

## MGEX Spring Wheat

The Minneapolis Grain Exchange (MGEX) has been the principal market for hard red spring (HRS) wheat since 1881, offering futures and options contracts based on this unique commodity. Hard red spring wheat dominates North American wheat production and trade which makes it one of the most important crops on the continent. Hard red spring wheat's unique growing season and quality characteristics generate price movement that is often quite different from other crops and alternative wheat markets, adding an element of diversification to nearly all trading portfolios.

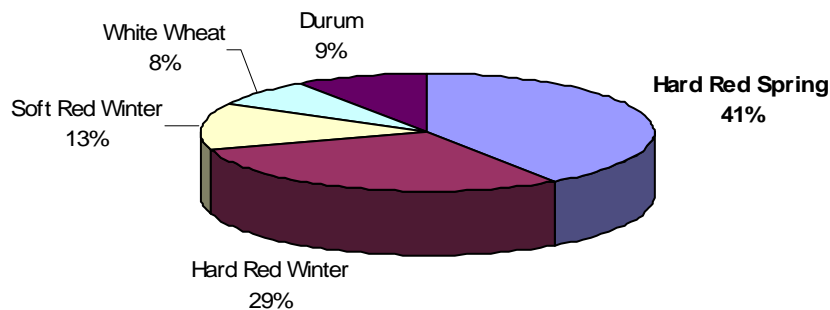
### HRS Wheat Production

Hard red spring wheat is grown in the U.S. Northern Plains (e.g., North Dakota) and the Canadian prairies (e.g., Saskatchewan). As its name indicates, HRS wheat is planted in the spring and harvested in late summer with the September contract representing new crop delivery. In contrast, winter wheat is fall-planted and spring-harvested, with a July new crop contract.

Hard red spring wheat is premium milling quality wheat. The commercial standard HRS wheat specification is 13%-14% protein; whereas the hard red winter (HRW) is often 11% protein. Generally speaking, the higher the protein content, the better the baking quality of the flour.

North American wheat production is dominated by HRS varieties. Figure 1 and Table 1 present U.S. and Canadian wheat production by class.

**Figure 1. U.S. and Canadian Wheat Production by Class, 2009.**



Source: United States Department of Agriculture, Statistics Canada.

**Table 1. U.S. and Canadian Wheat Production, 2009.**

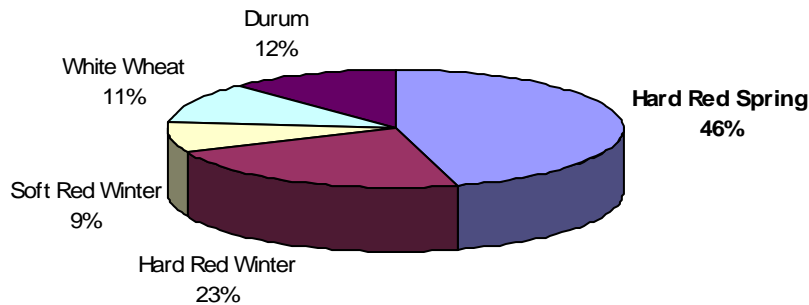
Wheat Class	Production (millions of bushels)			Quantity Percent	US \$/bu. Farm Price	\$ Millions Value	Value Percent
	U.S.	Canada	Total				
Hard Red Spring	551	717	1268	41%	6.09	7,722	44%
Hard Red Winter	919	0	919	29%	5.34	4,907	28%
Soft Red Winter	404	0	404	13%	4.37	1,765	10%
White Wheat	237	0	237	8%	4.97	1,178	7%
Durum	110	186	296	9%	6.77	2,004	11%
<b>Total</b>	<b>2221</b>	<b>903</b>	<b>3124</b>	<b>100%</b>		<b>17,577</b>	<b>100%</b>

\*Based on October, 2009 USDA and Stats Canada production estimates.

At 41% of total production, HRS is the largest wheat crop in North America. Likewise, when considering the price premium for HRS wheat, it is 44% of the market in terms of value.

Because of the world demand for premium milling wheat, HRS wheat tends to dominate North American exports and trade. Figure 2 and Table 2 show the relative proportion of U.S. and Canadian exports for each class of wheat. Forty-six percent of U.S. and Canadian wheat exports are HRS, while the next closest class of wheat, HRW, comprises 23% of the exports.

**Figure 2. U.S. and Canadian Wheat Exports by Class, 2009.**



Source: United States Department of Agriculture, Statistics Canada.

**Table 2. U.S. and Canadian Wheat Exports, 2009.**

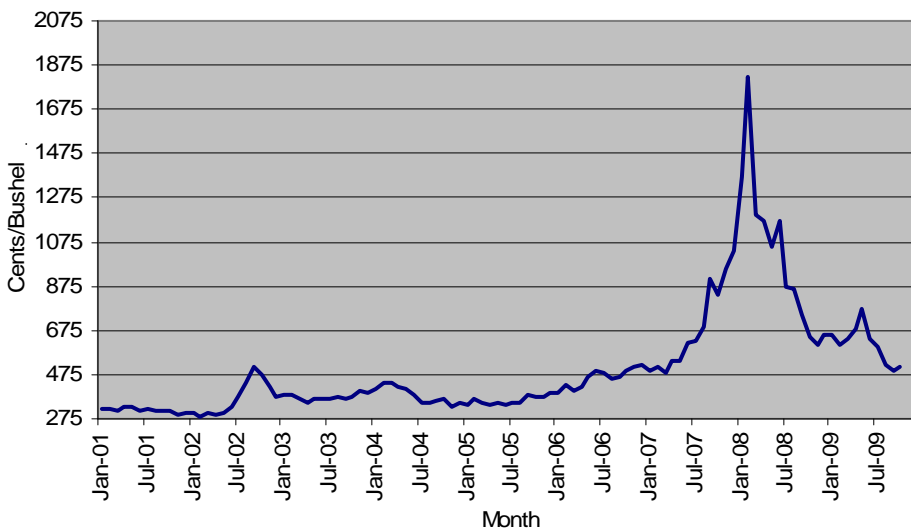
Wheat Class	Exports (millions of bushels)			Quantity Percent
	U.S.	Canada	Total	
Hard Red Spring	215	477	692	46%
Hard Red Winter	345	0	345	23%
Soft Red Winter	130	0	130	9%
White Wheat	170	0	170	11%
Durum	40	143	183	12%
<b>Total</b>	<b>900</b>	<b>620</b>	<b>1520</b>	<b>100%</b>

Clearly, HRS wheat is the most important wheat crop in North America in terms of production, value, and trade. Because of this, HRS wheat prices are important to the overall wheat industry.

**MGEX Spring Wheat Prices and Trade**

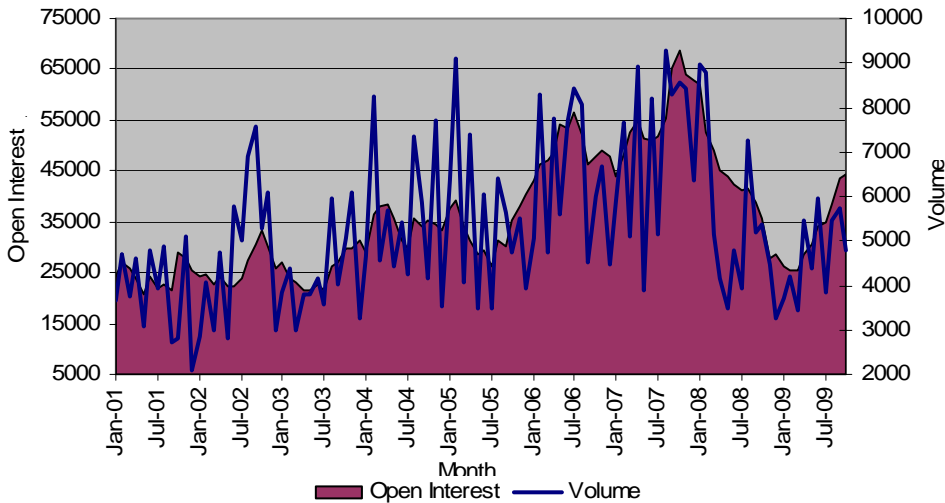
Hard red spring wheat prices are susceptible to numerous supply and demand factors. Demand shocks often arise from an active export market, while summer weather in the Northern plains and Canadian prairies can create volatile swings in supply. Additionally, because of the milling quality of HRS wheat, relative supplies of high quality wheat can drive price trends even when the overall wheat market is quiet. Collectively, these factors result in unique price trends in the spring wheat futures market. The price action over the last nine years is shown in Figure 3.

**Figure 3. Nearby Minneapolis HRS Wheat Futures, 2001-2009.**



Due in part to its' unique price action and the importance of HRS wheat in the international wheat markets, MGEX HRS wheat futures have experienced consistently good trade volume. While open interest peaked with the 2008 price surge, a recent increase has pushed open interest back to 45,000 contracts with average daily volume of nearly 6,500 contracts.

**Figure 4. MGEX Wheat Futures Average Daily Volume and Open Interest, 2001-2009.**



**Spring Wheat and Trading Portfolios**

The MGEX HRS futures contract is one of three active wheat futures traded in the U.S. HRW wheat is traded at the Kansas City Board of Trade (KCBT) and soft red winter (SRW) wheat is traded on the Chicago Mercantile Exchange (CME). From a portfolio perspective, it is important to understand how these three wheat contracts relate to each other and to other commodity future contracts.

The first step is to understand the relative price volatility of each market. Table 3 shows the simple summary statistics for the monthly nearby futures returns for a number of grain markets. From Table 3, it is clear that HRS wheat at the MGEX has a return volatility very comparable to the other markets.

**Table 3. Summary Statistics of Monthly Returns, January 1995 – October, 2009.**

	MGEX Wheat	CME Wheat	KCBT Wheat	CME Corn	CME Soybeans	CME Oats
St. Deviation	7.8%	7.8%	7.9%	7.6%	7.6%	9.0%
Maximum	28.5%	25.3%	25.1%	20.0%	17.9%	30.0%
Minimum	-30.5%	-21.7%	-23.7%	-22.8%	-26.6%	-31.1%

In building a trading portfolio, it is important to consider the price correlation among markets. Generally, markets which have a low correlation with other markets can be added to a trader’s portfolio and actually decrease overall portfolio variability. The correlation among some popular agricultural grain and oilseed contracts is shown in Table 4.

**Table 4. Correlation of Monthly Returns, January 1995 – October, 2009.**

	MGEX Wheat	CME Wheat	KCBT Wheat	CME Corn	CME Soybeans	CME Oats
MGEX Wheat	1.00					
CME Wheat	0.87	1.00				
KCBT Wheat	0.81	0.93	1.00			
CME Corn	0.46	0.50	0.53	1.00		
CME Soybeans	0.48	0.45	0.46	0.66	1.00	
CME Oats	0.39	0.35	0.37	0.50	0.44	1.00

The three wheat contracts generally have a low correlation with the traditional CME corn and soybean contracts. This suggests that a trader who is already using CME corn and soybeans should consider adding a wheat contract to their portfolio. Of the three wheat contracts, MGEX wheat has the lowest correlation with corn. So, if a trader is already using either CME or KCBT wheat, they may reduce their overall portfolio variance by adding MGEX spring wheat into the market mix.

### **Return to Roll**

Commodity index funds maintaining perpetually long positions earn a considerable portion of their return in the “roll.” The roll is the selling of the nearby or maturing contract and the simultaneous purchase of the next or deferred contract. For long-only commodity funds, the roll return is generated by purchasing the deferred contract at a lower price than the expiring contract. Thus, they benefit from markets that tend to trade at an inverse (nearby contracts higher than the deferred contract), and roll returns are lower for markets that maintain a large carry structure (nearby contracts lower than the deferred contract).

An index fund that continually rolls long positions forward should be concerned with the market structure at the time of the roll, with a preference for markets that tend to display a small carry or even an inverse. The table below shows the typical “roll” in percent for the three primary wheat markets and corn from January, 1995 to October, 2009.

**Table 5. Return to Roll, January, 1995 – October, 2009**

Market	Return to Roll
MGEX Wheat	0.45%
KCBT Wheat	-0.77%
CME Wheat	-2.82%
CME Corn	-2.45%
CME Soybeans	0.19%
CME Oats	-0.98%

The return to the roll is simply measured as the percent inverse between the spot and next futures contract at the time of the roll. For example, if the March MGEX wheat contract is trading at \$3.60 and the May contract is at \$3.65, then the return to the roll is -1.4% because the market is in a carry. If the market is inverted with the March contract is at \$3.80 and the May contract is \$3.75, then the return to the roll is a positive 1.3%.

All else equal, a long only position will produce the best return in a market with the smallest carry structure. Among wheat contracts, the Minneapolis contract has provided one of the best returns to rolling positions. Because of the tight delivery specifications for spring wheat, the MGEX spring wheat futures tend to trade a smaller carry structure which enhances the return to long-only positions.

### **Conclusions**

HRS wheat, traded on the MGEX, is the dominant class of wheat in North America in terms of quantity, value, and trade. MGEX spring wheat futures provide access to the pricing of HRS wheat for the industry. Of the existing wheat contracts, the MGEX wheat futures has one of the lowest correlations with the traditional corn and soybean futures, making MGEX futures the optimal choice for lowering portfolio volatility and an attractive alternative for money managers. Moreover, the tendency for MGEX HRS wheat futures to trade at with a relatively small carry structure can enhance the return to “rolling” for long-only index funds.