

Washington Grain Commission

Wheat and Barley Research Annual Progress Reports and Final Reports

Project: 3557

Progress Report Year: 1 of 1

Title: Development of Basis Forecasting Strategies and Tools for Washington Wheat Producers

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Executive summary: A significant amount of research has been devoted to identifying marketing strategies for managing volatile prices at the farm level. However, before a producer can take full advantage of various risk management strategies (including forward cash contracts, futures hedging, and options on futures contracts) he/she must be able to localize publicly reported futures prices. This involves converting a reported price for some future delivery date into a price that could be received on his or her farm in the future.

This has become more challenging as wheat prices the last several years have experienced a level of volatility unparalleled in previous years. In addition, basis levels have been more volatile than the actual prices were prior to 2008. This has made wheat marketing more difficult – a volatile and unpredictable basis makes it hard to determine what the local cash price is likely to be for a later delivery date even though the futures price for later delivery can be observed. This, in turn, makes it difficult to determine when a cash forward contract or other cash pricing opportunity is offering an attractive price for later delivery.

This is an issue with all classes of wheat produced in the Pacific Northwest (PNW), but is particularly evident in white wheat markets. This is partly because there is no white wheat futures contract. The soft red winter wheat futures contract traded in Chicago is often used to form cash price expectations for white wheat at later delivery dates, but this price relationship has become much less predictable in recent years.

The primary goal of the project was to improve the market information available to producers and merchandisers of PNW wheat. This included developing improved strategies for basis expectations, and providing continuous updates of basis forecasts across several Washington markets. This research focused on white wheat, but plans are to expand the forecast methodology web site functionality developed to other wheat varieties.

Objective 1. Develop a system of statistical models that identify the drivers of basis volatility.

This objective has been completed. A series of three different type forecasting models were developed and tested for estimating local basis levels. The models were initially developed based on two Eastern Washington locations, but are now being applied across a couple of dozen different locations. The models include a fundamental statistical model. This model attempts to account for supply/demand conditions across markets, and is similar to the type models fundamental traders' use in trading commodity markets. This model includes variables measuring economic relationships and includes local versus national wheat production, transport costs to Portland from the local market, exchange rates between the U.S. and major buyers of U.S. wheat, perceptions of crop progress, etc., as well as various measures of market emotion and momentum. The second model is a time series type model similar to those used by technical traders of commodity markets. They explain current basis behavior as a function of historical basis relationships, although the weighting and lag

structures of the models are more complicated than just looking at past trends. The third model is a hybrid of the fundamental and technical models. All models have been subjected to peer review for presentation at a two professional conferences.

Objective 2. Develop a reduced form of the various identified models that can be used to forecast basis levels for up to 11 months forward. I have developed and launched a single basis forecasting model based on the combined information of the three model types described above. This is the model that generates the actual basis forecasts. The model forecasts are available from <http://smallgrains.wsu.edu/marketing-and-economics/market-prices-graphing-tool/>.

Objective 3. Develop a web based system that will allow producers and merchandisers to access both historical basis levels and forecasts for up to 11 months forward.

The web site has been constructed and provides regular updates to the basis forecasts. It is currently being altered to present forecast errors over previous years. The web site is a page choice under the Wheat and Small Grains Extension wheat website developed by the dry-land cropping extension team. The website receives live data feeds of local cash prices and futures prices daily, and this data is used to update the basis forecasts on a daily basis.

Impact: Completion of this project allows both producers and merchandisers of PNW wheat to make more informed decisions relative to forward pricing wheat. Further, improved basis forecasts allow for more informed decisions relative to wheat storage. The more precise the basis forecast, the easier it is to determine whether it makes sense to store wheat un-priced for later delivery, store wheat with a guaranteed price, or make immediate sales and not continue to store wheat.

