

The Impact of Variable Storage Rates on Liquidity of the Deferred Month CBOT Wheat Futures



July 22, 2010

Page 1 of 5

On November 30, 2009, the Commodity Futures Trading Commission (CFTC) approved Variable Storage Rates (VSR) in CBOT Wheat futures contracts beginning with the July 2010 contract expiration. VSR is a market-based determinant of maximum allowable storage charges for outstanding wheat shipping certificates. It triggers higher maximum allowable storage charges that allow wider spreads when spreads are near financial full carry and lower maximum allowable storage charges when spreads are narrow or inverted. More specifically, nearby spreads that average 80 percent of financial full carry or greater will trigger an increase in maximum allowable storage charges by 10/100s of one cent per bushel per day (approximately 3 cents per bushel per month) following the nearby delivery period. Conversely, nearby spreads that average 50 percent of financial full carry or less will trigger a decrease in maximum allowable storage charges by 10/100s of once cent per bushel per day following the nearby delivery period. Should nearby spreads average over 50 percent of financial full carry and less than 80 percent of financial full carry, the maximum allowable storage charges will remain the same as in the previous period. There is no upper limit for maximum allowable storage charges under VSR, but the minimum rate is 16.5/100s of one cent per bushel per day.

Since the announcement of VSR in November 2009, convergence between cash and futures prices at expiration has improved dramatically. While some of this improved performance can likely be attributed to VSR, it is also due to changing fundamentals in the soft red winter (SRW) wheat cash market, the variety of wheat delivered on the CBOT Wheat futures contract. In spite of this significant improvement in convergence, some market participants have expressed concern that the VSR mechanism is making it difficult to price deferred wheat spreads due to uncertainty over future storage rates and carrying charges. As a result, some market participants believe that wheat open interest and volume in deferred contract months has declined relative to nearby months. To confirm whether this is true or not, we looked at open interest and volume data for wheat futures and the ratio between deferred and nearby contract's open interest and volume. We find no change in the percentage of open interest or volume in the deferred months relative to that of the nearby months, rather, their relationship has closely followed historical patterns.

We define the nearby months as the first two contract months, with rollover on first position day (2 days before first delivery day). All other contract months are defined as deferred. We collected the historical wheat futures daily open interest and volume for each contract month over the past six years and calculated a ratio between the open interest and volume of deferred contracts to that of the nearby contracts as an indicator of the relationship between the two.

Chart 1 shows a six-year history of total (nearby + deferred) open interest (O.I.) and the ratio between deferred and nearby O.I. We use a 20-day moving average to smooth out volatility in the data. Currently, total open interest is approaching its historical maximum, which is above 500,000. Since the announcement of VSR, the deferred to nearby O.I. ratio has not declined and is repeating the pattern observed in previous years regarding both level and seasonality. Table 1 provides a more concrete view on top of visual inspection. The average deferred to nearby O.I. ratio since the VSR announcement is 58.9%, which is in line with or above the ratio in the same time period in the previous five years, except for one year (2007-08). Chart 2 shows, on a weekly basis, the deferred to nearby O.I. ratio for 2009 and 2010, relative to the upper and lower bounds and the average of the ratio over the previous 5 years (2004-2008). Since VSR was

The Impact of Variable Storage Rates on Liquidity of the Deferred Month CBOT Wheat Futures



July 22, 2010
Page 2 of 5

announced in November 2009, the 2009 ratio has been above the 5-year average. The 2010 ratio has also been above the 5-year average and sometimes even above the 5-year maximum. Conducting the same analysis for the deferred to nearby volume ratio, Chart 3 shows the 2009 ratio since VSR was announced, and the 2010 ratio has stayed close to its 5-year average.

These results suggest that any concern that VSR may hurt the liquidity of deferred month CBOT Wheat futures is unwarranted based on data available to date. Since the VSR announcement in November 2009, open interest in deferred months relative to that in nearby months has not changed significantly and has not deviated from seasonal historical patterns.

Another interesting but related issue is whether different categories of traders have behaved differently since the VSR implementation was announced. To answer this question, we examine data from a weekly report published by the Commodity Futures Trading Commission (CFTC) called the Supplemental Commodity Index Trader Report (CIT). The CIT report provides a breakdown of open interest in futures and options markets by trader category. Based on the percentage of O.I. held by each trader category, Chart 4 shows there has been a slight downward trend in index trader's share of O.I. since VSR was announced. The positions held by commercial traders dropped following the VSR announcement but quickly recovered to pre-VSR levels, which may suggest that commercial traders are getting more comfortable with VSR. Non-commercial traders seem the most active category in taking additional positions since the VSR announcement. Table 2 shows the change of O.I. by trader category since the VSR announcement and compared to the previous year. One thing worth noting is that commercial long open interest has jumped by 131% since the VSR announcement, which could be related to the improvement in convergence.

Overall, open interest and volume data to date do not suggest any issues with back-month liquidity. In fact, evidence so far indicates a better performing contract, which has attracted significant commercial activity and near record open interest all within historical trading patterns.

The Impact of Variable Storage Rates on Liquidity of the Deferred Month CBOT Wheat Futures

July 22, 2010

Page 3 of 5

Chart 1. Historical 20-Day Moving Average Total Open Interest and Deferred/Nearby O.I. Ratio.

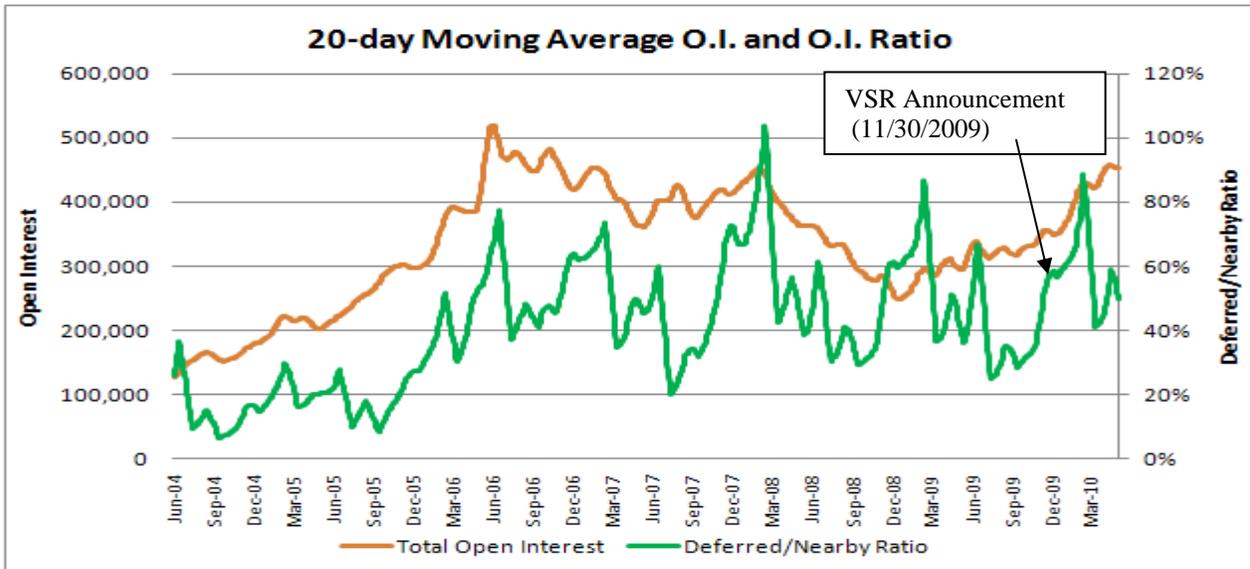
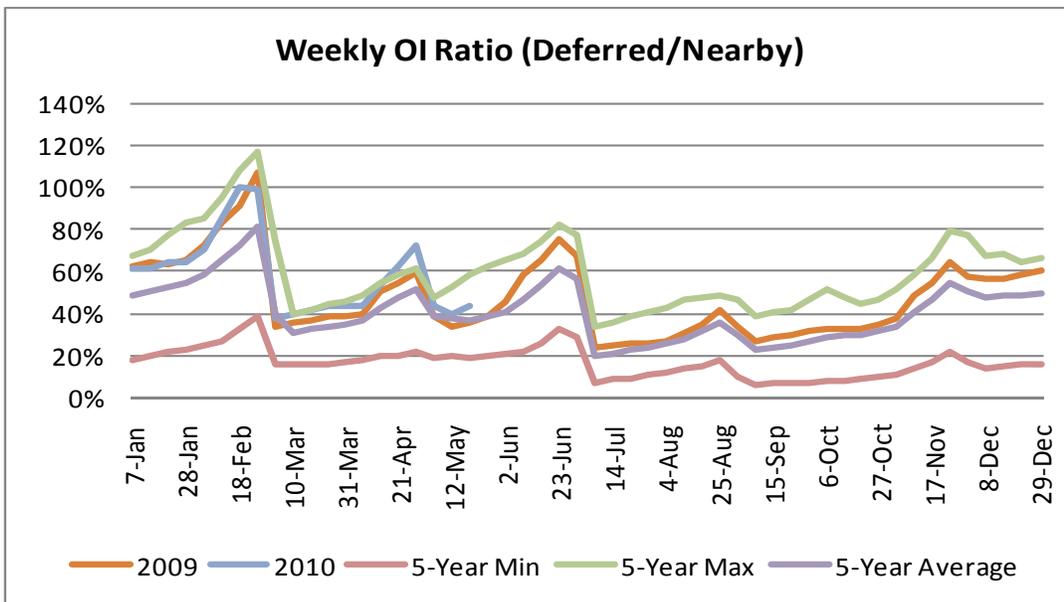


Chart 2. Weekly Deferred to Nearby O.I. Ratio.



The Impact of Variable Storage Rates on Liquidity of the Deferred Month CBOT Wheat Futures

July 22, 2010

Page 4 of 5

Chart 3. Weekly Deferred to Nearby Volume Ratio.

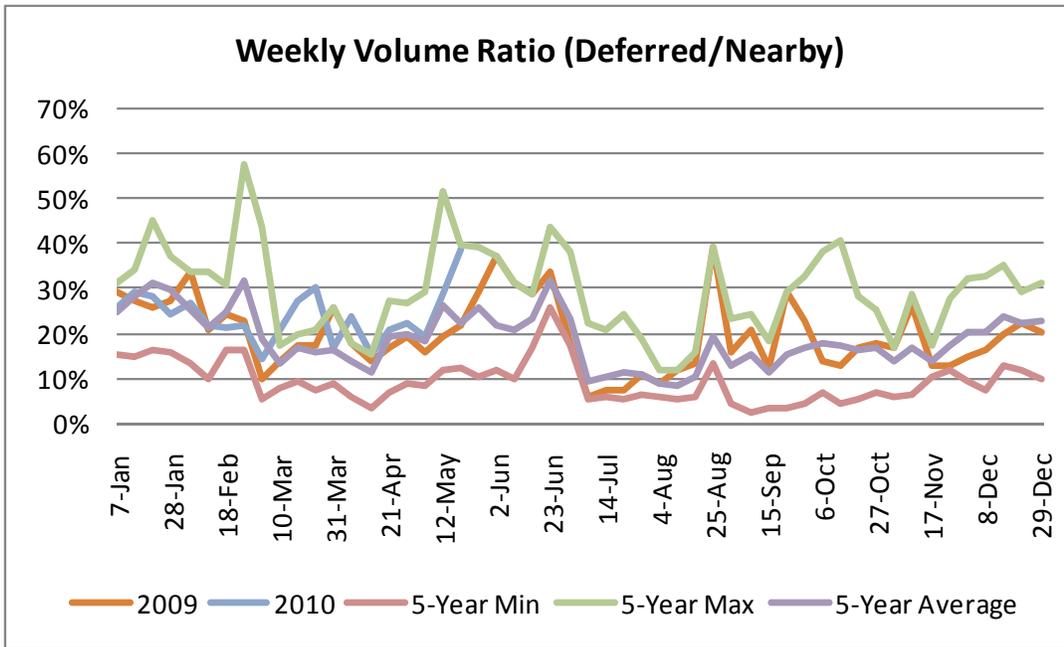
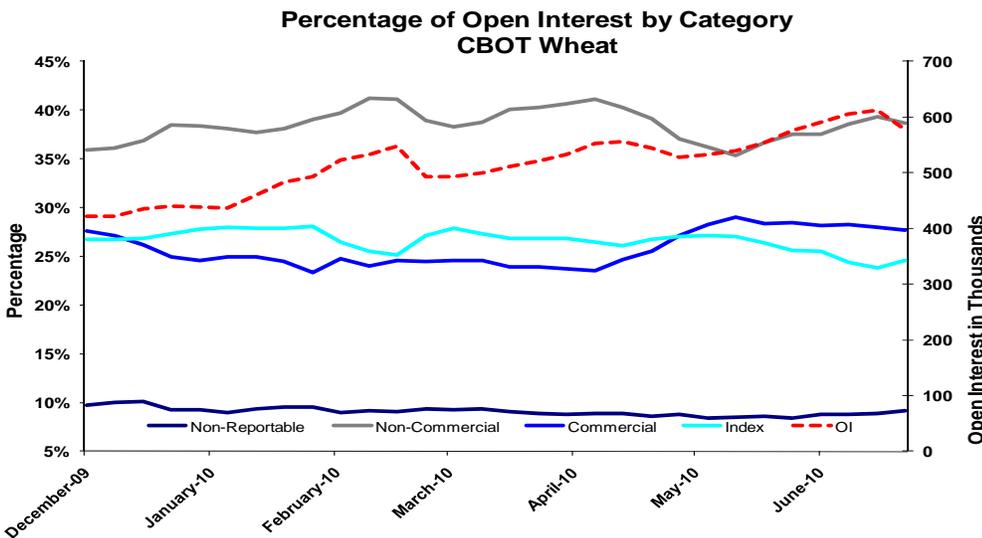


Chart 4. Percentage of O.I. by Trader Category Since VSR Announcement. (O.I. is the combination of futures and delta adjusted options)



The Impact of Variable Storage Rates on Liquidity of the Deferred Month CBOT Wheat Futures



July 22, 2010
Page 5 of 5

Table 1. Summary Statistics for Ratio between Deferred O.I. to Nearby O.I.

| Time Periods | Min | Max | Median | Mean |
|---|-------|--------|--------|-------|
| 5/2004-5/2010 (Entire Observation Period) | 6.4% | 103.7% | 40.8% | 41.1% |
| 12/2009-5/2010 (Since VSR Announcement) | 41.0% | 88.6% | 58.0% | 58.9% |
| 12/2008-5/2009 | 36.2% | 86.7% | 60.1% | 56.4% |
| 12/2007-5/2008 | 38.8% | 103.7% | 67.0% | 65.3% |
| 12/2006-5/2007 | 34.6% | 73.7% | 60.7% | 55.1% |
| 12/2005-5/2006 | 25.3% | 57.3% | 37.1% | 38.9% |
| 12/2004-5/2005 | 14.9% | 29.8% | 19.3% | 19.9% |

Table 2. Change of Open Interest by Trader Category.

| Open Interest* | 23-Jun-09 | 1-Dec-09 | 22-Jun-10 | % Δ VSR | % Δ YoY |
|------------------|-----------|----------|-----------|---------|---------|
| Total | 446,062 | 421,702 | 577,675 | 37% | 30% |
| Commercial Short | 161,354 | 192,348 | 226,417 | 18% | 40% |
| Commercial Long | 59,332 | 40,421 | 93,232 | 131% | 57% |
| Index Long | 169,411 | 204,142 | 251,889 | 23% | 49% |

*Open interest is the combination of futures and delta adjusted options.

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