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Agricultural Outlook Forum

Presented: February 16, 2006

HOW PRIVATE MARKET ANALYSTS USE MARKET NEWS IN LIVESTOCK
AND MEAT REPORTS

Rob Murphy
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Presented: Thursday, February 16, 2006

HOW PRIVATE MARKET ANALYSTS USE MARKET NEWS LIVESTOCK AND MEAT REPORTS

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Informa Economics, previously known as Sparks Companies, is one of the largest information and consulting companies in the US that specializes in agricultural markets. The company was founded in 1977 by Willard Sparks and acquired in December 2003 by Informa, plc, a large publishing concern based in the United Kingdom. The focus of the company has always been, and continues to be, providing information and analysis that helps agribusinesses achieve success by making better decisions. Informa Economics conducts a considerable amount of work in the US livestock and meat sectors. My primary assignment is to the Beef Group in livestock area of the company. In that capacity, I provide forecasts of beef cut prices to clients on a regular basis and conduct other types of fundamental market research. A large proportion of clients that I work with are located at the top of the beef value chain—second stage processors, retailers and foodservice operators. In addition to those duties, I am also in charge of work related to price risk management across the entire commodity spectrum.

Today, I have been asked to give you a perspective on how market analysts in the private sector use the data contained in livestock and meat reports issued by Market News. I must begin by admitting that at Informa, we are heavy users of the high-frequency data that Market News supplies. Often our clients are looking for assistance in making very short-run decisions such as whether or not to purchase today or wait a day or two. In that type of an environment, it is critical to be able to understand the current market situation and what it portends for the future. We also utilize market news data in ways that are more directed at understanding longer-run dynamics of the livestock and meat industries.

A database has existed within the company since the early 1990s to capture and catalog many thousands of data series that USDA releases. A large proportion of these are generated by the Market News branch. In the livestock and meat area, virtually all of the Market News reports released each day have their data stripped, error checked and shuttled into a database within minutes after each report is released to the public. From there, analysts can use spreadsheet add-ins to import data into workbooks as needed. In recent years, USDA has been releasing more of this data in “user-friendly” formats such as delimited files, but prior to about 2002, the only electronic means of acquiring this data was from text files released to the public at various times during the day. Part of the value of the Market News data used at Informa lies in the relatively long history in our database. Daily price data are aggregated up to form weekly and monthly average prices for analysis. Week-to-date and Month-to-date averages are maintained for all livestock and meat price series.

In what follows I will provide descriptions of specific applications in which we use data from USDA Market News reports:

Price Forecasting

It is well known that cash prices for livestock and meat items are highly seasonal and most forecasters of these price series rely heavily upon knowledge of historical seasonal patterns. In this regard, the long history of prices provided by Market News is indispensable in our forecasting efforts. We project historical seasonal patterns and compare them with our fundamental supply and demand forecasts. This allows clients to evaluate the wisdom of relying traditional “rules of thumb” (i.e., the seasonal patterns) and to spot opportunities when their counterparties may be watching seasonals. Slide 4 displays a chart that is typical of the type we use in price forecasting applications for meat cuts. All of the historical data used to produce this comes from Market News reports.

Uncovering inter-relationships between price series is also an important use of Market News price data. At last count, USDA was reporting prices for about 135 distinct types of cuts that come from a fed beef animal. Most of these price series are important to at least some of our clients and thus we must maintain forecasts for all of these series. It would be too labor-intensive to conduct separate supply/demand analysis on each and every one of those items. Instead, we make use of long-standing relationships between the price series to formulate statistical models, which are then used to generate forecasts for the majority of items. Analysts can focus on 20-30 “core” items, directly applying supply and demand analysis to arrive at forecasts which then feed models developed with Market News data to produce the full set of forecasts.

Benchmarking

We also use price data from Market News reports to develop benchmarking systems for purchasing departments. In these instances, a client may be interested in gauging the effectiveness of purchasing personnel in securing “better” prices than their competition or as an indicator of their negotiation skills. These benchmarking efforts generally utilize Market New prices to represent the average transaction price for a particular meat item and to perhaps approximate the distribution of transaction prices. Then the client’s proprietary information on their actual transaction prices is used to estimate how their buyers performed relative to transactions reported for that particular time period. Slide 5 illustrates this for a beef item on one day earlier this year. Market News reported the high, low and weighted average transaction prices for the cut which were used to construct a triangular distribution as a an estimate of the distribution of prices in the marketplace on that day. The client’s actual weighted average purchase price is superimposed on this distribution and the area to the right of that price is calculated. In this example we are able to estimate that this client’s purchasing personnel were able to procure at a price better than 90% of that day’s volume. This type of work is often extended to weekly or monthly pricing.

Volume Analysis

The move to mandatory price reporting in 2001 made additional data available that has proven very useful to clients for making short-term decisions. Specifically, mandatory price reports contain information on the volume of product that traded in addition to the price. For a perishable, continuously produced item like beef, the size of a packer’s inventory has very significant influence on the urgency to sell and the price at which the packer would be willing to transact. The old meat trader adage “sell it or smell it” vividly conveys this concept.

Production of a particular cut of beef can be easily estimated based on daily slaughter levels, which have been reported by Market News for many years. However, prior to mandatory price reporting, public data on the quantity of an individual item sold was either not available or unreliable. So, while it was possible for observers to gauge vaguely what overall beef inventory levels were, it was difficult to know what the inventory status was for a particular cut. With mandatory price reporting however, came daily information on the pounds sold by reporting packers each day. This opened a new window on inventories by cut that allowed a new type of volume analysis, which our clients have found to be very useful.

Each day, we compare the volume data reported for a cut on the boxed beef report to the estimated production of that cut based on slaughter data and calculate the percentage production that was sold. Over time, we are able to gauge what the “normal” percentages are for a particular cut. (Some transacted volume always goes unreported for various reasons. These include as internal transfers, movement to export, non-reporting packers and distressed sales.) This volume measure is normally calculated as the ratio of the last five days’ sales to production over that same period. When the actual sales as a percentage of production is low relative to the average, we can surmise that the packing industry must be building inventories of that item. These are the times when clients on the buy side of the market find it most advantageous to approach sellers. Slide 6 shows an example of this type of volume analysis. For this particular cut, a buyer entering the market on Feb 3 when the sales to production ratio had dropped below the average level realized a price about \$8/cwt. lower than he might have if he had entered the market on January 31st. For a moderate-sized transaction of 100,000 pounds, this would have saved the buyer \$8,000.

Demand Analysis

The fundamental analysis that most livestock and meat analysts practice is usually very long on supply-side analysis and short on demand-side work. This is because the government routinely surveys different segments of the industry to produce a wealth of supply information: slaughter statistics, placements on feed, inventory estimates, carcass weights and other information that facilitates the estimation of the number of pounds of a commodity that is being produced or will be produced in a future time period. Demand information is much more difficult to come by. Traditionally, livestock analysts have relied more on anecdotal evidence of demand changes when working with individual cuts of meat. Through conversations with industry contacts, they may hear that a particular restaurant chain is introducing a new sandwich or that a retail chain is going to feature a particular cut of meat heavily in the next few weeks. There have been some very high-level “demand indexes” put forth in the past that measure the change in aggregate demand for beef or pork on a quarterly basis. Those are very useful in discerning broad industry trends but are not particularly useful to a market participant who is interested in an individual cut.

To help fill this void, Informa pairs USDA Market News price data with production estimates to derive monthly demand estimates for the major cuts of beef. This is a two-step process with the first involving an XY plot of the monthly average cut price against monthly US beef disappearance. This is a classic price/quantity demand relationship. These data are then used part of a proprietary process to estimate the slope of a linear demand curve for the cut in each month. Once the slope of that curve is estimated, we then calculate from historical data the average position of that demand curve during the five-year period from 1999 and 2003. All demand measures are based on this five-year base period. Next, we

observe the location of the most recent data point and calculate the how much the demand curve would need to shift (parallel) in order to produce that data point. This gives us an estimate of the change in demand. This change in demand is then expressed as a percentage of the five-year base period that runs from 1999-2003. Slide 8 shows a time series of these demand changes as calculated for strip loins. Here, 12 months of historical demand changes are displayed along with 12 months of forecasted demand changes.

This information is not particularly useful for short-run decision-making, but does become relevant in as the planning horizon increases. Because there is a certain amount of memory in these demand statistics (i.e., if demand is particularly strong in the current month, there is a good possibility that it will remain strong in the next couple of months), they can be used to improve forecast accuracy. In addition, by modeling demand explicitly, we are able to provide clients with an objective measure of the demand level that is impounded in our price forecast.

Futures Implied Pricing System

Using futures to manage price risk can be challenging for buyers and sellers of meat products. Outside of pork belly futures, there are no futures contracts based on cuts of meat. Those who wish to use futures markets to hedge price risk must utilize futures contracts based on live animals—cattle and hogs. These cross hedges raise a number of issues for a potential hedger that might not exist if the futures contract were identical to the item being hedged. Some of the questions a potential hedger might ask include: “What is the correct number of futures to buy or sell in order to hedge this risk”, “How effective can I expect this hedge to be?” “What is the potential basis risk that I face?” “By purchasing the futures at today’s price, what price am I locking in for the meat cut I seek to hedge?” While the answers to these types of questions might be relatively clear for a simple grain hedge, they are not so transparent for a meat cross hedge.

Informa recognized that clients would be very reluctant to hedge unless these questions could be adequately answered. We also recognized that to be useful, this information needed to be delivered in a very timely manner since markets can move very quickly. Developing the answers to the hedger’s questions typically involves some statistical analysis of historical price data—something that very few meat traders feel comfortable doing. Our answer to this dilemma was to bring Market News cash price data together with real-time futures prices in an Internet-based application that can provide users with up-to-the-minute implied pricing for over 100 beef cuts and more than 50 pork items.

In this system, after a user selects a meat item to be analyzed, our computer routines perform the required statistical analysis and display the results in a table like the one on Slide 11 in the accompanying presentation. From this table, the user can instantly know the meat price in forward time periods that is being implied by the current level of futures prices (50% column). It also provides a measure of historical effectiveness (R^2) and the size of the basis risk (25% and 75% columns), and the number futures to hold per unit of cash exposure (hedge ratio).

Through this application, we been able to take what has previously been a textbook exercise and make it useful in practice to non-technical users. For smaller companies, it has brought active risk management

within the reach of those who might not have attempted it otherwise. Larger firms have found it to be a useful laborsaving device and helpful in complying with accounting standards such as FAS 133.

Conclusion

This presentation has provided several examples of how one private sector company uses livestock and meat information produced by Market News for the betterment of its clients. All of these applications rely on cash market price information that would be very difficult to obtain without USDA's involvement in this area. Informa and its clients are grateful to the Market News reporters for their efforts in covering livestock and meat markets and making that data available to users.

There are many other ways in which we employ Market News price data that I have not detailed here and I'm sure that other private-sector companies have found innovative ways to use these data. Mandatory price reporting has provided users with much more information than was available in the past and the accuracy of that information has improved. I believe that, in decentralized markets such as those for meat and livestock, the government provides a great public service by requiring that transaction prices be reported and then making aggregate data available to the marketplace. This helps to reduce the inefficiencies that arise from information asymmetry and lowers costs for a large segment of the industry.

I would be amiss if I did not present my "wish list" for future actions in the livestock and meat information arena. First, it is imperative that the uncertainty surrounding mandatory price reporting for beef be resolved and the program extended and funded, if not permanently, then for many years. It is ridiculous to have to reauthorize such a program few years. Second, mandatory price reporting for pork items is badly needed and well overdue. One has only to look at all of the benefits that have flowed from mandatory price reporting for beef to see the potential for pork. Third, early cutoff times specified in the mandatory price reporting legislation create some problems for analysts. In particular, cattle trade often occurs after the 1:30 pm deadline and does not get reported until the next day. If the legislation is re-opened, then pushing back the afternoon cutoffs by an hour or two ought to be strongly considered. Finally, I believe that there would be value in having USDA share more of the details that are collected as part of the mandatory price reporting program with analysts. Information on the distribution of prices would be particularly useful and could probably be released without compromising the identity of the reporting firms. In this vein, USDA could also make data available for study after some period has passed, so that analysts could hone their systems without compromising the competitive position of reporting entities as might happen if the data were released soon after it were collected.

In closing, I'd like to thank USDA for the opportunity to be here today and expose you to some of the ways in which Market News livestock and meat information is used by private sector analysts. Hopefully, I have been successful in demonstrating that mandatory price reporting has created value for many in the agribusiness community. It should not only be retained, but expanded.

How Private Market Analysts Use Market News Livestock and Meat Reports

**Rob Murphy,
Informa Economics, Inc.
Feb 16, 2006**

Informa Economics Background

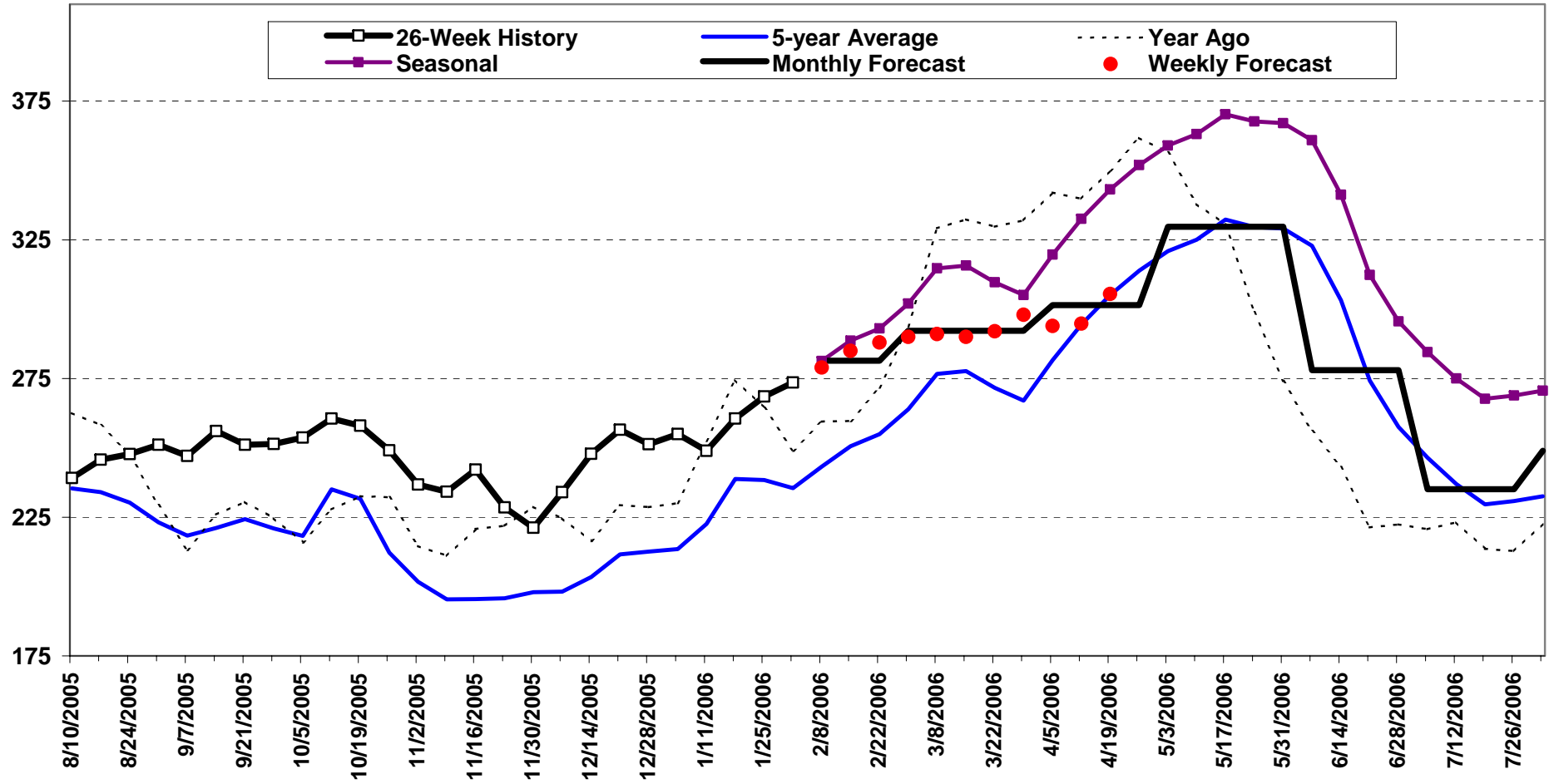
- **Founded in 1977 as Sparks Commodities, renamed Sparks Companies in the 1980s**
- **Acquired in 2003 by what is now T.F. Informa, plc., a British publishing company**
- **Has grown to become one of the largest and most respected agricultural consulting companies in North America.**

Types of Data Employed

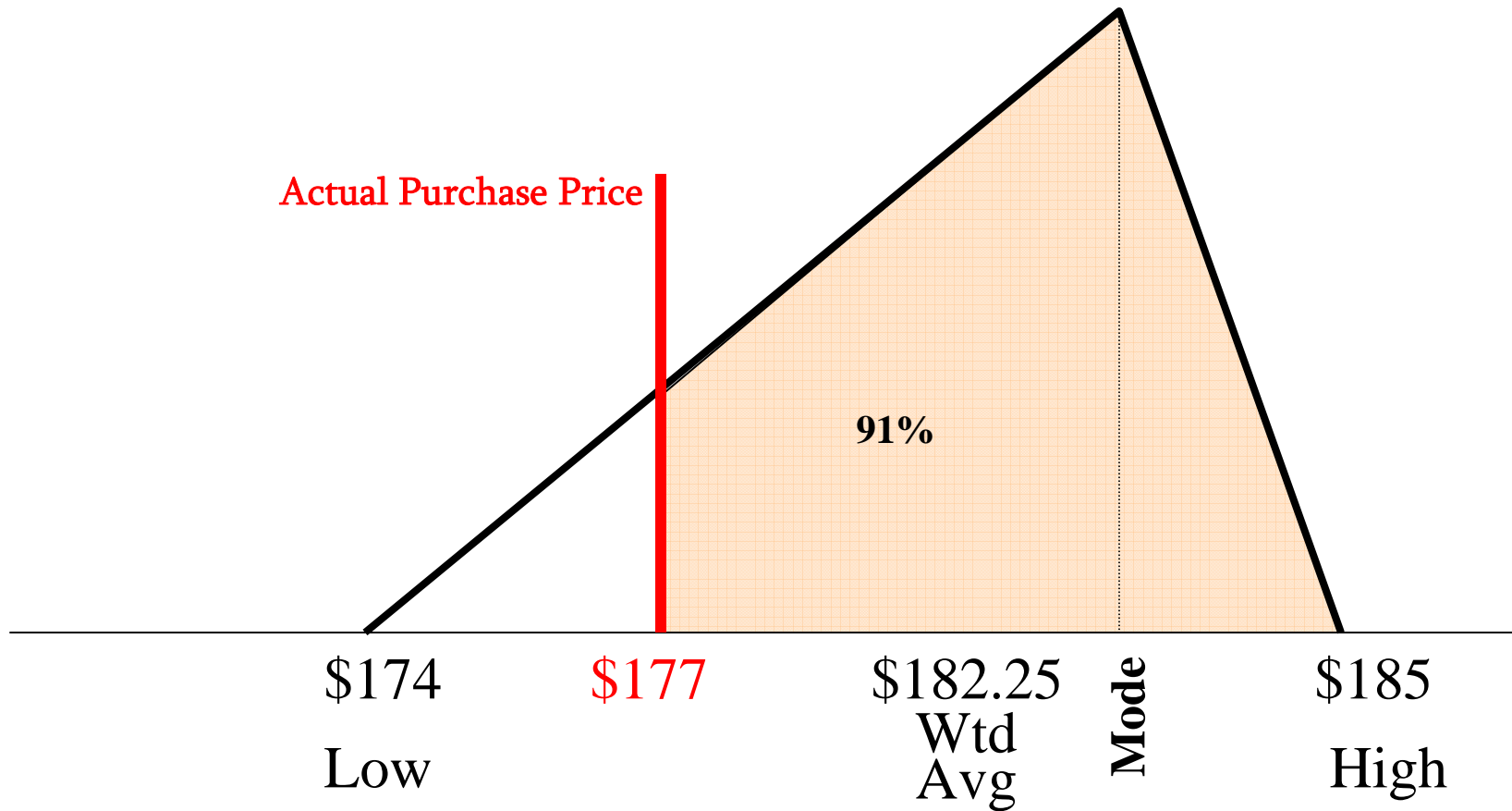
- **Livestock work: better than 95% of all data used comes from USDA**
- **Big user of high frequency Market News price data and lower frequency NASS production data**
- **In-house database system has existed since early 1990s. This allows analysts (and clients) unprecedented access to thousands of AMS and NASS data series**

Sample Forecasting Application

Ch XT Top butt, bnls

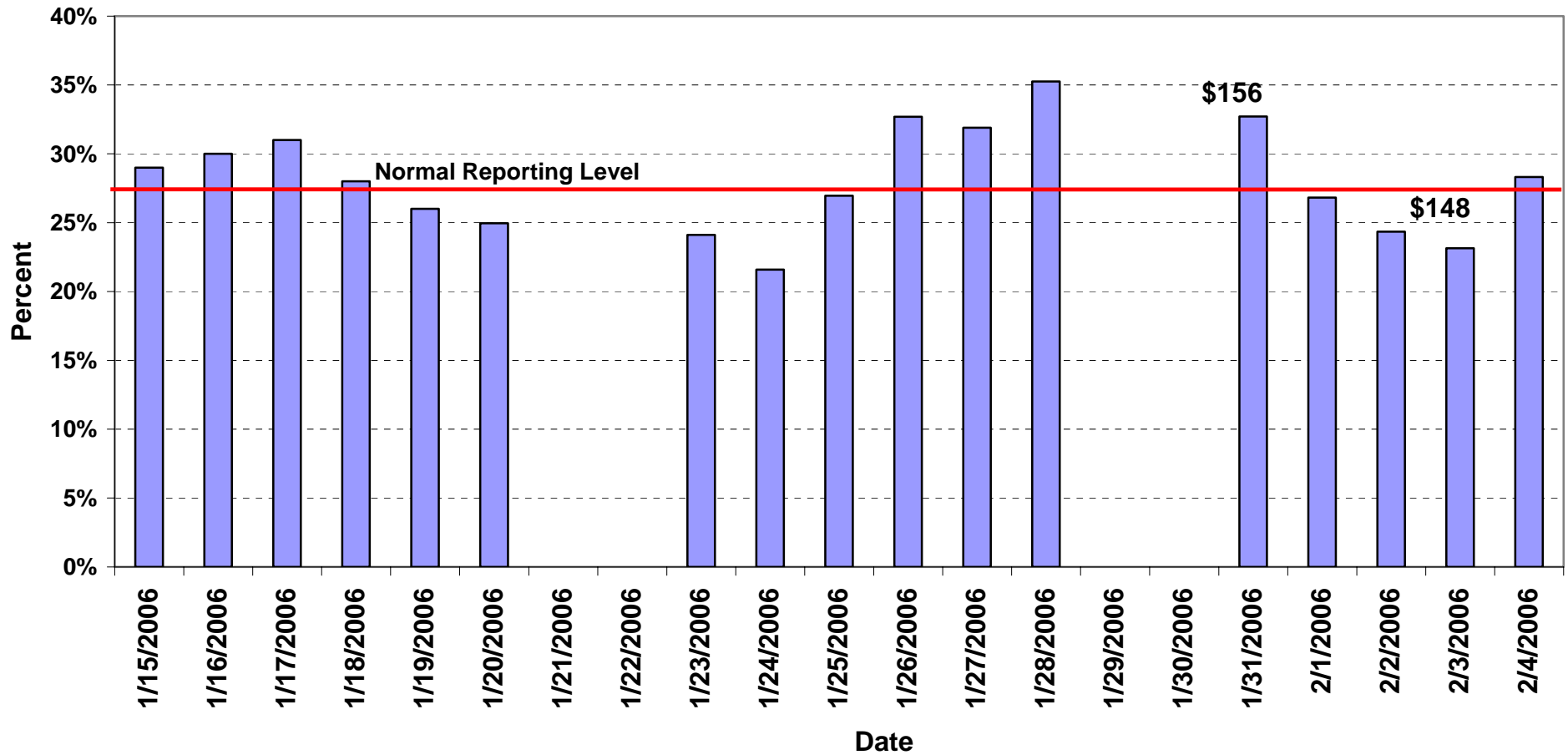


Benchmarking Calculation



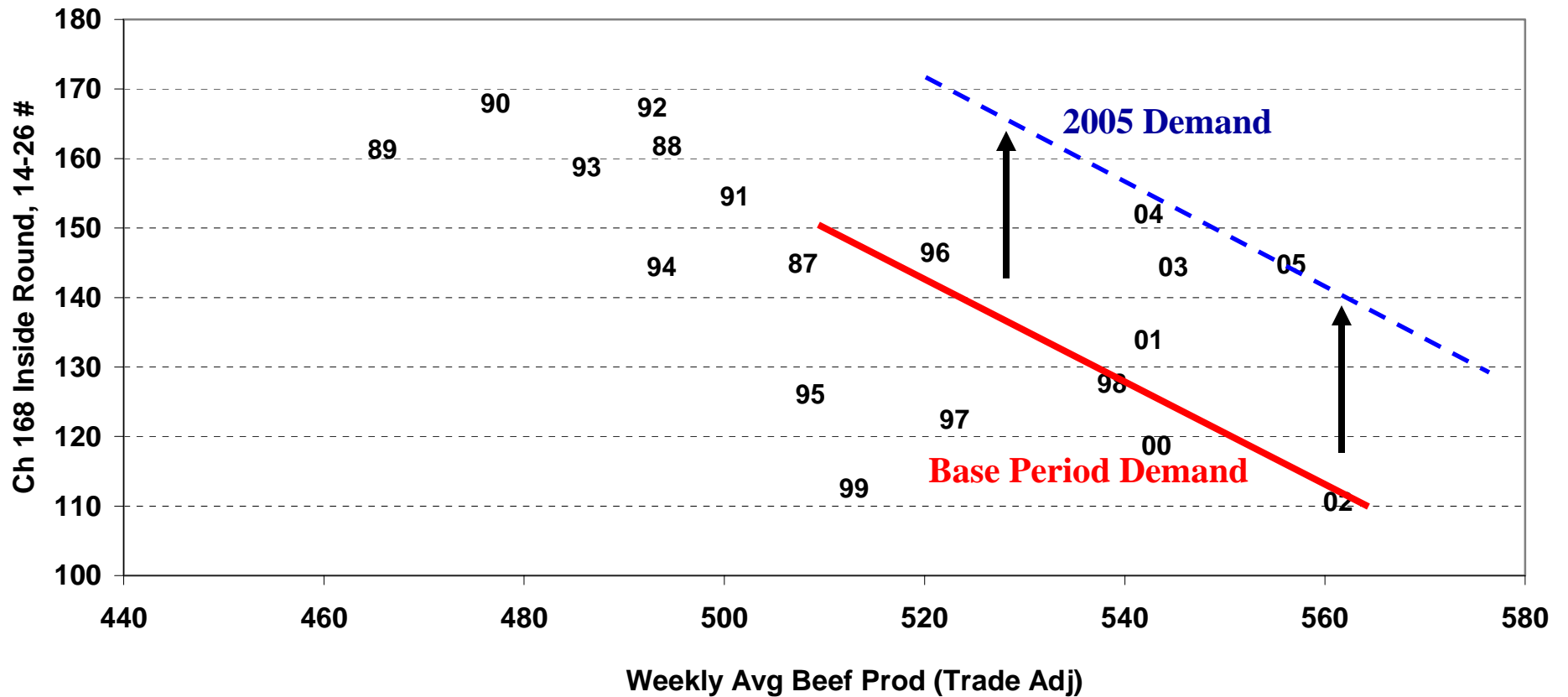
Sample Volume Application

Five-Day Sales as a Percent of Production, Beef Clods



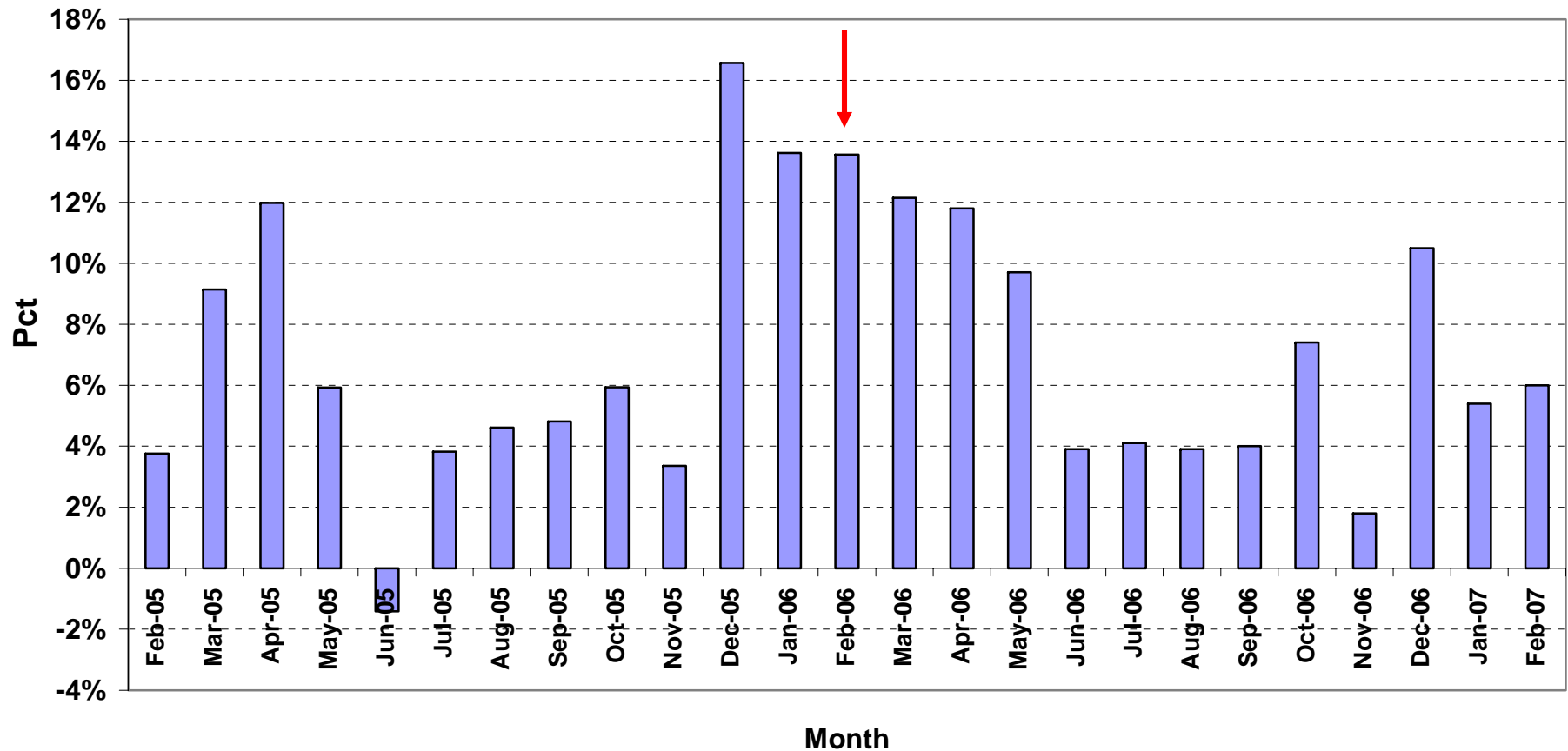
Demand Analysis

P-Q Relationship, Ch. Inside Rounds, August



Sample Long-Run Demand Analysis

Ch XT Strip Loin, 0x1, bnls
Demand Chg From 99-03 Avg



Web-Based Hedging Application

LVWebIntro - Microsoft Internet Explorer

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Back Search Favorites

Address <http://www.informaecon.com/fip/LVWebIntro.asp> Go Links

Beef **informa economics** **Pork**
an AGRA informa company

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About Us **FAQ**

2/14/2005 2:43:47 PM

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Password:

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Hedging Tool Example

Implied Pricing Table - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address <http://www.informaecon.com/fipsql/LVMain.asp?commod=LN4FR1318W> Go Links

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Our Mission
To Be a Vital Force in the Success
of Food and Agricultural Interests Around the World

Futures Implied Pricing

Loin Bone-In 1/4" Trim 21#Dn-Lgt Total Fob Basis Avg

Confidence Limit:

First year in the analysis:










Years to Exclude: (use 4 digits) View Weekly Data

[Change Parameters/Refresh data](#) [Choose another commodity](#) [Chart cash prices](#)

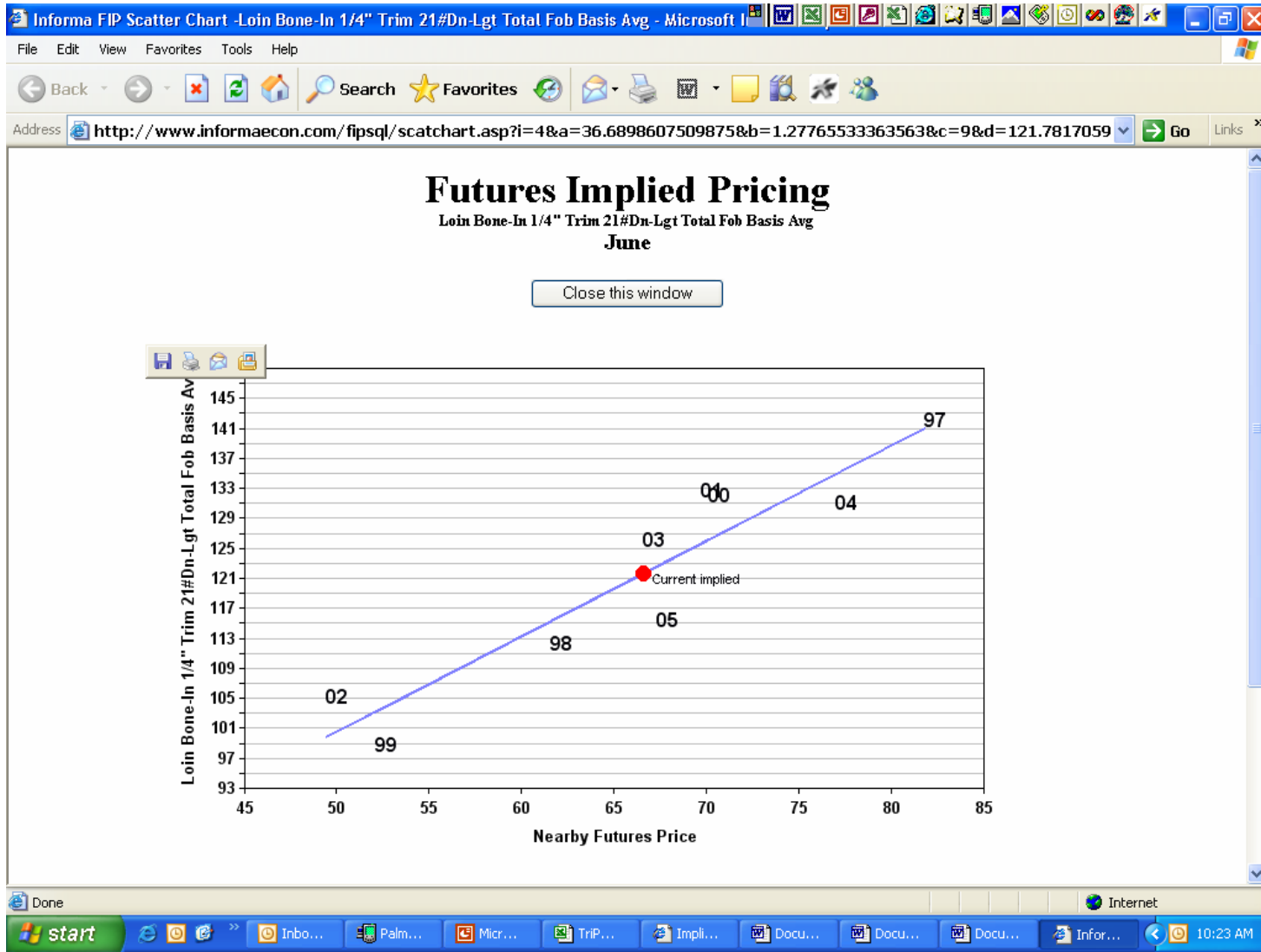
Month	R Square	Hedge Ratio	25% Level	50% Level	75% Level	Number Years	Based on Futures	Updated	Chart the Basis
Mar	76.1	1.38	105.47	111.65	117.82	9	LH 2006-04	2/7/2006 10:11	
Apr	91.7	1.39	111.21	114.90	118.58	9	LH 2006-06	2/7/2006 10:10	
May	69.1	1.40	118.50	125.88	133.25	9	LH 2006-06	2/7/2006 10:10	
Jun	86.5	1.28	117.52	121.78	126.05	9	LH 2006-07	2/7/2006 09:58	
Jul	65.9	1.01	111.91	118.84	125.78	9	LH 2006-08	2/7/2006 09:53	
Aug	72.3	0.96	111.00	116.55	122.10	9	LH 2006-10	2/7/2006 09:43	
Sep	78.5	0.99	106.32	111.57	116.82	9	LH 2006-10	2/7/2006 09:43	
Oct	55.3	0.85	100.63	107.26	113.90	10	LH 2006-12	2/7/2006 09:26	
Nov	68.8	1.03	90.29	97.79	105.29	10	LH 2006-12	2/7/2006 09:26	
Dec	73.3	1.27	91.70	99.20	106.71	10	LH 2007-02	2/7/2006 09:47	
Jan	51.8	0.78	99.69	106.71	113.74	9	LH 2007-02	2/7/2006 09:47	
Feb	73.5	1.15	98.93	104.06	109.19	9	LH 2007-02	2/7/2006 09:47	

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Futures Implied Table, Closeup

Month	R Square	Hedge Ratio	25% Level	50% Level	75% Level	Number Years	Based on Futures	Updated	Chart the Basis
Mar	76.1	1.38	105.47	111.65	117.82	9	LH 2006-04	2/7/2006 10:11	
Apr	91.7	1.39	111.21	114.9	118.58	9	LH 2006-06	2/7/2006 10:10	
May	69.1	1.4	118.5	125.88	133.25	9	LH 2006-06	2/7/2006 10:10	
Jun	86.5	1.28	117.52	121.78	126.05	9	LH 2006-07	2/7/2006 09:58	
Jul	65.9	1.01	111.91	118.84	125.78	9	LH 2006-08	2/7/2006 09:53	
Aug	72.3	0.96	111	116.55	122.1	9	LH 2006-10	2/7/2006 09:43	
Sep	78.5	0.99	106.32	111.57	116.82	9	LH 2006-10	2/7/2006 09:43	
Oct	55.3	0.85	100.63	107.26	113.9	10	LH 2006-12	2/7/2006 09:26	
Nov	68.8	1.03	90.29	97.79	105.29	10	LH 2006-12	2/7/2006 09:26	
Dec	73.3	1.27	91.7	99.2	106.71	10	LH 2007-02	2/7/2006 09:47	
Jan	51.8	0.78	99.69	106.71	113.74	10	LH 2007-02	2/7/2006 09:47	
Feb	73.5	1.15	98.93	104.06	109.19	9	LH 2007-02	2/7/2006 09:47	

Hedging Tool Example, Continued



Wish List

- **Mandatory Price Reporting Program Permanently Authorized and Funded**
- **Mandatory Price Reporting Program Extended to Pork**
- **Cutoff times for daily MPR data pushed later in the day, particularly for cattle**
- **Make MPR transactional data available to analysts in a way that doesn't disclose reporting entities**