

**Futures and Options Markets,
Basis, and the Timing
of Grain Sales in Montana**

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The performance of the grain transportation industry, historically low real grain prices, and decreasing government support for grain prices have renewed interest in local grain prices and shipping costs. An understanding of the relationship between local cash prices and futures prices is an important part of minimizing the price risk associated with growing and merchandising grain. The ability to recognize the seasonal patterns between these prices offers improved profit potential for marketing grain.

A Montana producer's decision of when and how to market his/her crop can have a great impact on net profit. Farm managers can use cash sales at or after harvest, forward contracting with a local grain elevator, or hedging with the use of futures and options contracts. To best select between these tools, the producer must be able to interpret different price quotes in order to determine the equivalence in terms of time, place, and quality. Being able to compare the different pricing alternatives at any given time allows the producer to decide which method provides the greatest return.

The local basis is the difference between the local cash price for hard red spring wheat and the current price for the relevant futures contract (usually the Minneapolis contract). By understanding the local basis, the producer can compare futures prices with cash and forward contract price quotes. There are large seasonal patterns in the basis for Montana spring wheat. These seasonal patterns primarily reflect changes in the demands placed on the transportation and handling system.

The local cash value of spring wheat is effectively determined by the basis (which reflects freight and quality adjustments) and wheat futures prices. Futures exchanges provide a standardized price for a specific location, delivery time, and quality. The futures contract price gives buyers and sellers a well-known price based on the standards of the futures contract. Grain buyers and sellers can then use this standardized futures price as a base, adding quality premiums and subtracting transportation costs to price different grades of hard red spring at various locations.

Besides qualitative differences, the wheat basis in Montana reflects arbitrage of wheat between different locations. The Pacific Northwest export market will normally provide the highest values for Montana spring wheat, so Montana merchandisers tend to price from Portland quotes. However, this Portland price for hard red spring wheat will reflect the Minneapolis Grain Exchange futures prices plus a transportation premium plus/minus any

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quality adjustments; prices will adjust to reflect all transportation costs and quality differences. This adjustment allows Northern Plains producers to use these centralized futures markets as pricing instruments, even though their wheat may move to other locations.

The structure of freight pricing is critical for the movement of grain to Pacific Northwest ports and the prices received by Montana farmers. Freight rates from these Montana locations to Portland have been stable in real terms (adjusted for inflation) over the past ten years, whereas other components of the basis have shown considerable seasonal variability. The problem with Montana's freight rate stability over time is that other spring wheat growing areas with more effective grain transportation options have seen declining real freight prices.

Understanding historical basis requires knowledge of the factors that influence the basis. This knowledge can be as important as knowing the cost of producing spring wheat. We provide useful Web sites and other information sources to allow the reader to take the next step toward understanding and utilizing their local basis.



Contents

The Cash to Futures Price Basis	1
Futures Contracts, the Basis, and Local Cash Prices	2
Basis Levels and Transportation Costs	2
Comparing Freight Rates	4
The Basis and Local Cash Prices	4
Relevant Futures Contracts	6
Underlying Market Fundamentals	6
Basis over Time	7
Use of Basis by the Producer	9
Example of Basis Contract	10
How the Basis Affects Returns to Marketing Strategies	10
Where to Go from Here?	12
Endnotes	13
References	14

Figures

Figure 1. Spring Wheat Basis, 1989–1998	3
Figure 2. Cost of Shipping Spring Wheat (Real)	4
Figure 3. Monthly Spring Wheat Basis, 1989–1998	8
Figure 4. Spring Wheat Basis, Selected Years	9

Table

Table 1. Price Scenarios for August 24 of the Marketing Year	11
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Northern Plains grain producers have always faced long distances to markets and have been effectively tied to a few shippers. The performance of the grain transportation industry, historically low real grain prices, and decreasing government support for grain prices have renewed interest in local grain prices and shipping costs. An understanding of the relationship between local cash prices and futures prices is an important part of minimizing the price risk associated with growing and merchandising grain. The ability to recognize the seasonal patterns of these prices offers improved profit potential for marketing grain.

A Montana producer's decision of when and how to market his/her crop can have a great impact on net profit. Farm managers face a number of different marketing alternatives that are part of an increasingly sophisticated marketing system. Farm managers can use cash sales at or after harvest, forward contracting with a local grain elevator, or hedging with the use of futures and options contracts. These tools can also be combined in various ways with government storage loans and loan deficiency payments. To best select between these tools, the producer must be able to interpret different price quotes in order to determine the equivalence in terms of time, place, and quality. Being able to compare the different pricing alternatives at any given time allows the producer to decide which method provides the greatest return. We discuss these issues using hard red spring wheat (HRS). The same factors affecting spring wheat basis apply to other grains such as winter wheat and barley.

The performance of the grain transportation industry, historically low real grain prices, and decreasing government support for grain prices have renewed interest in local grain prices and shipping costs.

The Cash to Futures Price Basis

A producer's local spring wheat basis is defined as the difference between the per bushel cash price of spring wheat at the local elevator and the current futures price quote at the Minneapolis Grain Exchange.¹ This basis is the difference between a particular cash market and a specific futures contract price, the difference reflecting transportation costs, elevator charges, storage costs over time, and quality differences. The basis is defined as:

$$\text{Local Basis to Futures} = \text{Cash Price (local elevator)} - \text{Futures Quote (Minneapolis HRS)}.$$

Alternatively,

$$\text{Cash Price} = \text{Futures Price} + \text{Local Basis to Futures}.$$

Typically, local basis to futures is negative for Montana producers when comparing wheat of the same quality. However, because of the high protein

content and quality of Montana HRS and Montana's relative proximity to Pacific Northwest (PNW) ports, Montana HRS often commands a premium over the Minneapolis futures price, giving this wheat a positive basis.

By understanding the local basis, the producer can compare futures prices with cash and forward contract price quotes. There are large seasonal patterns in the basis for Montana spring wheat. These seasonal patterns primarily reflect changes in the demands placed on the transportation and handling system. Local cash prices generally trade at a discount to futures in the fall when large amounts of grain enter the system. Local cash prices generally trade at smaller discounts in the winter and spring when smaller amounts of grain enter the system.

Futures Contracts, the Basis, and Local Cash Prices

The local cash value of spring wheat is effectively determined by the basis (which reflects freight and quality adjustments) and wheat futures prices. Futures exchanges provide a standardized price for a specific location, delivery time, and quality. Deliverable grades for the Minneapolis Grain Exchange's wheat futures contract are a No. 2 or better Northern Spring Wheat with a protein content of 13.5 percent or higher, with 13 percent protein deliverable at a discount and No. 1 at a premium. Delivery points are elevators located in Minneapolis/St. Paul, Red Wing and Duluth/Superior. Pre-set freight spreads are applied when delivery is made to Red Wing and Duluth/Superior. By allowing physical grain to be delivered against contract positions, futures markets closely correspond with cash markets at diverse locations. Most commercial grain merchandisers do not actually deliver or accept delivery of grain against futures contracts. Instead, they usually buy and sell futures contracts with offset positions in mind.

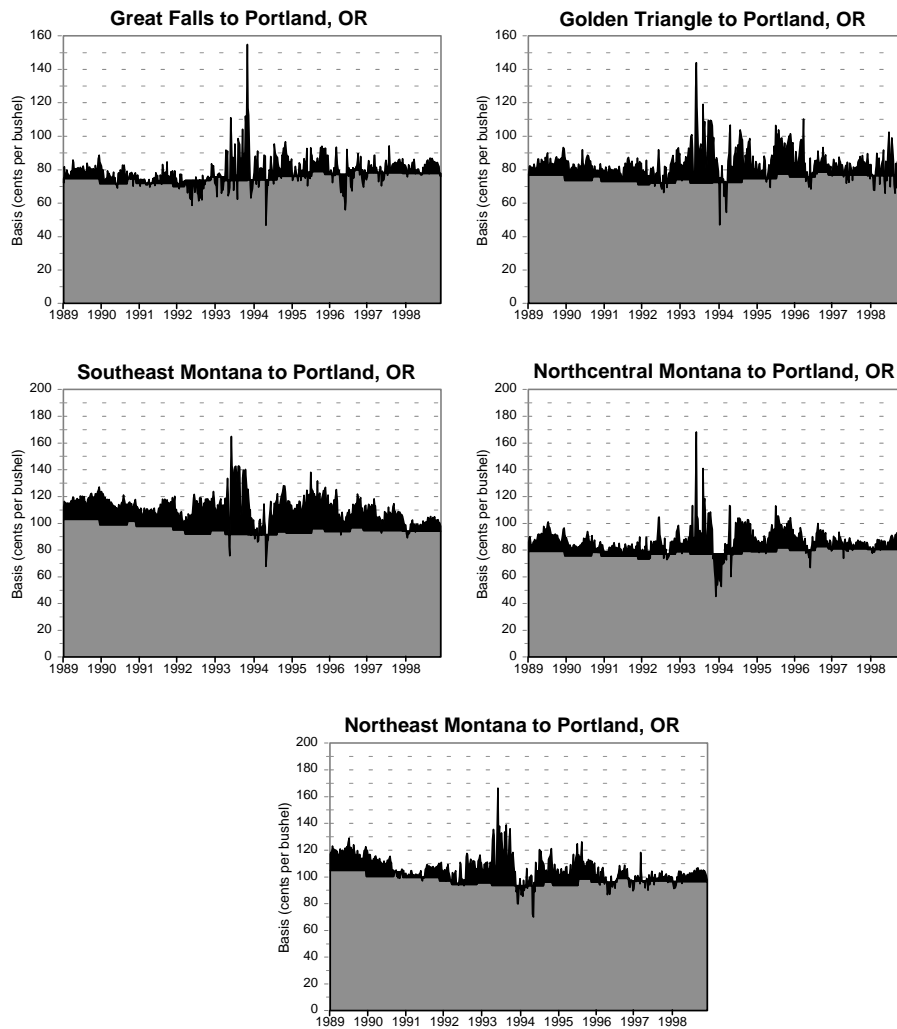
The futures contract price gives buyers and sellers a well-known price based on the standards of the futures contract. Grain buyers and sellers can then use this standardized futures price as a base, adding quality premiums and subtracting transportation costs to price different grades of hard red spring at various locations.

Basis Levels and Transportation Costs

Besides qualitative differences, the wheat basis in Montana reflects arbitrage of wheat between different locations. Even though Minneapolis futures quotes are used for basis calculation, often Montana spring wheat will not move east to Minneapolis. The PNW export market will normally provide the highest values for Montana spring wheat, so Montana merchandisers tend to price from Portland quotes and ship grain there (in an average year approximately 60 percent of Montana's HRS crop is expected to be exported through PNW ports). However, this Portland price for hard red spring wheat will reflect the Minneapolis Grain Exchange futures prices plus a transportation premium plus/minus any quality adjustments; prices will adjust to reflect all transportation costs and quality differences. This adjustment allows Northern Plains producers to use these centralized futures markets as pricing instruments, even though their wheat may move to other locations.

By understanding the local basis, the producer can compare futures prices with cash and forward contract price quotes. There are large seasonal patterns in the basis for Montana spring wheat.

Figure 1. Spring Wheat Basis, 1989–1998

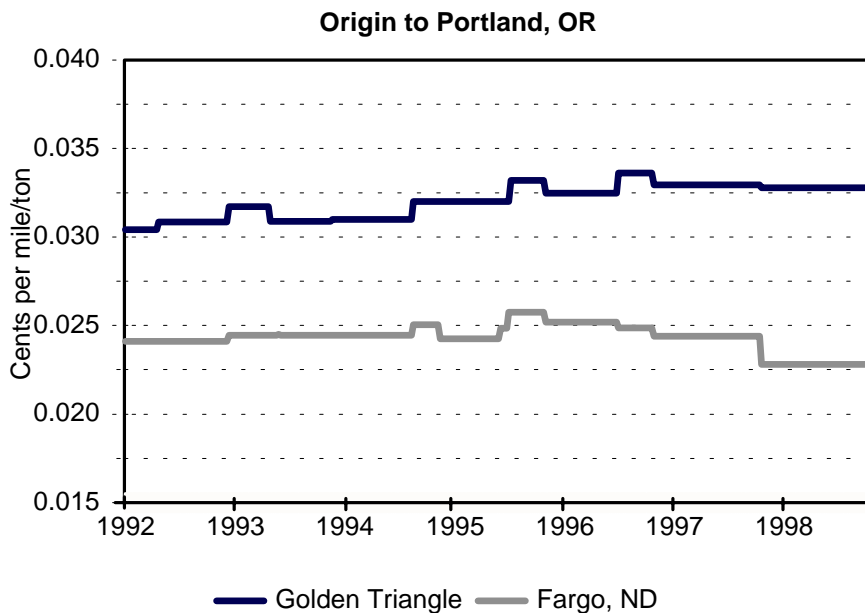


Source: USDA, compiled by Montana Wheat and Barley committee. Freight provided by Burlington Northern–Santa Fe Railroad.

The structure of freight pricing is critical for the movement of grain to PNW ports and the prices received by Montana farmers.

The structure of freight pricing is critical for the movement of grain to PNW ports and the prices received by Montana farmers. The difference between the spring wheat cash price in Portland, Oregon, and the price for wheat in particular Montana locations is frequently called the export basis. This is illustrated for 1989–1998 prices (1992 dollars) in Figure 1. These charts isolate two components of the local basis: freight costs to the destination and elevator and handling fees. Freight rates from these Montana locations to Portland have been stable in real terms (adjusted for inflation) over the past ten years, whereas other components of the basis have shown considerable seasonal variability.

Figure 2. Cost of Shipping Spring Wheat (Real)



Source: USDA, compiled by Montana Wheat and Barley committee. Freight provided by Burlington Northern–Santa Fe Railroad.

Comparing Freight Rates

The problem with Montana’s freight rate stability over time is that other spring wheat growing areas with more effective grain transportation options have seen declining real freight prices (see Fulton and Gray 1998). Figure 2 shows the per bushel per mile price disparity between Fargo, North Dakota, and the Golden Triangle² area of Montana. The farther west the North Dakota location is from Fargo, the closer the rail rates are to those from Montana locations. The most likely cause for this disparity is that rail rates match competition from the trucking industry in Fargo. Trucks can effectively compete with rail for the relatively short distances for grain shipped from Fargo to Minneapolis.³ The eastern portion of North Dakota is also served by the Canadian Pacific Railroad, which may cause the Burlington Northern–Santa Fe Railroad to price more competitively.⁴ This freight cost differential makes it relatively more expensive, considering a per mile price, to deliver Montana wheat to various end-use locations. As a result, grain buyers in Montana pay farmers less than they would pay if Montana freight rates had also declined.

The problem with Montana’s freight rate stability over time is that other spring wheat growing areas with more effective grain transportation options have seen declining real freight prices.

The Basis and Local Cash Prices

For a producer, the basis and the futures prices determine the cash price. An understanding of how changes in the basis and in the futures price can affect the net price received per bushel is critical in evaluating marketing strategies. To illustrate this cash/basis relationship, the following example shows how the local basis to futures affects the price for No. 1 hard red spring wheat, 13 percent protein, FOB⁵ Havre, Montana for a specific day in April.

Cash Price	= \$2.90	per bushel, FOB Havre (No. 1 HRS, 13 percent protein)
Futures Quote	= <u>3.15</u>	Minneapolis May HRS contract (No. 2, 13.5 percent protein)
Local Basis to Futures	= <u>-.25</u>	

The basis in this example includes the following components:

- (1) The cash wheat price in Havre, including elevator handling fees,
- (2) Freight between Minneapolis and Havre,
- (3) Futures contract quote from the Minneapolis Grain Exchange, and
- (4) Grade and protein adjustments.

This example shows the pricing process used by a local elevator. If the elevator (1) can lock in a futures contract price in Minneapolis of \$3.15 plus a premium for No. 1, 13 percent protein of \$.20 over the price for No. 2, 13.5 percent protein (futures contract specifications), (2) minus the \$.45 transportation and handling costs from Havre to Minneapolis, then (3) the elevator can pay up to \$2.90 for No. 1, 13 percent HRS in Havre.⁶ This futures-based calculation is used both for current pricing and, with adjustments for storage costs, for the pricing of grain delivered months from now. The same calculation is used to price wheat with higher protein levels, where the \$.20 premium for No. 1, 13 percent protein increases to a \$.30 premium for No. 1, 14 percent protein. Still larger premiums are given for the higher protein levels often grown in Montana's spring wheat areas and when the demand for wheat is relatively high in the Pacific Rim markets.

Consider in more detail a \$2.70 per bushel cash bid given by the local elevator in Havre for a No. 2, 13.5 percent protein spring wheat. This bid is calculated by the following:

+ \$3.15	Minneapolis futures quote for No. 2, 13.5 percent protein
- .37	Transportation between Havre and Minneapolis
<u>- .08</u>	Handling fee taken by elevator
\$2.70	Cash bid

The same elevator is also bidding \$2.90 per bushel for No. 1, 13 percent protein. The calculation is as follows:

+ \$3.15	Minneapolis futures quote for No. 2, 13.5 percent protein
+ .20	Premium for No. 1 grade factor and higher protein
- .37	Transportation between Havre and Minneapolis
<u>- .08</u>	Handling fee taken by elevator
\$2.90	Cash bid

In addition, if shipping to Portland instead of Minneapolis gives the elevator a higher net price, the elevator's bid to farmers will reflect that locational premium while still reflecting the futures price. In the example above, if No. 1, 13 percent protein HRS in Portland commanded an \$.85 premium over the Minneapolis futures price and transportation and handling charges FOB Havre to Portland were \$.90, an elevator in Havre

could offer to farmers up to \$3.10 for No. 1, 13 percent protein HRS. The calculation for delivery to Portland is as follows:

+ \$3.15	Minneapolis futures quote for No. 2, 13.5 percent protein
+ .85	Premium for No. 1, 13 percent protein delivered to Portland
- .90	Transportation and handling between Havre and Portland
\$3.10	Cash bid

Additionally, a \$.10 premium for 14 percent protein over 13 percent at Portland would result in a \$3.20 maximum bid for No. 1, 14 percent at this Havre elevator. These examples show how an elevator manager uses information about prices in different locations, knowledge of transportation costs, and premiums or discounts in order to develop an offer to producers. These examples also illustrate that producers can use the same information to assess elevators' cash bids.

Relevant Futures Contracts

Wheat futures contracts are offered for various months of the year (March, May, July, September, and December). Each month reflects the seasonality of harvest, marketing, and consumption of grain throughout the marketing year. There are three U.S. futures exchanges that trade wheat contracts. The Minneapolis Grain Exchange is a hard red spring contract. The Chicago Board of Trade is the largest futures market and trades soft red wheat contracts, whereas the Kansas City Board of Trade trades hard red winter wheat contracts. Although the contract prices for all three of these exchanges tend to move together, some futures markets regularly command premiums over the others (due to quality differences). The highest prices are usually in Minneapolis, followed by Kansas City and then Chicago.

Underlying Market Fundamentals

Because the local cash price reflects both futures prices and the basis, factors affecting the local prices can be broken down into those attributable to the national and international markets. In addition, those attributable to the local market and that relate to quality and transportation are important. The key factors for spring wheat include the following:

- (1) National and international wheat supply and demand (includes all classes of wheat),
- (2) Quality of the hard red spring wheat crop locally and regionally and the quality for all types of wheat nationally and internationally,
- (3) Transportation costs (local, regional, national, and international), which include freight car availability and factors that influence present and future freight costs,
- (4) Available storage, primarily at the local and regional levels.

There are many factors outside of Montana that can have major impacts on local cash bids for wheat. Producers and others in the grain trade need a working knowledge of the effects of these underlying factors. Although futures markets have been the subject of much study over the years, the factors affecting the local basis are less understood.

These examples show how an elevator manager uses information about prices in different locations, knowledge of transportation costs, and premiums or discounts in order to develop an offer to producers. These examples also illustrate that producers can use the same information to assess elevators' cash bids.

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The key to understanding and using the local basis is to understand its history. When the basis is out of the historical range, it is important to search for its fundamental causes. These fundamentals can provide insight into the factors affecting local basis and whether they have short- or long-term implications for the market. Recognizing patterns in the basis and their underlying causes provides a framework with which to build an informed marketing strategy during each crop year.

The graphical illustrations of the local basis in Figure 1 show us that the freight component has been fairly predictable over time and that handling fees have been the source of volatility in the local basis to export. By identifying trends in the basis, it is possible to predict what times of the year the basis widens or narrows because of its two components. The behavior of the local cash to futures price basis is illustrated for various Montana locations in Figure 3 for No. 1, 13 percent protein wheat. For most areas of Montana during the past ten years, the local basis to export price has been weaker in September–November compared to December–February. This pattern occurs because increased grain volumes lead to tight storage and freight bottlenecks that generally occur during the peak harvest shipping period.

The freight component has been fairly predictable over time and handling fees have been the source of volatility in the local basis to export.

Basis over Time

The following discussion defines basis as the local cash price minus the futures price.

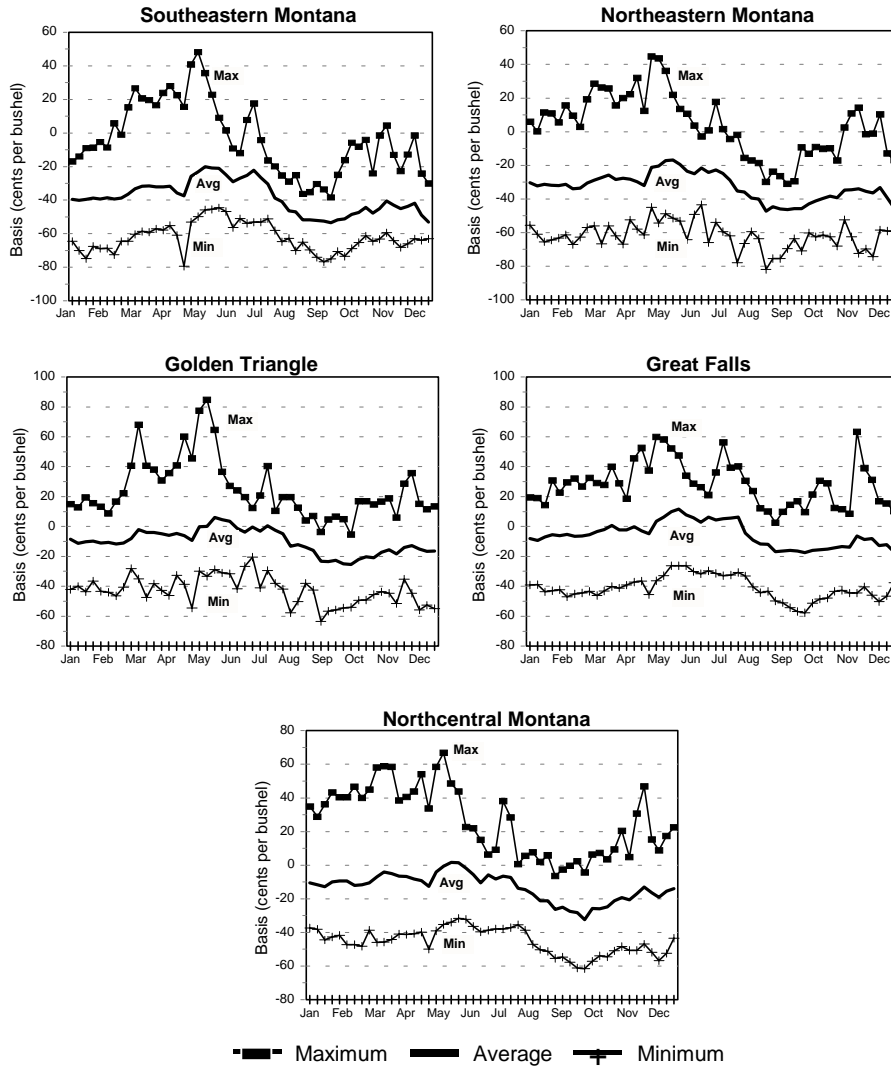
Definitions:

- *Basis Strengthens:*⁷ *If the current basis level is higher than the seasonal historical average basis, it is referred to as a strong basis. When the basis is strong, the cash price is high relative to futures prices, giving an incentive for increased cash sales of wheat at harvest.*
- *Basis Weakens:*⁸ *If the current basis level is lower than the seasonal historical average basis, it is referred to as a weak basis. When the basis is weak, the cash price is low relative to futures prices, and the market is discouraging cash sales and encouraging storage.*

The cash basis levels in Figure 3 reflect average weekly prices for each region over a ten year period (1989–1998), where the average, minimum, and maximum basis in each week is illustrated for comparison. Local basis to futures for grains tends to be cyclical in nature, generally exhibiting a strong basis in the first half of the year and a weak basis in the second. These seasonal trends primarily reflect harvest period pressure on the transportation and handling system (i.e., higher costs) and the worldwide supply and demand for high-quality HRS wheat.

Although the average basis to Minneapolis futures for Montana No. 1, 13 percent HRS is just under \$.00 per bushel (the cash price is slightly below the futures price), the historical range of this basis is extremely large. The maximum basis during 1989–1998 shows a *premium* for cash over futures of more than \$.80 (Golden Triangle in mid-April), whereas the minimum historical basis shows a cash *discount* to futures of \$.80 in

Figure 3. Monthly Spring Wheat Basis, 1989–1998



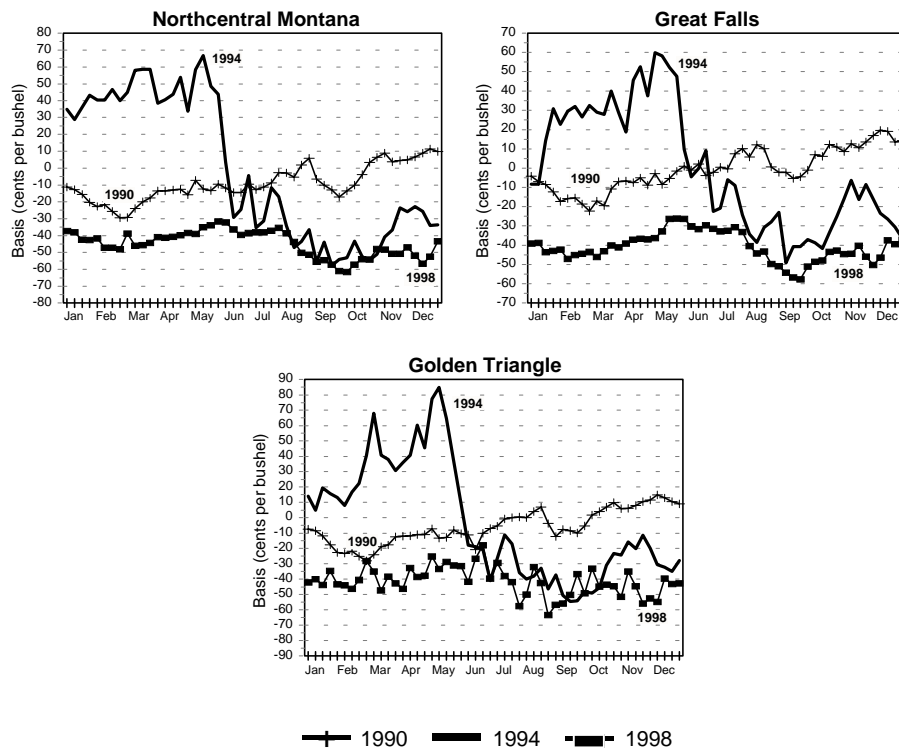
Source: USDA, compiled by Montana Wheat and Barley committee.

northeastern Montana during or just after harvest. The strong historical basis in April reflects nationwide demand for high-quality wheat. The low historical basis during and after harvest months reflects transportation and handling bottlenecks and a large grain supply.

This large basis range of approximately \$.60 around the average basis illustrates the importance of basis for the final cash price received by producers. Much of this large spread around the basis average is due to large changes in the maximum basis, particularly during the spring. If producers can recognize and take advantage of these periods of favorable basis, they may increase their effective wheat price.

Factors affecting the basis can be better understood by considering specific years: 1990, 1994, and 1998, as illustrated in Figure 4. The 13 percent protein wheat basis to Minneapolis was roughly average in 1990, a

Figure 4. Spring Wheat Basis, Selected Years



Source: USDA, compiled by Montana Wheat and Barley committee.

“normal” crop marketing year. The basis was weak in 1998, as crop yields were large and export demand to the Pacific Rim was low. This weak basis encouraged storage of the 1998 crop.

The basis in 1994 was highly variable, with a historically strong basis in the spring for all five regions. During the 1994/1995 crop year, the USDA forecasted wheat stocks were 568 million bushels. Although this forecast was up from the previous year, it was the fourth lowest in fifteen years. Considerable declines in stocks of high-protein milling wheat contributed to the strong basis in 1994. Excessive moisture in North Dakota and Canada caused considerable damage to the quality of the hard red spring wheat crop. Although this did not have a great impact on bushels produced, it did provide a premium for the high-protein milling quality spring wheat grown in Montana that year. Had producers and grain merchandisers recognized this strong basis, crop sales could have been adjusted and additional profits could have been realized.

Considerable declines in stocks of high-protein milling wheat contributed to the strong basis in 1994. Excessive moisture in North Dakota and Canada caused considerable damage to the quality of the hard red spring wheat crop.

Use of Basis by the Producer

Identification of seasonal trends in the local basis to futures provides a framework for forming marketing and hedging decisions. With this framework, specific pricing tools can be used to take advantage of a favorable basis or to avoid an unfavorable one. A variety of pricing mechanisms exist that enable the producer to use their knowledge of the local basis to futures in grain marketing decisions. We discuss some of these tools in order from the simplest to the more advanced.

The simplest use of basis knowledge is in *timing cash sales*. Producers with a knowledge of their historical basis and their monthly storage costs (most importantly their interest costs on grain storage) can plan their grain deliveries for months (for example, March) when the basis is seasonally strongest. In addition, producers with this basis and storage cost knowledge can adjust their deliveries in light of the current basis, increasing sales when the basis is strong relative to historic levels and decreasing them when the basis is weak relative to historic levels.

Basis information can also be used to select dates for *closing out hedges using futures or options contracts*. For example, a producer or merchandiser might consider hedging using contracts in historically strong basis months such as March and closing the hedge and delivering the grain in these months. With this hedge strategy, the producer can receive the guaranteed price from the hedge plus a historically favorable basis. A similar strategy might involve entering a *forward contract for delivery* to a local elevator during a historically strong basis month.

If a producer wants instead to preserve what he/she believes is an attractive basis level while waiting for changes in the futures contract price, a *basis contract* (also referred to as an unpaid contract) can be used. This contract allows a producer to lock in a basis level before specifying the futures price. These contracts specify a predetermined value above or below the futures price, but not the specific futures contract to be used. The final cash price is determined when the futures contract is selected. These contracts require delivery on a specific date.

Example of Basis Contract

On April 10, your local elevator is quoting a price of \$3.00 per bushel for No. 1, 13 percent hard red spring wheat delivered during harvest. Also on April 10, Minneapolis September futures are \$3.25 per bushel, resulting in a local basis of $-\$0.25$ per bushel for the September contract. Suppose that this $-\$0.25$ basis compares favorably with historical levels and you believe that as harvest approaches the basis will weaken. Suppose further that you also believe that as the basis weakens futures prices will increase. You go down to your local elevator and write a basis contract for $-\$0.25$ basis below the September contract for harvest delivery during the last two weeks of August.

As harvest approaches, suppose that the September futures price increased to \$3.50 per bushel and the local cash price is \$3.20. The basis has weakened to $-\$0.30$ for the September contract. At this time you decide to price the futures portion of the basis contract and instruct the elevator to price the futures portion of the contract netting \$3.25.⁹ Had a spot contract been made at the time of delivery, \$3.20 would have been your net price. Thus, risk of an adverse basis movement was prevented.

How the Basis Affects Returns to Marketing Strategies

The size and direction of the basis affect the net prices received by the producer, whether the producer uses cash market sales or hedges grain using futures or options. Alternatively, basis variability can be avoided under a forward price contract or a basis contract with the local elevator.

Basis information can also be used to select dates for closing out hedges using futures or options contracts.

We illustrate the results of these alternative marketing tools under two different futures price/basis scenarios.

Suppose that on April 10 a producer is contemplating how to market his/her upcoming spring wheat crop. The local elevator is bidding \$3.00 per bushel, No. 1, 13 percent protein, for new crop spring wheat delivered the last half of August.

+ \$3.25 Minneapolis September futures quote
 - .25 Local basis to futures
 \$3.00 Cash bid in April for new crop delivery in August

The September futures contract at \$3.25 would be used for a futures hedge, $-.25$ is the basis for a basis contract, and \$3.00 would be the net price received for a forward contract. An options hedge using the purchase of an out-of-the-money put¹⁰ at \$3.10 is also a possible marketing strategy; suppose that the cost of this put is \$.10 per bushel.

The price and basis factors in April are only part of the story because the futures price, cash price, and the basis could all change between April and September. Two market scenarios for the realized futures price and basis on August 24 are presented to illustrate different marketing options and net price received: (1) the futures price has risen to \$3.50, and the basis has strengthened to $-.20$; and (2) the futures price has fallen to \$2.70, and the basis has weakened to $-.40$. Table 1 reports the results of the alternative marketing strategies under these two scenarios.

Table 1. Price Scenarios for August 24 of the Marketing Year

Strategy	Scenario 1 Futures Price Increases to \$3.50, Basis Strengthens to $-.20$		Scenario 2 Futures Price Decreases to \$2.70, Basis Weakens to $-.40$	
	Realized Price	Source	Realized Price	Source
Cash Sale	\$3.30	Local Elevator Price	\$2.30	Local Elevator Price
Futures Hedge	\$3.05	Cash Price - \$.25 (futures loss)	\$2.85	Cash Price + \$.55 (futures gain)
Put Option Hedge: \$.10 per Bushel Cost	\$3.20	Cash Price - \$.10 (option cost), no exercise	\$2.50	Cash Price + \$.30 (exercise value) - \$.10 (option cost)
Forward Contract	\$3.00	Contracted Price with Local Elevator	\$3.00	Contracted Price with Local Elevator
Basis Contract ($-.25$ under)	\$3.25	Futures Price - \$.25 (contracted basis)	\$2.45	Futures Price - \$.25 (contracted basis)
Basis Contract ($-.25$ under) with Futures Hedge	\$3.00	Cash Price - \$.25 (futures loss) - \$.05 (contracted - actual basis)	\$3.00	Cash Price + \$.55 (futures gain) + \$.15 (contracted - actual basis)

The net prices for the marketing strategies under both scenarios clearly show the importance of the futures price and the basis for the net price received by the producer. The futures price is quite important for the net price under cash sales, the basis contract, and the options hedge. The basis is very important for the realized price under cash sale, futures or options hedges, and basis contracts; even though the price risk is reduced with a futures or an options hedge, the basis risk remains. Only a forward contract sale or the marketing strategy combining the basis contract with a futures hedge completely locks in the net price without risk.

The net prices for the marketing strategies under both scenarios clearly show the importance of the futures price and the basis for the net price received by the producer.

These examples illustrate just some of the potential price and basis movements and are meant to illustrate how these marketing tools work under different market conditions. But producers should exercise caution. The market does not always follow market trends. One potential market scenario is the December futures contract falling below \$3.25 (making hedges or forward pricing more desirable). Another scenario is the basis unexpectedly strengthening (e.g., to $-\$.10$), making cash sales and hedges more desirable. In this case a standard spot cash sale or minimum price contract (use of option to establish minimum futures price) would net a larger return. The important thing for producers to consider is the relative size of their futures price and basis risk and then carefully evaluate the appropriate marketing alternatives.

Where to Go from Here?

Understanding historical basis requires knowledge of the factors that influence the basis. This knowledge can be as important as knowing the cost of producing spring wheat. The first step in keeping historical basis information is to record the local cash price of spring wheat. Daily cash price quotes are available at the local grain elevator. There is also a useful Web site (portions require a subscription) from the Montana Grain Growers Association, which provides current price and basis information at: (www.montanamarketmanager.org). Another useful Web site is the USDA's Agricultural Marketing Service's page, which provides daily prices and weekly summaries for grains and other agricultural commodities at: (www.ams.usda.gov/lsg/mnacs/index.htm). In addition to these Web locations, the Montana Wheat and Barley Committee compiles historical price and basis information for specific state locations and the Montana Agricultural Statistics Service's annual publications give state average prices received for grains and livestock on a monthly basis.

Local cash prices will vary for differing grades and protein levels. In order to avoid price discrepancies, the cash price quotes that are gathered must be consistent from year to year with regard to protein and other quality factors. The Web sites mentioned here provide cash prices for various protein levels.

1. Futures prices for the Minneapolis Grain Exchange are from Prophet Information Services (Worldwide Futures), a commercial data source.
2. Generally, the area between the points of a triangle at Great Falls, Cut Bank, and Havre.
3. These grain truck rates also reflect profitable opportunities of fertilizer and feed back hauls from Minneapolis to Fargo.
4. At the time of this writing, the Burlington Northern–Santa Fe Railroad entered into a proposed merger with the Canadian National Railroad. As this merger remains to be approved, we will continue to refer to the Burlington Northern–Santa Fe.
5. FOB stands for “free on board,” meaning that the seller pays for the costs of loading grain onto the rail cars but no costs beyond that point.
6. Freight rate data used to calculate the \$.45 per bushel transportation and handling charge was obtained from published rates of the Burlington Northern–Santa Fe Railroad.
7. A strong basis is also referred to as a narrow basis when the cash price is below futures.
8. A weak basis is also referred to as a wide basis when the cash price is below futures.
9. Elevators have different restrictions for pricing the futures portion of basis contracts. It is important to be aware of all of the possibilities.
10. A put option gives the holder the right, but not the obligation, to sell a futures contract at a given price. Put options can serve as a form of price insurance.

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