ANALYSIS AND COMMENTS

Livestock Marketing Information Center

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RETAIL SCANNER PRICES FOR MEAT AND POULTRY: SOME OBSERVATIONS AND DISCUSSION

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Representative retail prices for meat and poultry are essential for quantifying and explaining consumer demand, evaluating the impacts of external shocks to the meat industry, understanding retailer margins, and evaluating the effectiveness of check-off programs. These data are also useful for government agencies when comparing their food acquisition prices to actual retail store prices. The availability of representative retail prices for meat and poultry items has been a major concern of many Agricultural Economists for decades. This article provides some background and perspectives regarding quality and quantity of retail price data using retail scanner data versus using data derived from BLS. The focus of this paper is on some general comparisons of retail meat and poultry prices from scanner data versus those that have been historically reported. We do not intend for the observations to be comprehensive, but they hopefully will stimulate additional discussion and provide a basis for future analysis.

Background

In 1999, the collection of additional retail meat and poultry price data for U.S. meat products was enacted as part of the Livestock Mandatory Reporting Act. The USDA's Economic Research Service (ERS) developed and compiled a searchable database containing monthly average retail prices for a broad range of fresh meat and poultry products. Those data have been reported since January 2001 (http://www.lmic.info/meatscanner/meatscanner.shtml). In 2003, LMIC and ERS initiated a joint effort with the LMIC mostly responsible for oversight and management of the database. The database uses point-of-sale scanner data to reflect true retail prices paid by consumers, which accounts for specials, featuring, and club card pricing.

The monthly price data and information is obtained from secondary sources (not directly from retailers) and represents supermarkets with annual sales of $2 million or more. These data do not include sales from butcher shops, warehouse clubs (i.e. Costco, Sams Club), convenience stores, mail order firms, or those food distributors that have chosen not to provide data industry data sources. The scanner price database accounts for about 20 percent of U.S. supermarket sales geographically distributed across all major U.S. metropolitan areas.

Prior to Mandatory Price Reporting, the Bureau of Labor Statistics (BLS) was the only source of retail meat and poultry price data. The data collected by BLS were used by ERS to calculate retail beef and other meat prices. However, those historically reported prices have

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many limitations. It must be recognized that the BLS data are not collected for the purpose of economic analysis but are collected simply as an input into the monthly national Consumer Price Index calculations. "Users of average retail food prices should be aware that these data are best suited to measure price levels in a particular month. The estimates are not designed to track price changes over time, nor are they intended for use in making inter-area comparisons. Ongoing updates will cause movement of average prices over time to differ from the movement of an index for the same item."[2]

Differences Between the Two Data Series

Prices available from the scanner data cover an extensive range of fresh meat items sold at retail: currently, the scanner price dataset includes 91 individual meat products of which, 50 products are beef; 20 items are pork; 11 are poultry (chicken and turkey); nine are for lamb and one is for veal. In contrast, the BLS data items are a very limited (15 for beef, 7 for pork, and 3 fro poultry), and consist of "entry level items" (ELI). An ELI is a grouping of individual meat cuts priced by BLS. For example, the ELI for Sirloin Steak consists of top sirloin steak and tenderloin steak. So, a BLS reported sirloin price would be an average of the most expensive and the least expensive cuts from the loin. In addition, because of the limited items reported, ERS estimates prices for several cuts to fill-in items not reported by BLS.

Scanner price data are collected over the entire span of a given month, capturing any adjustments in prices that may occur during the month. BLS data are based on one price-sampling period during a particular time of the month (typically during the first week). In addition, scanner prices reflect store discounts and specials that have become standard practices in the retail industry. Importantly, the reported BLS prices do not fully account for featuring, sales programs, and promotions used to sell beef at the retail level. These are important distinctions between the data sets and can have significant implications.

General Observations

Retail prices for meat items (beef, veal, pork, lamb, and poultry) vary throughout a month due to a variety of economic and seasonal factors. Monthly differences in prices and price levels are apparent in the scanner price data particularly when compared to the BLS price data.

For example, the BLS price series and the scanner price series data series for boneless Select beef roasts differ significantly as shown in Figure 1. An important pricing strategy for retailers is to reduce the price of an item when it is featured in an advertisement. Overall, the retail scanner price data implies that retail prices fluctuate significantly throughout the year, whereas the BLS price data suggests prices are more constant during the year and trending up rather consistently over recent years. During the 2001-2004 time frame, retail scanner prices for boneless Select beef roasts have ranged from $2.38 per pound to $4.12 per pound, whereas the BLS data price range was much narrower with a $1.03 per pound spread between the high and low prices reported for the respective period.

Seasonal featuring of items like hams and turkeys are especially important to retailers. The price differences that exist between the two prices series is seen in the data series for boneless ham prices. During the Christmas and Easter holidays retailers typically feature ham items. Thus, it would be reasonable for ham prices to vary quite significantly during these two periods compared to non-holiday months. In comparing the scanner price data with the BLS data for boneless ham prices, the scanner price series exhibits tremendous seasonality over a given year, with large price decreases during the Easter and Christmas holiday months (see Figure 2). The price variation observed around the holiday months is not surprising given the seasonal demand for the this item, however, the BLS does not capture much if any of the seasonal price

[2] Rabil, Floyd A. 1984. A Technical Note. Monthly Labor Review. 107 (November 1984): 52-53.

changes for boneless hams. A similar seasonal price pattern is exhibited in the scanner price data, which is not captured in the BLS data for frozen whole turkeys (see Figure 3).

Because BLS does not account for on-advertisement movement, one would expect the BLS price series to report higher prices than scanner data prices. This observation is fairly noticeable in Figure 4, which compares the two price series for boneless pork chops. During 2001-2004, BLS monthly prices for boneless pork chops averaged 7 percent higher than the scanner price series. For the first seven months of 2005, BLS prices on average were 11 percent higher than the scanner series. The difference in price between these two series is especially apparent during 2002 and 2004. This observation also occurs for many additional meat items included in the price series data. For example, from 2001-2004 monthly prices for boneless Choice beef roasts averaged $0.54 per pound higher than the prices reported in the scanner price series (see Figure 5). For Select beef roasts, the BLS price series averaged $0.16 per pound higher than the scanner price series for the respective period (see Figure 1).

Over a period of time, retail meat prices may exhibit a long-term upward or downward price trend. As retail prices increase, it would be reasonable to assume that both prices series would exhibit an upward price trend when viewed graphically. However, this assumption does not hold for all items reported in the price series data, as evidenced when comparing the all pork scanner and BLS price series in Figure 6. During 2001 through July 2005, the scanner price series shows evidence of a subtle decline in pork prices whereas the BLS series exhibits a noticeable upward price trend. The difference in price trends between the scanner price and BLS series is more pronounced during 2004 and 2005, however a simple trend analysis over the entire reporting period also indicates a divergence in trend between these two price series.

Retail Prices Focusing on Beef

Scanner retail prices for beef items exhibit some interesting general patterns. Overall, the monthly retail price for Choice whole muscle beef products often holds a price premium to Select whole muscle beef items, as would be expected given higher quality items are valued at a higher price in the wholesale market. This observation is apparent among the middle meats i.e. rib and loin cuts, as higher graded items are more preferred by consumers. It should be noted, that on a per item basis, this price premium might change during the year due to supply and demand factors and be minimal to non-existent for those items where quality grade is not a key determinant in product value (i.e. chuck, round).

In conjunction, the seasonality of beef item prices is exhibited in the scanner data series. For example, during the summer grilling period, there is a strong demand among consumers for grill-friendly beef cuts such as sirloin and t-bone steaks compared to the other times of the year. Thus, retail prices for these items are slightly higher during the spring and early summer months versus other times of the year. At the same time, the price difference between retail Choice and Select items is often greatest during the spring and early summer months in response to both demand and supply conditions. Again, this observation is expected given the price premium of Choice beef over to Select beef seasonally widens during this time.

After the discovery of BSE in the U.S. in December 2003, retail beef prices were expected to decline in response to potential weakness in domestic consumer demand and a larger beef supply due to the absence of an export market. However, retail prices for some beef items increased in 2004 as evidenced in the scanner price data. For example, in 2003, the average scanner price for Choice boneless sirloin steak was $4.70 per pound; in 2004 the average price had increased to $5.42 per pound, a price gain of 15 percent. The increase in retail prices was the result of an extremely strong consumer demand for beef (i.e. product type and quality improvements, protein diets) and tighter beef supplies as the U.S. cattle industry entered into an expansion phase.

Trade disruptions occurring within one meat market can have an impact prices in another meat market. For example, in March of 2002, Russia placed a trade embargo on U.S. exports

of chicken products[3]. The majority of U.S. chicken exports to Russia consist of dark meat items such as chicken legs and thighs. As a result, the available supply of these items increased which not only impacted the prices of these items but also the prices for substitute products such as boneless beef round roasts. In March, the monthly retail scanner price for Choice boneless beef round roasts was $2.97 per pound. The following month the price dropped to $2.68 per pound, a 10 percent monthly decline. A sizeable monthly decline was also apparent in retail prices for Select boneless beef round roasts. At the same time the prices for chicken legs and chicken thighs declined 12 and 15 percent, respectively in response to the increase in poultry supplies. However, the BLS price series actually reported a monthly increase in Choice boneless beef round roasts of $0.02 per pound while prices for chicken legs declined only $0.01 per pound from March to April.[4] How much of an impact the Russian trade embargo had on the retail prices for these items is not known for sure as retail prices for these items improved in the following months, but it may have been one potential factor to consider.

Concluding Comments

On a monthly basis, retail prices for meat items (beef, veal, pork, lamb, and poultry) fluctuate in response to a number of factors such as seasonal demand, supply conditions, prices of competing meats, type of meat cut (i.e. quality grade, brand), retailer specials, and economic conditions. Because prices fluctuation, a good retail price database is essential for economists to analyze important questions regarding markets for meats, and, , markets for livestock. Historically, the BLS price data has been the only data series available. However, in 2001, a new data series based on actual retail scanner prices data from a representative sample of retail stores became available due to Mandatory Price Legislation.

This article presented some background and perspectives regarding the quality and quantity of retail price data using retail scanner data versus using data derived from BLS. In particular, this analysis identified some important differences between the retail meat and poultry prices from scanner data versus those that have been historically reported. In comparing the two price data series, differences are apparent in four aspects: 1) product price seasonality; 2) reported product price levels (i.e. some items show consistent price difference between the two data sets); 3) price volatility (month-to-month price changes); and 4) price trends for key items. The quantity and quality of meat and poultry items included in the scanner data price quantity greatly surpasses the historically reported BLS data. It often appears that the scanner price data series comply more closely with prior expectations of retail price behavior. BLS data often mask seasonal price fluctuations and price changes due to market forces. The retail scanner data now available provides several avenues for further analytical work and refinements to existing methodologies. Of course, understanding the significant limitations of the historically reported BLS data on retail meat and poultry prices is critical to conducting applied research on economic aspects of retail consumer demand.

[3] Embargo became effective on March 10, 2002.

[4] Monthly prices for chicken thighs are not included in the BLS price series.

Figure 1

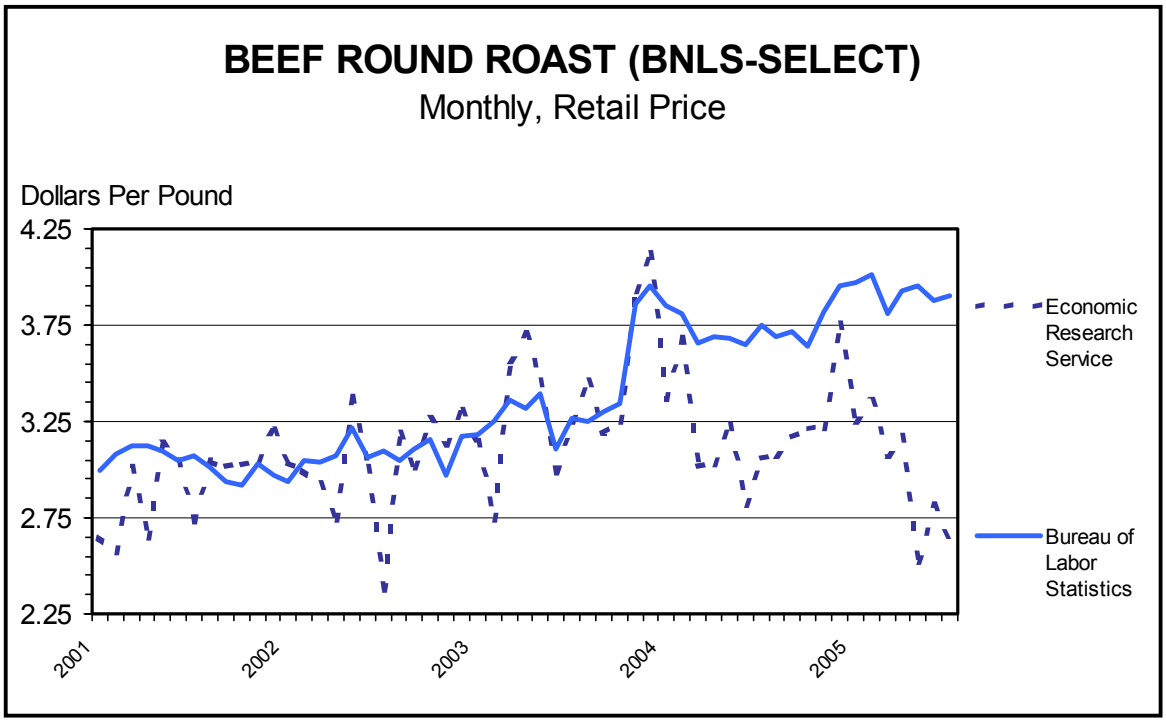

Figure 2

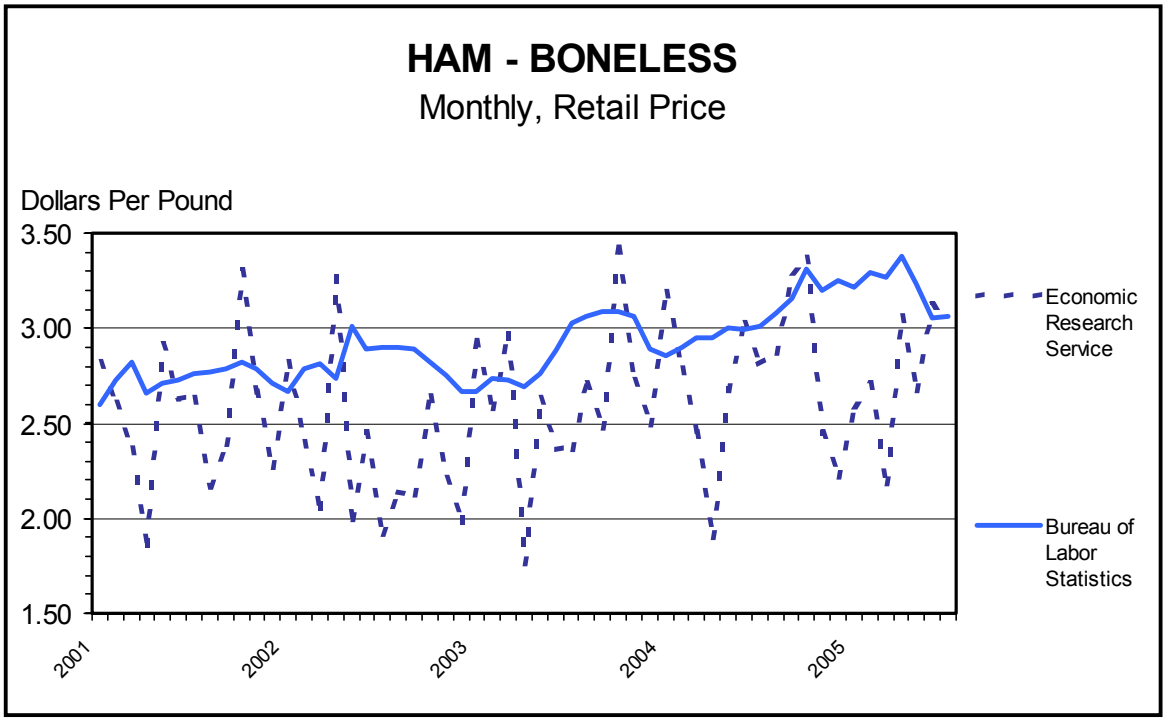

Figure 3

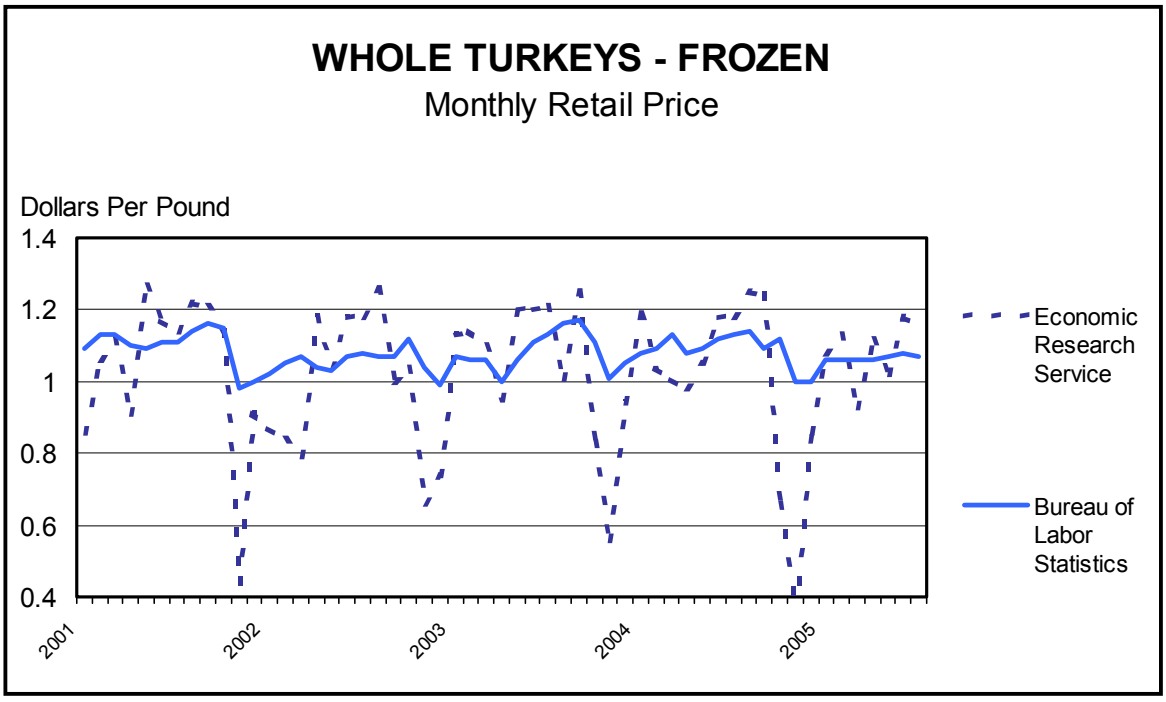

Figure 4

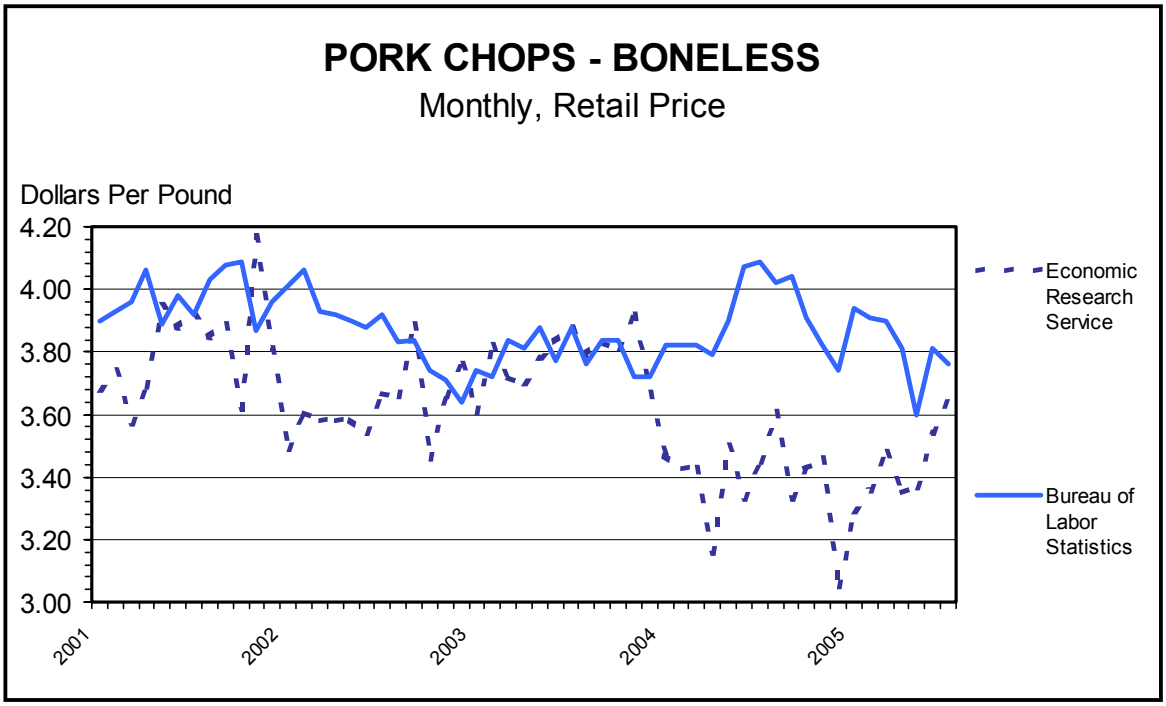

Figure 5

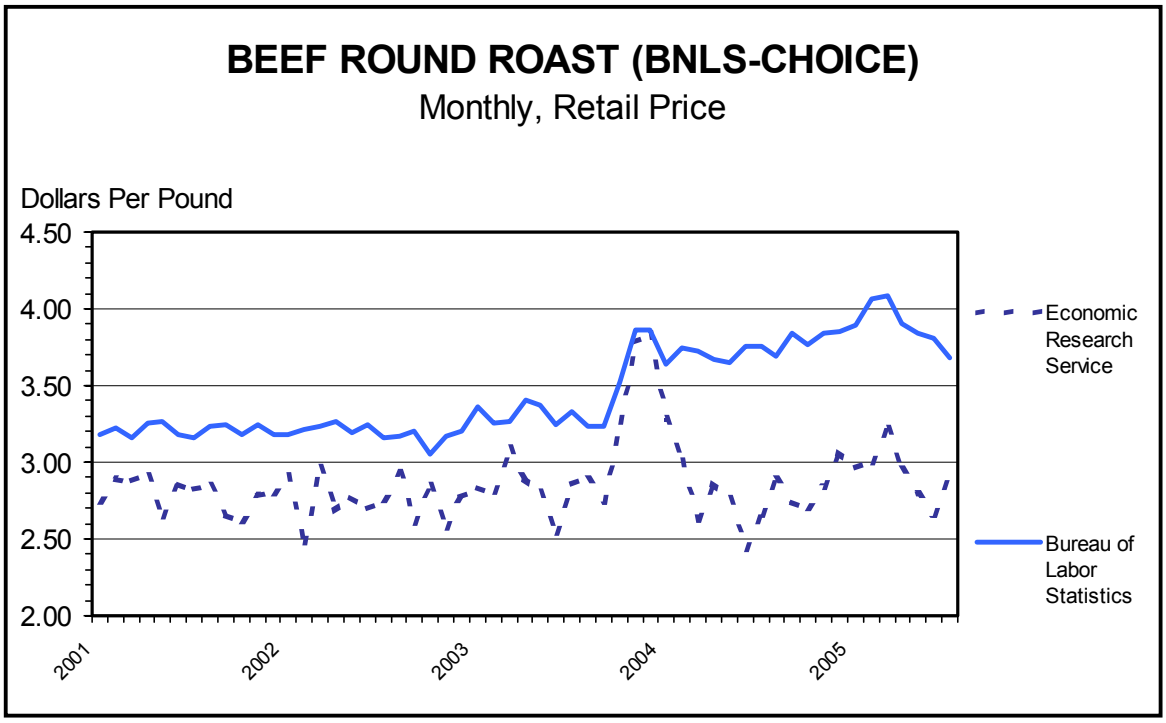

Figure 6