee for the Goldman Sachs Commodities Index (GSCI) from 1996 to 2007, at which time the index was sold to Standard & Poor's and became the S&P GSCI™. I have continued to serve on the Policy Committee maintained by S&P.

When we first conceived of the GSCI, we did so with an eye toward improving liquidity in the commodity markets by helping fill the gap between the large number of commodity producers who wish to hedge their risk, and the more limited number of consumers who are willing to provide those hedges (as the Subcommittee report discusses). Since the inception of the GSCI, passive investments in commodity markets have been a crucial source of this liquidity. Yet, investors who have provided this liquidity have been, in our opinion, inappropriately characterized as speculators with no real economic interest in these markets, and the growth in index investment seen as creating an imbalance rather than correcting one.

In fact, most of these investors are large-scale asset allocators who seek to invest in markets in which capital is in short supply. In doing so, they aim to earn a reasonable long-run return by improving the underlying economics of the industry. They therefore require real economic justifications for their investments and rarely invest based on short-term speculative market views.

Their primary concerns mirror those of this Subcommittee. Namely, what is the realistic capital need of these markets? Will investment distort prices and therefore reduce long-run returns? And are these markets liquid enough that prices will not be distorted by the allocation of passive capital? Reflecting these concerns, the Policy Committee of the GSCI sought to structure the Index so that it provides the greatest possible liquidity, with the least possible market impact from passive investments. It has regularly assessed whether capital allocated to individual contracts exceeds the ability of these markets to absorb that capital. We would stress, as does the Subcommittee report, that this capital is needed to balance these markets and allow them to fulfill their desired function of allowing producers and consumers to operate more efficiently and manage price risk well.

With this in mind, we would like to turn our attention to the specific concerns raised and recommendations made in the Subcommittee's report. As we mentioned earlier, this is a

substantive and detailed piece. But our work leads us to some very different conclusions from those reached in the report, with important implications for regulatory policy. We will briefly outline these key differences, and then delve into greater detail later. We hope our thoughts will prove useful:

- The Subcommittee report concludes that passive index investments have been responsible for price volatility in the Chicago Mercantile Exchange (CME) wheat market (or “Chicago Wheat”), but our analysis leads us to a different conclusion. As part of our ongoing testing of the GSCI, we look at this issue by comparing the price performance of Chicago wheat versus the performance of other agricultural markets without passive index investments. In those markets, we observe similar price moves. For example, wheat contracts not included in passive indices, such as Minneapolis wheat, have experienced even greater price volatility than Chicago wheat. We also look at this issue by looking at the performance of commodities that are subject to similar economics as Chicago wheat, such as rice and oats. Here we also find very similar price patterns. These analyses strongly imply that passive investments were not the cause of price distortions in the Chicago wheat market. Therefore, restrictions in passive investments would not likely have lessened price volatility.

We would note that our work on the impact of speculation shows that non-index speculation has had far more impact than passive index investment, both per dollar invested and in total. The reason for this is straightforward. Index investments are made slowly and predictably, and contracts are exited well before settlement. Non-index investments, however, tend to be strongly correlated with underlying fundamentals and they tend to be focused on price levels. Thus, their size is adjusted to passive index investments, offsetting the effects of those investments.

- The Subcommittee report also concludes that passive index investments impede price convergence between Chicago Wheat futures contracts and the cash market. We believe this is a very important issue. However, our view is that this lack of convergence is not due to index investments, but is instead driven by flaws in the design of the Wheat futures contracts. Put simply, the high degree of flexibility of delivery options for consumers built into Chicago futures contracts, and the difficulty of delivery into those contracts for producers, makes the futures more valuable than the underlying wheat. This is particularly true when the volatility of cash wheat prices is high. If we compare the value of those options with the basis volatility raised as a concern in the Subcommittee report, it becomes clear that it is contract design and not speculators that result in this basis risk.

The role of delivery restrictions, such as those in the Chicago Wheat contract, impeding price convergence between the futures and the cash market is something the Chairman and members of the Subcommittee have highlighted with respect to the crude oil market. We think the solution here should parallel suggestions made by the Subcommittee about crude oil. Namely, the number of delivery sites should be expanded and terms for delivery should generally be eased. The CME has already made some substantive adjustments to the delivery rules, several of which went into effect this month, but it is not yet clear whether these changes will be sufficient. It is clear, however, that changes in delivery procedures can fix the basis risk problem.

- The Subcommittee report also suggests that position limits or the elimination of index investing would reduce volatility in Wheat prices. Given our view that index investing did not cause price volatility or convergence issues, we do not think there will be much to gain by implementing such restrictions. However, there could be significant negative consequences:
 - First, a large number of index investors are based outside of the U.S. Given that there are equivalent contracts traded on non-U.S. exchanges, much of the activity generated by these investors would likely migrate offshore.

- Second, the proposals currently being suggested would not actually restrict the aggregate size of the positions taken by U.S. investors. Instead, these positions would likely be splintered across multiple brokers, ETFs and mutual funds, so that each of these vehicles would remain below their individual position limits. Under the kind of stressful market conditions that most concern this Subcommittee, such a splintering would likely lead to even greater market volatility. The sale of large positions in periods of market stress is a significant destabilizing market action. When these positions are in the hands of a single party or a small numbers of parties, their orderly sale is possible. When these positions are in the hands of multiple dealers, the rush to sell is stronger, as each dealer or fund manager is incentivized to sell before another. This is especially true for dealers running smaller trading books or for mutual funds and ETFs who compete for the best relative performance. For these participants, a faster sale is best. This can lead to very disorderly markets and extreme volatility in times of stress. Thus, it is our view that splintering existing positions could lead to greater price volatility and the likelihood that prices overshoot underlying fundamentals.

Attempts to regulate volatility have rarely – if ever – succeeded. Yet they often have unintended and significant consequences. As we look to the future, we think the harmful volatility that has been observed in many markets in the recent past begs us to focus on the question of “which types of market rules and oversights allow participants to best manage their risk at a reasonable cost?”

In sections B through F of this report, we delve into greater detail on the key areas of divergent opinion we highlighted earlier.

B. The Role of Financial Participants in Commodity Futures Markets:

As we have mentioned, the role of financial participants in the commodity futures markets is often, in our view, misunderstood. In this section of the report, we will present our thoughts on the important roles these participants play in these markets, and address some of the key misconceptions.

- **Index investors bear commodity price risk instead of producers**

One of the exceptional achievements of the commodity futures markets is the separation of the ownership of commodity price risk from the ownership of the physical commodity. That is, these markets allow participants to buy and sell the commodity price risk without requiring the exchange of the physical commodity.

This separation can create economic benefits. The producer - who by nature must hold the physical commodity - is no longer required to bear all of the risk of price fluctuations, against which it would need to hold expensive equity capital. Instead, the producer can shift this risk off of its balance sheet. This frees up expensive equity capital and allows the producer to focus on its core competency of operating its business, rather than the management of commodity price risk.

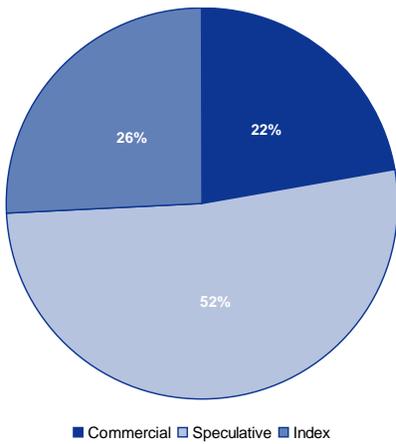
Index investors are remarkably well-suited to bear the commodity price risk that producers wish to shed. They are typically long-term investors with diversified portfolios of equities and bonds, such as pension funds and endowments. Commodity futures investments offer these investors an asset with an equity-like rate of return, but one that is not correlated with equity and bond returns, and therefore offers a good source of portfolio diversification. Further, commodity index investments provide greater protection from inflation, although the trade-off is greater exposure to the risk of economic

recessions. However, given that these investors have long-term investment horizons, they are best suited to bear this macroeconomic risk than are other investors.

By facilitating the transfer of commodity price risk from commodity producers, who would have to hold expensive equity capital against it, to long-term investors who are better able to hold that risk within their diversified portfolios, the participation of commodity index investors actually *lowers* the cost of managing commodity price risk.

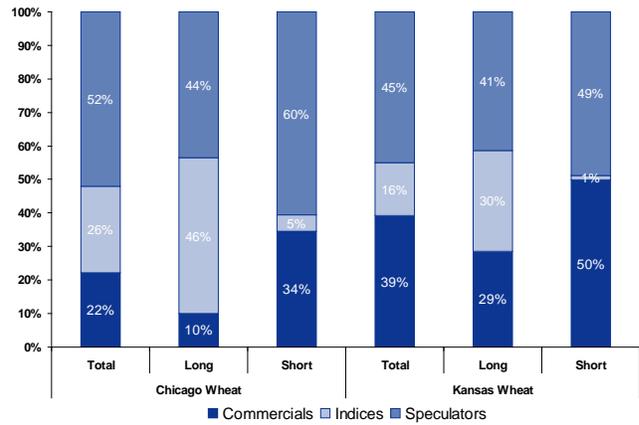
In this regard, the growth of commodity index investments has been a process of reducing a market distortion, rather than creating one. In fact, the creation of the commodity indices was driven by the need to supply capital to meet the hedging demands of commodity producers, which are typically far larger than the hedging demands of commodity consumers, creating a market imbalance. Commodity indices were conceived as a means to channel a supply of stable long-term capital to correct this imbalance (see Exhibit 1 and 2).

Exhibit 1: Wheat breakdown of total positions
% of positions (positions = 2x open interest)



Source: CFTC; Goldman Sachs Global ECS Research

Exhibit 2: Wheat breakdown of total positions
% of positions



Source: CFTC; Goldman Sachs Global ECS Research

While commodity index investments have grown, the size of the indices relative to the other market participants suggests that the market is balanced. In the Chicago wheat market, commodity index investors hold 22% of total long plus short positions, while speculators hold 52% and commercial participants 26%¹. Because speculators - whose role is to maintain the balance between prices and fundamentals - continue to hold nearly 50% of the positions in the market, it becomes difficult for other participants to distort the market, as speculators can adjust their positions to compensate.

Further, the economic role of index investors in the commodity futures market is to supply a stable pool of passive, unleveraged capital to bear commodity price risk. By moving the commodity price risk from the physical producers to an investor better-suited to bear it, index investors lower the cost of capital for commodity producers by allowing them to hedge with a counterparty that is willing to bear the risk at a lower expected return. By lowering the cost of capital for these commodity producers, index investors allow producers to supply the physical commodity at a lower price over the long-term.

¹ Data are from the CFTC Commitments of Traders Report. See <http://www.cftc.gov>.

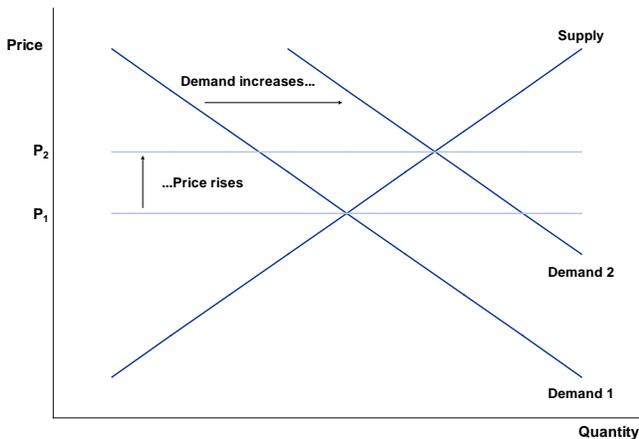
Consequently, even if the increase in index investment is driven by investors: (1) becoming more comfortable with commodities as an asset class, (2) perceiving commodities as less risky than they did before, and (3) being willing to hold commodity price risk at a lower expected return, the impact would be to drive physical commodity prices down - not up - over the long run.

- **Commodity indices are structured so that they don't create artificial demand**

Because financial participants are net buyers of commodity futures from producers, it is easy to view speculators and index investors as another type of consumer. And therefore to view their commodity futures purchases as another form of demand. The logical implication of this view is that purchases of commodity futures by speculators and index investors drive up commodity prices as any other form of demand would (see Exhibit 3).

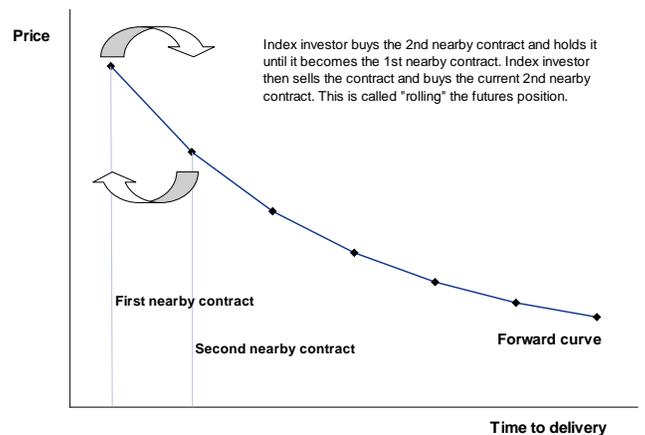
However, this view fails to recognize that speculators rarely – and index investors never – take physical delivery of the actual commodity, let alone consume it. Instead, all of the commodity futures contracts that speculators and index investors buy from producers (on net), are sold back to producers (on net) before supply ever meets demand in the physical market.

Exhibit 3: As physical demand increases, the pull on higher cost supply causes physical prices to rise
Price (vertical axis), Quantity (horizontal axis)



Source: Goldman Sachs Global ECS Research

Exhibit 4: Commodity investors “roll” futures positions back out the forward curve instead of taking delivery
Price (vertical axis), Time to delivery (horizontal axis)



Source: Goldman Sachs Global ECS Research.

In the case of index investors, this selling back of all commodity futures purchased before the time of delivery is built into the mechanical structure of the commodity index itself. For example, as of July 15, 2009 the S&P GSCI™ index holds Wheat futures for delivery in September of 2009. During the 5th-9th business days of August, the index will sell those September futures contracts and purchase contracts for delivery in December of 2009. This process is called “rolling” the futures positions. As we show in Exhibit 4, this process involves selling futures as their delivery time approaches and then buying new futures farther out on the forward curve. In this manner, index investor maintain their investments in Wheat futures at a fixed point on the forward curve, much like a bond investor seeking to maintain a constant maturity in his or her bond portfolio. By “rolling” their commodity futures positions in this way, index investors never take physical delivery of the commodity and so cannot be adding to physical demand.

C. The Impact to Prices from Financial Market Participation in Futures Markets:

- **Speculators support a more efficient price discovery process**

While index investors passively earn returns as payment for bearing the risk of commodity price fluctuations, speculators actively seek to earn profits by anticipating fluctuations in commodity prices. Speculators believe they can anticipate price fluctuations because they believe that their analysis and understanding of the market has provided them with a more informed view of future fundamentals. That is, they buy commodity futures when they believe the market has underestimated the tightness in forward fundamentals and sell when they believe the market has overestimated them.

Unlike the investor who seeks to reduce his risk through diversification and only earns a return for holding the remaining risk, if a speculative trader is to profit on his well-informed views, he must instead manage a concentrated risk exposure in the market where these views are most informed. The speculative trader will be willing to hold a larger position, and a greater concentration of risk, the greater he perceives the expected profit to be and the greater his confidence in his views.

Consequently, the more a speculator perceives the market's pricing to be out of line with supply and demand fundamentals, the larger the position he is willing to hold. While the rest of the market does not, at first, know the view of speculative traders, they can observe the speculators' positions in the market. When they see the speculators buy or sell, they may infer the speculators' view on fundamentals. For example, when other market participants see speculators buy, they are likely to infer that future physical prices will be higher and they will raise the futures price at which they are willing to trade. Conversely, when other market participants see speculators sell, they are likely to infer that future physical prices will be lower and will therefore lower the futures price at which they are willing to trade. In short, the impact of speculators on commodity futures prices is dependent upon how other market participants react to the information that the speculators are revealing.

It is important to note, however, that speculators can be wrong – either because the information they are using is misleading or incomplete. When this occurs, speculative positions can move prices away from future fundamentals. However, in the long-run, speculators who are wrong more often than they are right, are forced to exit the markets.

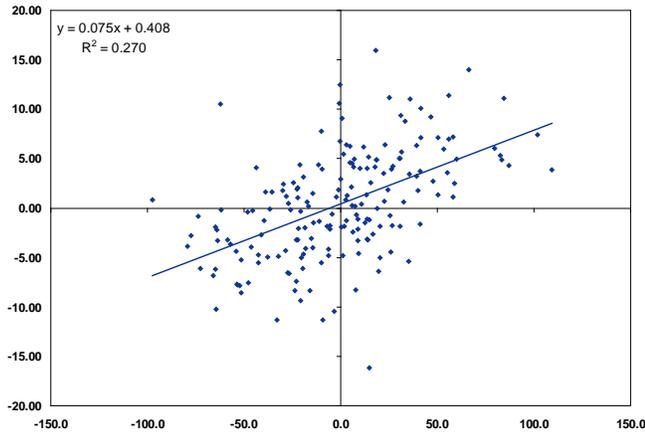
Simply by seeking to profit on the information they have gathered and assessed through their own research and analysis, speculators in aggregate reveal this view to the rest of the market. It is in this way speculators impact prices by bringing to the market views on forward supply and demand fundamentals that change the price at which the market is willing to trade. They are therefore an important part of the market's price discovery mechanism.

As such, we would expect prices to move with the positions of active view driven speculators, while being relatively unresponsive to the predictable passive positions of the index investors. This is what we observe in the market: increases in the size of speculative longs based on expectations of fundamentals are correlated with rising prices (see Exhibits 5-8). Changes in the positions of index investors are not.

The reason for this is straightforward. Index investments are made slowly and predictably, and contracts are exited well before settlement. Non-index investments, however, tend to be strongly correlated with underlying fundamentals and they tend to be

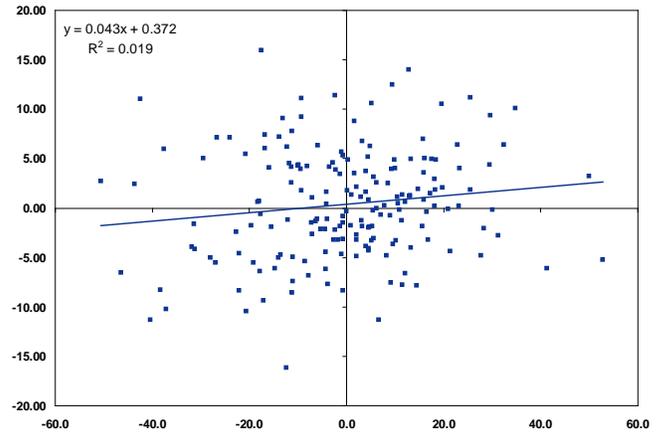
focused on price levels. Thus, their size is adjusted to passive index investments, offsetting the effects of those investments.

Exhibit 5: Wheat prices move with forward fundamental views of speculators... percentage (vertical axis), million bushels (horizontal axis)



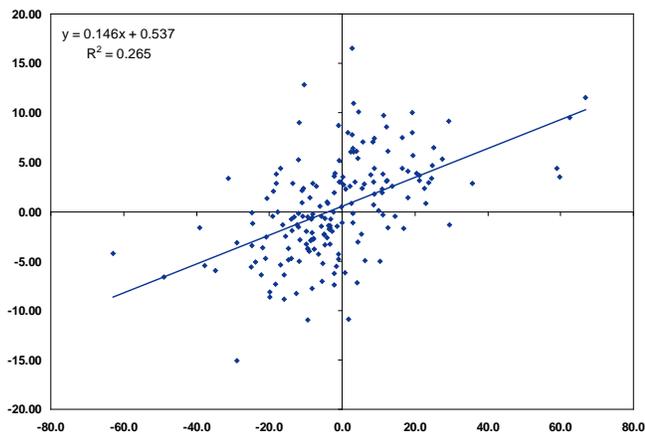
Source: CBOT, CFTC, and Goldman Sachs ECS Research.

Exhibit 6: ... but not with index investors percentage (vertical axis), million bushels (horizontal axis)



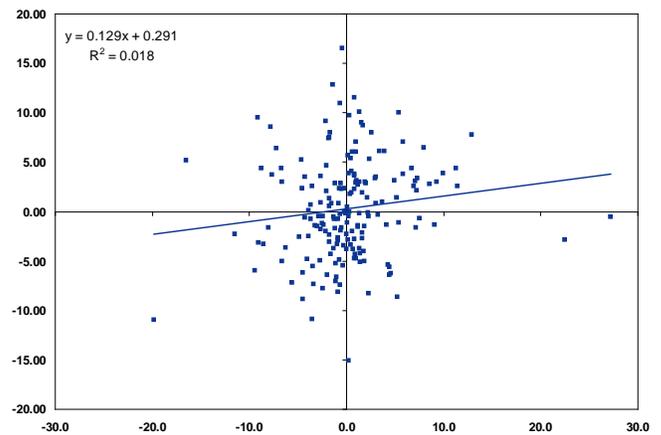
Source: CBOT, CFTC, and Goldman Sachs ECS Research.

Exhibit 7: Kansas Wheat prices move with forward fundamental views of speculators... percentage (vertical axis), million bushels (horizontal axis)



Source: CBOT, CFTC, and Goldman Sachs ECS Research.

Exhibit 8: ... but not with index investors percentage (vertical axis), million bushels (horizontal axis)



Source: CBOT, CFTC, and Goldman Sachs ECS Research.

- **Index investors do not appear to impact Wheat futures market price volatility**

As it relates to the Wheat market and its close cousins, economists can certainly debate whether a specific price is justified by fundamentals without ever coming to an agreed upon conclusion. Thus, when we look for price distortions, we do not seek to match our view of what prices should have been against actual prices. Instead, we look for combinations of futures contracts subject to similar economics, but differing capital flows or technical aspects, to see what factors actually drove specific contract behavior. In the

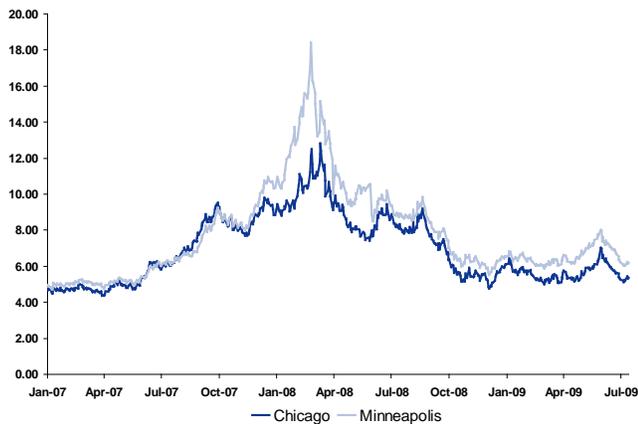
case of wheat, we would compare a wheat contract *with* index exposure against one with *little or no* index exposure. We would also look at non-wheat agricultural contracts. The obvious choice in this case would be to analyze the two largest grains not included in commodity indices, but with large global trading – namely, rice and oats.

To compare a wheat contract *not* included in an index versus one that *is* included in an index, we could look at Minneapolis wheat prices versus Chicago wheat prices, as Chicago wheat has far greater index investments. When we conduct such an examination, we see more instability in Minneapolis wheat prices, suggesting that if anything, index investing has helped to stabilize prices. See Exhibit 9. One caveat to note here is that Chicago wheat was included in many indices because it has more liquidity, and thus greater stability may simply reflect greater liquidity.

The comparison of wheat prices to rice and oat is particularly interesting, as rice is actually a larger commodity by global market size. What we see when we compare wheat to rice and oats is that increases in prices across these three commodities have been similar, but oat prices have declined by a greater amount. See Exhibit 10. While not definitive, this analysis strongly suggests that the mechanics and quantity of index investments did not drive the extreme price movement in the wheat market.

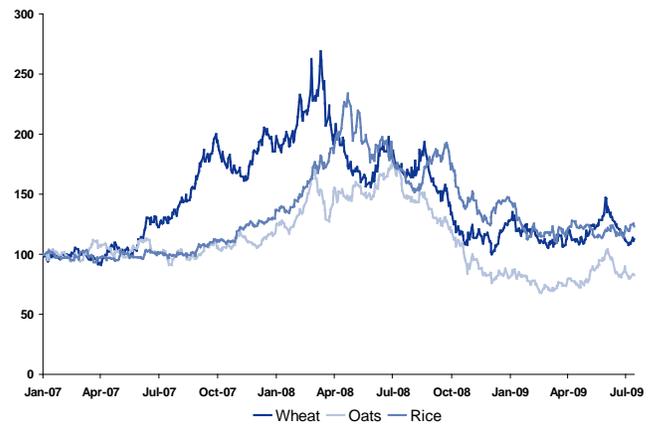
In the case of Chicago wheat contracts, we believe that changes to settlement procedures can substantially improve the impact of these contracts as they expire and shift from futures to cash. We also believe that attempts to restrict capital flows into these markets or limits on the ability of market-makers to provide the kind and amount of commodity exposure that investors demand will reduce market efficiency and increase costs for hedgers and investors seeking access to these markets.

Exhibit 9: Minneapolis wheat prices spike far higher than Chicago, despite little index investment...



Source: CME, MGEX and Goldman Sachs ECS Research.

Exhibit 10: ...Oats and Rice prices also increased sharply before declining

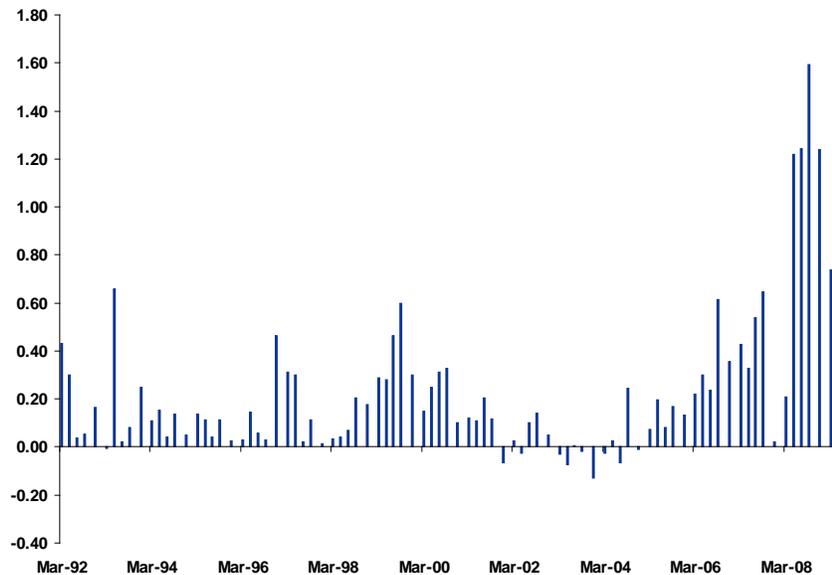


Source: CME and Goldman Sachs ECS Research.

D. Wheat Market Cash and Futures Convergence Issue:

We share the Subcommittee’s concerns regarding the failure of Wheat futures prices to converge to wheat cash prices over the past several years (see Exhibit 11). It is, after all, the convergence of the futures price to the cash price of the physical commodity at the expiry of the futures contract that gives confidence in the link between the financial and the physical markets. However, while convergence gives confidence in the link, it is the delivery mechanism of the futures contract that ensures the link to the physical market.

Exhibit 11: Wheat futures contract prices have failed to converge to the price of wheat in the cash market at contract expiry
\$/bu



Source: CME, USDA, and GS Global ECS Research.

In the textbook example of a commodity futures contract, the contract specifies delivery of a set physical amount of the commodity, on a specific date and at a specific location. Due to the delivery mechanism, as the futures contract expires it becomes equivalent to ownership of the set physical amount of the commodity at the specified delivery location. Consequently, if the futures price were higher than the cash price, it would offer a strong incentive to sell the futures contract, buy the physical commodity in the cash market and deliver it against the contract. In this way, one earns the spread between the futures and the cash price. We would expect this simple arbitrage to continue to be exploited until futures and cash prices converge.

In the case of the Wheat futures contract, however, the contract does not specify the delivery of a set physical amount of the commodity, but rather the delivery of a shipping certificate. This shipping certificate gives its owner the right to request and take delivery of a set physical amount of the commodity, but also gives the owner the right to defer taking delivery for an indefinite period of time, provided they pay a predetermined fixed daily premium.

The option to defer taking delivery of the physical wheat can make the shipping certificate more valuable than the value of the physical wheat alone. For example, suppose that a wheat consumer wants to take delivery of physical wheat one year from today. The wheat consumer could buy physical wheat today and pay to put it in storage for a year, say at a storage cost of 10 cts/bu per month. The wheat consumer could also take delivery of a shipping certificate from an expiring Wheat futures contract, and then defer taking delivery of physical wheat for one year, paying the predetermined premium of say 4.5 cts/bu per month. In this simple example, the wheat consumer would save 5.5 cts/bu each month by using the shipping certificate rather than storing the physical wheat. The wheat consumer would be willing to pay 66 cts/bu more for the futures contract at expiry – in order to secure the shipping certificate – than they would be willing to pay for cash wheat. Further, it must be kept in mind that the shipping certificate allows delivery to be

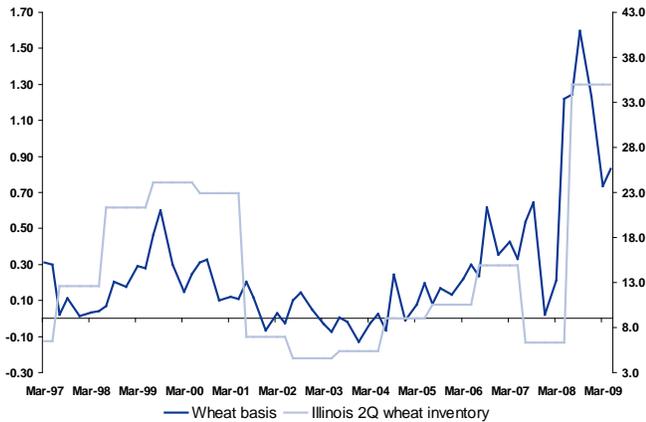
delayed indefinitely, and in periods when storage is full, one would expect market prices for storage to rise, both of which increase the value of the shipping certificate even further relative to the physical wheat.

In short, we would explain the failure of Wheat futures prices to converge to wheat prices in the cash markets at expiry as follows:

1. The Wheat futures contract converges in price to the price of the shipping certificate that is delivered against it at contract expiry.
2. Because the shipping certificate embeds the option (which has value) to defer delivery for a preset cost, in effect it can allow its owner to obtain storage at below market rates, particularly when inventory capacity is tight and storage costs are high.
3. Under market conditions in which spare storage inventory capacity is low and storage costs are high, or in which cash market prices are volatile, this embedded storage option makes the shipping certificate much more valuable than the physical wheat it represents.
4. The basis between Wheat futures and cash wheat prices at expiry equals the value of the option embedded in the shipping certificate.

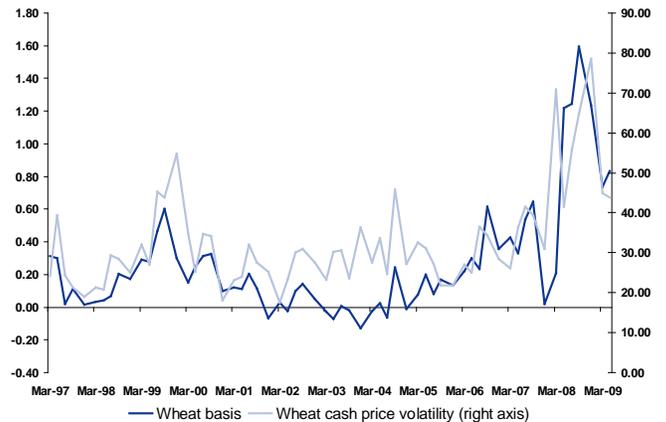
Under the reasoning laid out above, we would expect to see the wheat basis widen in periods of high inventories and high cash market volatility. This is exactly what we have observed in the wheat market (see Exhibits 12 and 13).

Exhibit 12: Wheat basis widens when Illinois wheat stocks reach high levels...
\$/bu (left axis), mn bu (right axis)



Source: CME, USDA, and GS Global ECS Research.

Exhibit 13: ... Wheat basis widens when the volatility of wheat cash prices increase
\$/bu (left axis), % per annum (right axis)

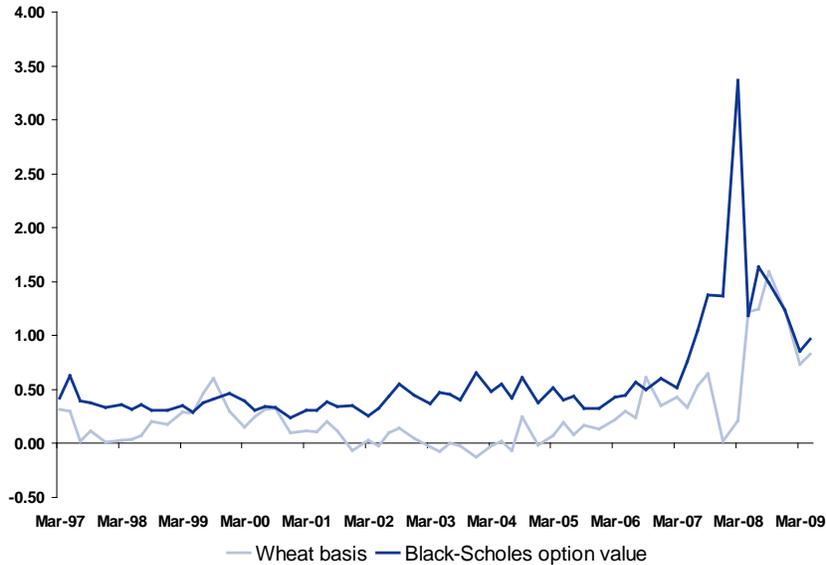


Source: CME, USDA, and GS Global ECS Research.

Another way of seeing this same point is to use the underlying volatility in the cash wheat market to value an option on physical wheat using the Black-Scholes model. As Exhibit 14 illustrates, periods of high cash wheat price volatility create a higher value for the option on physical wheat. While the complexity of the option embedded in the Wheat futures contract delivery mechanism precludes a simple exposition of its value here. The point remains that higher cash market price

volatility will increase the value of the option, and it will raise the value of the shipping certificate relative to the price of cash wheat.

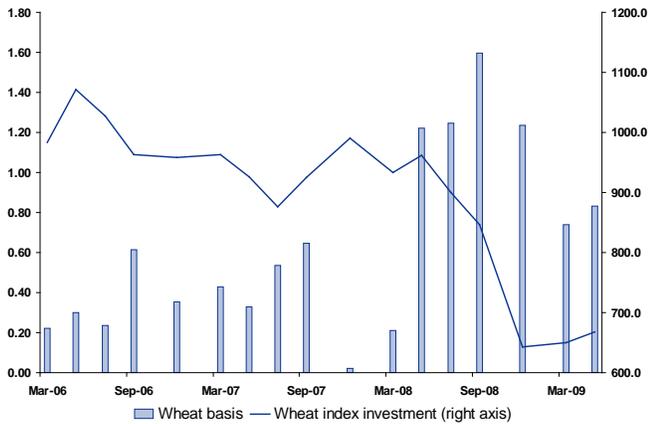
Exhibit 14: The value of an option on physical wheat, like the one embedded in the shipping certificate, rises with the level of volatility in cash market wheat prices \$/bu



Source: CME, USDA, and GS Global ECS Research.

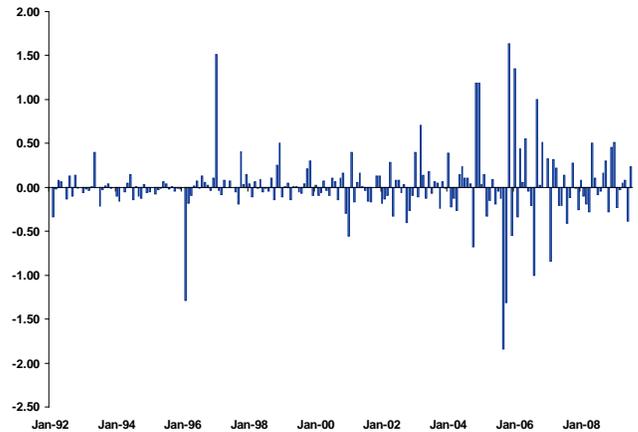
Conversely, we observe little correlation between the amount of index investment in the Wheat futures market and the basis (see Exhibit 15). This supports the idea that any index investment would be highly unlikely to interfere with price convergence at delivery, as the indices have rolled out of the futures contract long before it expires. Furthermore, if index investment was causing problems in the Wheat market, we would expect to see problems in other commodity markets in which index investors participate - but we do not. Interestingly, in the NYMEX natural gas market, which requires physical delivery, price convergence has not been a problem (see Exhibit 16).

Exhibit 15: Index investment in wheat declined over the period in which basis widened...
 \$/bu (left axis), million bushels (right axis)



Source: CME, USDA, and GS Global ECS Research.

Exhibit 16: ... The NYMEX natural gas market specifies physical delivery, and achieves price convergence
 \$/mmBtu



Source: CME, USDA, and GS Global ECS Research.

This reasoning is also consistent with the motives of the physical market participants. The farmer who has hedged his wheat production only to witness the futures price above cash at expiry would prefer to deliver his wheat in fulfillment of the futures contract, receiving the higher futures price rather than the lower cash price. However, this farmer cannot do this unless he is certified by the exchange to issue shipping certificates. Consequently, he is forced to buy back his futures position at the higher price and sell his wheat at the lower cash price. He could potentially sell his wheat to an elevator or shipper that is authorized to issue shipping receipts, but they will not want to put the wheat in their elevator at a low predetermined premium in situations where there storage capacity is limited. That is, the elevators and shippers do not want to give away these costly options on their limited storage capacity for free.

This reasoning also suggests that the remedy for the convergence failures in the Wheat market would be to reduce the value of the storage options embedded in the shipping certificate. In the extreme, this could be done by requiring the holders of the shipping certificate to take physical delivery within a specified time frame. This would force the price convergence, much like in the NYMEX natural gas market. However, many of the changes proposed and being implemented by the CME also reduce the value of the storage option embedded in the shipping certificates. These include:

- Adding three new delivery territories: 1) train loading facilities in a 12-county area of Northwest Ohio, 2) barge loading facilities on the Ohio River from Cincinnati to the Mississippi River, and 3) barge loading facilities on the Mississippi River from below St. Louis to Memphis.
- Introducing seasonal storage charges to the contract. These premium charges are increases during the period from July through November to 8 cents per bushel per month. During the remainder of the crop year, from December through June, premium charges remain at the current level of 5 cents per bushel per month.
- Reducing the vomitoxin level for par delivery from 3 cents per million (ppm) to 2 ppm. Wheat containing 3 ppm vomitoxin will continue to be deliverable at a 12 cent per bushel discount and wheat containing 4ppm vomitoxin will continue to be deliverable at a 24 cent per bushel discount.

E. Potential Consequences of Proposed Regulations:

We agree with the Subcommittee in regard to many of the problems that stem from the failure of the wheat contract to achieve price convergence at expiry. However, because we disagree with the Subcommittee's assessment that the failure to achieve price convergence is due to the presence of index investors, we believe the Subcommittee's recommendations to limit the involvement of index investors as a class of participants will do little to solve the underlying problem, and will likely have a number of unintended consequences on the functioning of the wheat market.

First, to the extent that restrictions on the ability of swaps dealers to hedge their risk on the U.S. exchanges limits the ability of index investors to allocate capital to the US commodity futures markets, the large number of index investors that are based outside of the U.S. will likely allocate capital to non-U.S. commodity futures exchanges. As detailed in Exhibit 17 there are many commodity futures contracts traded on European and Japanese exchanges that could become substitutes for U.S. commodity futures contracts. If capital and liquidity flowed off U.S. exchanges, the geographic center of price discovery in the global commodity markets would likely move outside the U.S., making hedging more expensive for U.S. commodity producers and price discovery more challenging for U.S. commodity consumers.

Exhibit 17: U.S. and non-U.S. exchanges

\$/bu

Commodity	US Exchange	Non-US Exchange
Crude oil	NYMEX	ICE* TOCOM
Heating oil	NYMEX	ICE*
Gasoline	NYMEX	TOCOM
Natural gas	NYMEX	ICE*
Gold	NYMEX	TOCOM
Platinum	NYMEX	TOCOM
Wheat	CME	MATIF
Soybeans	CME	TGE
Corn	CME	TGE

* Although the ICE is not a non-US Exchange, the contracts that formerly traded on the IPE before its acquisition by ICE could be reconstituted

Source: Goldman Sachs Research.

Second, because restrictions on swap dealers, or other financial intermediaries such as ETFs and mutual funds, do not limit directly limit the positions of the individual investor, they would likely simply lead to an expansion of the number of swaps dealers, ETFs and mutual funds, as individuals allocate their positions among a greater number of financial intermediaries. Further, these new financial firms would not be entering on the basis of knowledge or experience in managing commodity price risk, but simply on the basis of having room under the regulatory position limit, and likely would be undercapitalized and without sufficient infrastructure to manage risk well. The net result would likely be a similar aggregate number of positions, but splintered

among many smaller broker dealers, ETFs and mutual funds, with individual investors simply allotting their unrestricted position among a greater number of intermediaries.

Under the kind of stressful market conditions that most concern this Subcommittee, such a splintering would likely lead to even greater market volatility. The sale of large positions in periods of market stress is among the most significant destabilizing market actions. When these positions are in the hands of a single party or a small numbers of parties, their orderly sale is possible. When these same positions are in the hands of multiple dealers, the rush to sell becomes much stronger, as each dealer or fund manager is incentivized to sell before another. This is especially true for dealers running smaller trading books or for mutual funds and ETFs who compete for the best relative performance statistics. For these participants, a faster sale is best. This can lead to very disorderly markets and extreme volatility in times of stress. Thus, it is our view that splintering existing positions could leader to greater price volatility, and the likelihood that prices overshoot underlying fundamentals.

F. Conclusions:

In conclusion, we believe that index investors play an important role in commodity markets by providing needed liquidity that helps to fill the gap between the large number of commodity producers who wish to hedge their risk, and the more limited number of consumers who are willing to provide those hedges. They tend to be long-term investors who require real economic incentives for their investments. Thus, their interests are aligned with those of the market and the Subcommittee.

While we find the Subcommittee report to be detailed and focused on important issues, we disagree with some of its key conclusions. First, we do not think that passive index investors have been responsible for excessive price volatility in the Wheat market. We base this conclusion on analysis of other commodities markets without passive investments, or of with similar economic exposures. Restrictions on passive investments, in our view, would not likely have lessened price volatility in the recent past.

Second, we believe that the failure of Wheat futures contracts to converge with the cash market is driven by the design of the delivery mechanism of the futures contracts, and not by passive investments. This is an important issue that can and should be addressed. We suggest implementing similar changes to contracts as those recommended by the Subcommittee for the crude oil market – namely, expanding the number of delivery sites and generally easing the terms for delivery.

Finally, we think that implementing position limits, ceasing to allow position limit exemptions or eliminating index investing altogether will not reduce the volatility of prices in the Wheat market, but may have unintended consequences. For example, index investors based outside of the U.S. may move their activity offshore. Or the proposals that are currently being debated may simply splinter the positions held by index investors, in the process potentially increasing market volatility.

Attempts to regulate volatility have rarely – if ever – succeeded. Yet they often have unintended and significant consequences. Therefore, as we look ahead, we think the question we should focus on is “which types of market rules and oversights allow participants to best manage their risk at a reasonable cost?”