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Measuring Price Spreads in Red Meat

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HIGH AND increasing price spreads in red meat often lead to controversy—livestock producers tend to blame low livestock prices on high price spreads, and consumers blame high retail prices on high price spreads. Increasing price spreads can both inflate retail prices and deflate farm prices. The intertemporal relationships among live, wholesale, and retail beef and pork prices are important issues in effectively analyzing and monitoring the efficiency and equity of the red meat marketing system. Knowledge of how these prices react to one another is useful for private as well as public policy decision making.

Price spreads, or marketing margins, are the difference between prices at different stages of the supply chain. The wholesale-to-retail spread is the difference between the wholesale price and the retail price. The farm-to-wholesale spread is the difference between the wholesale price and the net farm price (net farm price is the gross farm price minus the value of byproducts per unit). The total spread is the sum of the farm-wholesale and wholesale-retail spreads, which can also be calculated by subtracting the net farm price from the retail price. For example, if the wholesale price is \$2.00/lb and the farm price is \$1.50/lb, the farm-to-wholesale spread is \$0.50/lb. With a retail price of \$3.00/lb, the farm-to-retail spread is \$1.50/lb and the wholesale-to-retail spread is \$1.00/lb. Figure 1 shows monthly price spreads for beef and pork in the United States from January 2000 to December 2015 as calculated by the US Department of Agriculture’s Economic Research Service (ERS). The burgundy area labeled “Farm” is the value created

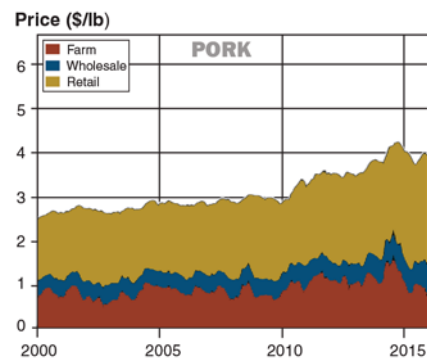
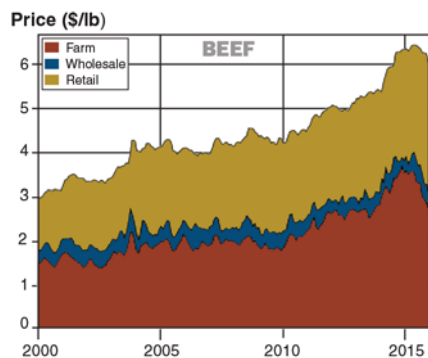


Figure 1: Price spreads for beef and pork, 2000-2015, monthly

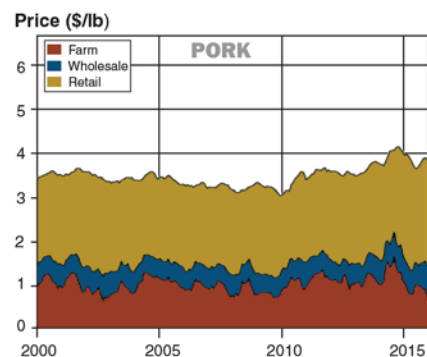
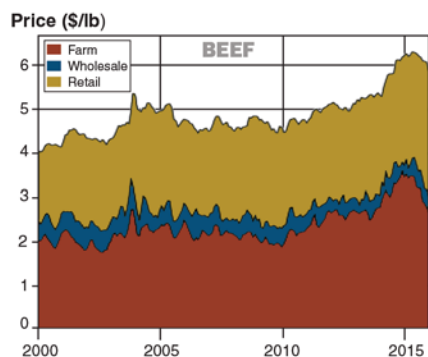


Figure 2. Price spreads for beef and pork (CPI, January 2015=100), 2000–2015, monthly

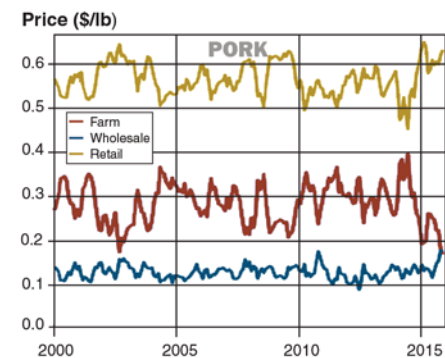
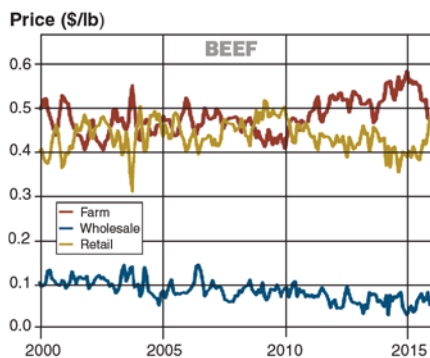


Figure 3: Value shares for beef and pork from retail equivalent prices

at the farm. The dark blue area labeled “Wholesale” is the farm-to-wholesale spread. The black line between the Farm and the Wholesale areas is the price paid to farms. The brown area labeled “Retail” is the wholesale-to-retail spread. The black line between the wholesale and the retail areas is the wholesale price. The black line at the top of the brown area is the retail price.

The total farm-to-retail spread has been increasing primarily because of increase in the wholesale-to-retail spread, and in the case of beef because of an increase in farm price. The wholesale-to-retail spread is a measure of the margin that the retail segment has extracted. It is made up of retailers’ costs and their profit margins, and while it is impossible to infer from the

figure whether the increase is due to increasing costs or to increasing profits, retailers' total operating margin has expanded significantly and persistently.

ERS calculates price spreads based on composite meat products with definitions remaining constant throughout the series plotted in Figure 1. This means that although grocery stores are selling increasing quantities of boneless and value-added meat products, the definitions of the meat products used by ERS remain constant over time (ERS redefines composite meat products on occasion to adjust for changes in industry practices.) In addition, the definitions of the composite products remain constant within the supply chains so that prices in Figure 1 are all reported given the composition of products sold at retail. The values used in Figure 1 are in nominal terms, meaning they have not been adjusted for inflation.

A more nearly-correct way to look at the spreads would be to remove the influence of inflation and then examine the patterns. If packers, for example, are able to keep the increase in the margins they extract to an amount exactly equal to the inflation rate, then the inflation-adjusted spread would be flat and a horizontal line on the graph. With increased efficiencies, especially significant economies of size associated with the large packing plants being realized, then the inflation-adjusted margins could actually trend down

over time. Conversely, if middlemen have not accumulated cost-reducing efficiencies, then the inflation-adjusted spread will trend higher. An upward trend in an inflation-adjusted spread means that the middlemen are extracting a margin that is growing more rapidly than the inflation rate, and they are either taking a larger profit margin or are extracting a larger margin to cover rising costs.

Figure 2 shows the inflation-adjusted spreads, and the message they offer is revealing and important. The retail inflation-adjusted price in beef has increased, while remaining relatively constant for pork. In beef, the rise in the retail price is mostly due to an increase in the farm price, while the farm-to-wholesale spread has narrowed and the wholesale-to-retail spread has remained constant. In pork, the spreads have stayed relatively constant.

Figure 3 presents data that show implicitly the spreads in a format that many market participants use. Lines represent the share of retail dollar accrued at the farm, wholesale and retail level. For example, at the end of 2015, for a dollar spent on beef about 45 cents went to the farm (producers), about 10 cents to wholesale (packers), and about 45 cents to retail (grocers). Value shares are not sensitive to inflation.

The shares in Figure 3 confirm conclusions based on Figure 2. In beef, the farm value share has

increased since 2000, the wholesale value share has declined, and the retail value share has remained relatively constant. In pork, all value shares have stayed relatively constant since 2000. Figure 3 is especially useful to describe what has occurred in recent months. The decline of livestock prices has caused the farm value share to decline for both beef and pork. In beef, this has resulted in an increase in the retail value share, but in pork it is a combination of an increase in wholesale and retail value shares. However, Figure 2 shows that the declines in farm prices have been largely passed to consumers as retail prices have declined.

Recurrent accusations by consumer and producer groups of retailers failing to react to declining livestock prices cannot be substantiated based on Figures 2 and 3. It takes time for prices to adjust, and they tend to adjust more rapidly when they are increasing than when they are decreasing. Thus, even if the recent decline in farm prices has not yet been entirely passed to consumers, we expect the pass-through to more fully adjust in the next few months, such that we observe further decline in prices for red meat at retail. ■

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