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## Examination of pork marketing margins

### Abstract

This study analyzes recent changes observed in pork, farm-to-wholesale and wholesale-to-retail, marketing margins. Although the inflation-adjusted, farm-to-wholesale margin has declined over the last 25 years, the wholesale-to-retail margin has increased. Pork producers need to know why these trends have occurred so they better understand pork marketing margin determinants as they develop policy positions and consider vertical marketing alliances.; Swine Day, Manhattan, KS, November 21, 1996

### Keywords

Swine day, 1996; Kansas Agricultural Experiment Station contribution; no. 97-142-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 772; Swine; Pork marketing margins; Pork price spreads

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## EXAMINATION OF PORK MARKETING MARGINS<sup>1</sup>

*T. C. Schroeder and J. Mintert<sup>2</sup>*

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### Summary

This study analyzes recent changes observed in pork, farm-to-wholesale and wholesale-to-retail, marketing margins. Although the inflation-adjusted, farm-to-wholesale margin has declined over the last 25 years, the wholesale-to-retail margin has increased. Pork producers need to know why these trends have occurred so they better understand pork marketing margin determinants as they develop policy positions and consider vertical marketing alliances.

(Key Words: Pork Marketing Margins, Pork Price Spreads.)

### Introduction

Marketing margins are among the most scrutinized measures of market performance by both meat producers and consumers. Hog producers in particular become concerned when live animal prices decline without a corresponding decline in retail pork prices. Especially distressing to producers is the fact that, when live hog supplies are at high levels, marketing margins are typically also at high levels. Thus, producers face the double burden of low live hog prices induced by large meat supplies coupled with increased marketing margins. Together, these two events reduce hog farmers' share of the retail dollar.

The purpose of this report is to examine recent changes in the pork farm-to-retail

marketing margin. In particular, reasons behind changes in the pork marketing margin over time are explored and economic factors affecting the margin are examined. Results provide pork producers an improved understanding of determinants of pork marketing margins so they can make more informed policy decisions. In addition, hog producers need to understand marketing margin determinants so they will be better equipped to negotiate pricing arrangements with processors and retailers as they develop marketing alliances.

### Procedures

Monthly farm, wholesale, and retail pork price and price spread data were collected over the 1970 to 1995 period. Economic factors affecting the farm-to-wholesale and wholesale-to-retail marketing margins also were collected. Factors examined were average daily hog slaughter, pork production, packing plant hourly wage rates, energy costs, measures of processor and retailer pork marketing risk, the amount of pork in cold storage, and meat packing and food store labor productivity. Regression models were estimated to quantify the impact of these economic factors on the farm-to-wholesale and wholesale-to-retail pork marketing margins.

### Results and Discussion

Marketing margins are differences in prices (adjusted to equivalent processing

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<sup>1</sup>Appreciation is extended to the National Pork Producers Council for providing financial support to conduct this study.

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weights) across different stages of the market channel. For example, the farm-to-retail margin for pork is a composite retail pork price (each cut's price weighted by the proportion of the carcass it represents) minus the live hog price adjusted for the value of by-products that are not processed into retail product. Both prices are converted to retail weight equivalents so that the margin precisely measures changes in retail price relative to the price of pork at the live animal level, after adjusting for waste and by-products that do not go to the retail market.

Although margins are related to wholesale and retail profits, they are not indicators of profitability. Margins are only barometers of costs to process and market pork products. As processing costs increase or as more processing is performed on meat products, the farm-to-retail pork margin will necessarily increase. Alternatively, technology that makes processing and marketing less costly will reduce margins.

The inflation-adjusted, pork, farm-to-retail margin (1995 dollars) has declined at a gradual rate since 1976 (Figure 1). This decline was caused primarily by declining farm-to-wholesale price spreads. During the 1980 to 1995 period, inflation-adjusted pork prices at all three market levels declined, but wholesale and live prices declined more than retail prices.

Relative to retail prices, farm pork and beef prices have fallen steadily since the early 1970s. Since 1975, the farmer's share of the retail dollar declined from 65% to 49% for beef and from 59% to 34% for pork (Figure 2). This decline in share is reflective of more intensive processing of beef and pork over the time period. Given the larger percentage of highly processed pork products relative to beef at the retail counter, it is not surprising that pork producers receive a smaller percentage of the retail dollar than do beef producers.

The long-term trends of declining farm-to-wholesale margins and increasing wholesale-to-retail margins are important considerations. These trends suggest that real costs

associated with slaughtering and processing pork and beef by packers declined, while food store processing and marketing costs gradually increased. This also is reinforced by examining labor productivity in both sectors. Figure 3 illustrates labor productivity (level of output per employee hour) in meat packing and in retail food stores. Over the last 25 years, meat-packing labor productivity increased at an average annual rate of 2.4%, while food-store labor productivity declined at an average annual rate of 0.8%. Meat-packing labor productivity increased primarily as a result of improved slaughtering technology. Food-store labor productivity declined primarily because of the increased services being offered by retail food stores. Although optical scanners and warehouse shelving methods increased food-store labor productivity, this was more than offset by the introduction of labor-intensive store services, such as fresh meat delis and cooked meat products. This increase in store services gives the appearance that labor productivity has declined.

Other important pork margin determinants also were identified. In particular, as the number of hogs slaughtered per day increased, pork farm-to-wholesale margins increased. This is because, as packing plants attempt to increase slaughter beyond efficient capacity levels, they do so at higher costs. These higher costs are passed directly back to producers in the form of lower live hog prices. Similarly, as total pork production (number of hogs times average processed weight) rose, the wholesale-to-retail margin also increased. Labor costs were also important margin determinants. A 1% increase in packing plant wage rates was associated with a 0.3% increase in farm-to-wholesale margins. Also, a 1% increase in pork cold storage stocks increased farm-to-wholesale margins by 0.2%. As cold storage stocks increase, processors need fewer hogs to meet retail pork demand and reduce live hog prices accordingly.

In summary, inflation-adjusted, pork, farm-to-wholesale margins declined at a gradual rate over the last 20 years. This occurred because improved processing tech-

nology allowed for substitution of capital for labor. During this same time frame, wholesale-to-retail margins increased as food stores offered more in-store services including finer meat processing and food preparation. Because of the costs associated with moving

large amounts of pork through the marketing chain, when hog numbers are high, marketing margins increase. In addition, because cold storage stocks buffer pork production declines, declines in pork marketing margins may lag behind declines in hog production.

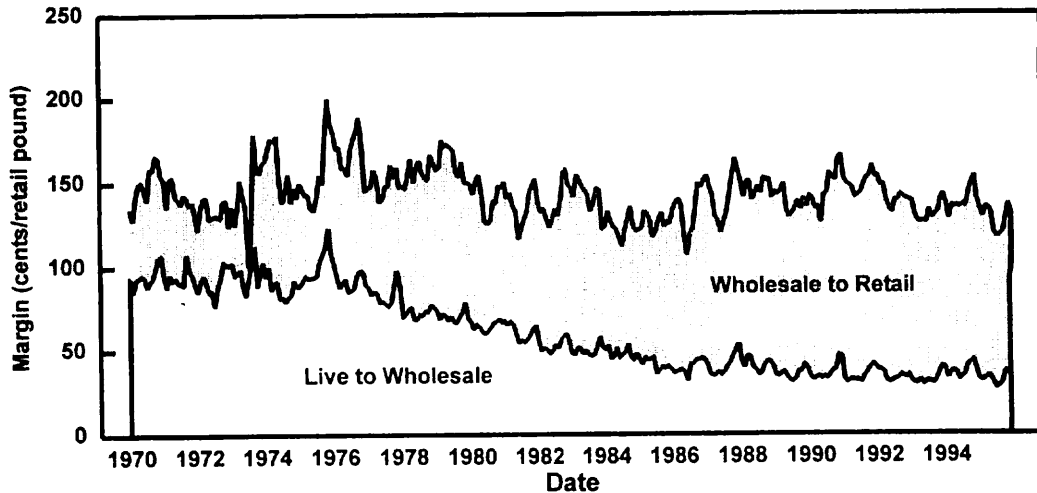


Figure 1. Pork Farm-to-Wholesale and Wholesale-to-Retail Margins in Real 1995 Dollars, Monthly 1970-1995

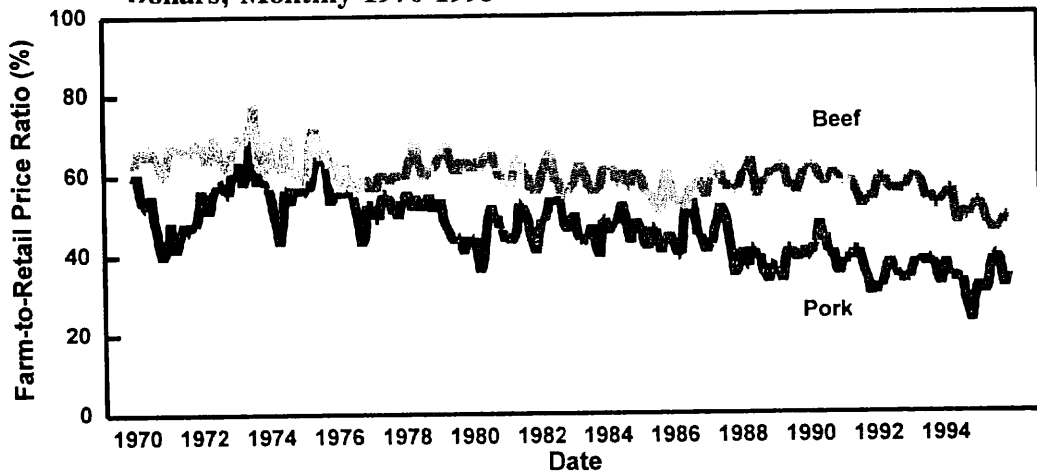


Figure 2. Farmer's Share of Retail Pork and Beef Prices, Monthly 1970-1995

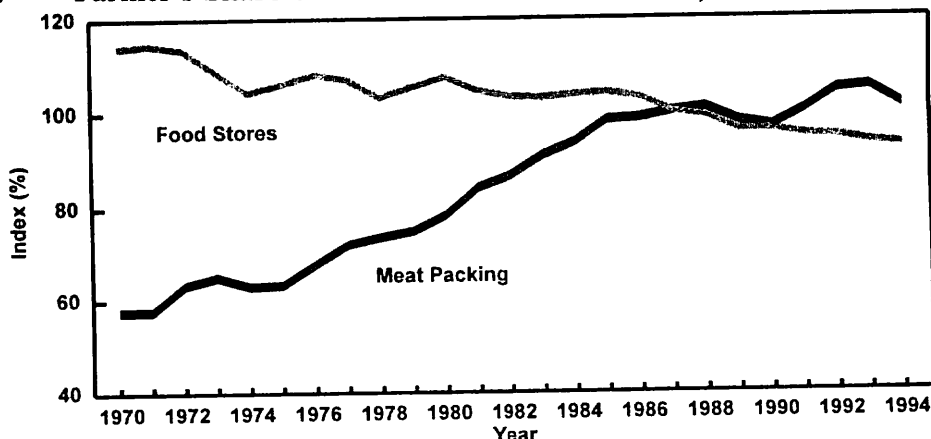


Figure 3. Meat Packing and Food Service Labor Productivity Indexes, 1970-1994 (1987=100)