



BRIEFING

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Evaluating the Farmer's-Share-of-the-Retail-Dollar Statistic

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Objective

Analysis For

Informed

Decision Making

"The established method of reporting farmer's share and [price] spread as a percentage of the consumer's food dollar has contributed to a wide misunderstanding of the true economic relation of agriculture to food processing and distribution. It has made them appear as competitors for a fixed value, rather than as partners in the production of greater value." (Atchley, 1956).

Farmer's-share-of-the-retail-dollar (FS) statistics represent the value of raw agricultural commodities as a proportion of consumer at-home food expenditures. The U.S. Department of Agriculture (USDA) calculates FS statistics for a broad range of agricultural commodities. As Brester (2006) notes, conventional wisdom often considers FS statistics (and their corollaries, marketing margins) as proxies for farm/ranch profitability and producer well-being. Furthermore, some have argued that decreases in FS statistics (and, by construction, increases in farm-to-retail marketing margins) are indicators of anti-competitive behavior in the food processing.

Agricultural economists have long-noted that such relationships cannot be justified on theoretic grounds

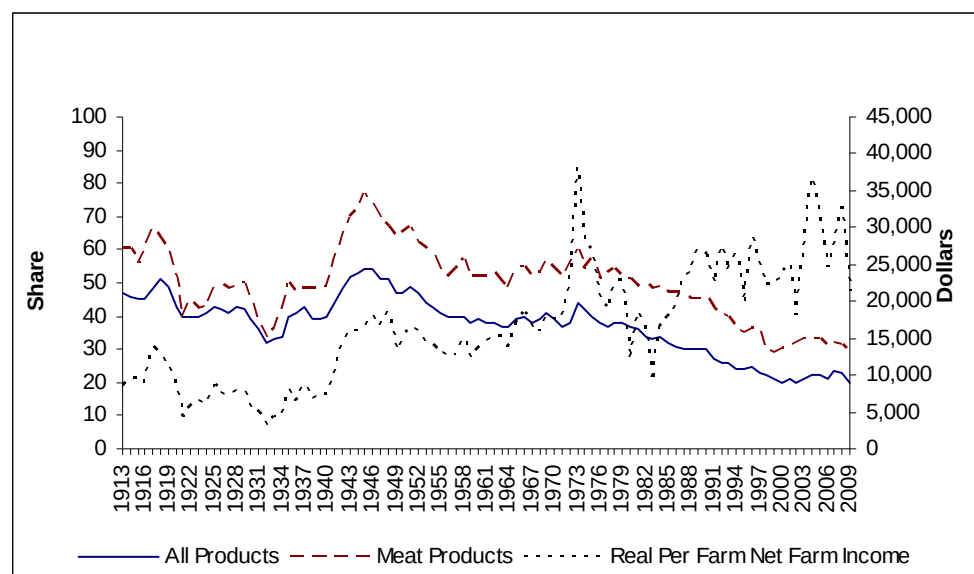
(Atchley, 1956; Tomek and Robinson, 1972). Nonetheless, FS statistics (and farm-retail marketing margins) continue to be mis-used by economists and policy-makers in judicial proceedings, legislative actions, and agricultural policy debates. The widespread mis-use of FS statistics is curious given that economic theory provides no support for their use as a proxy for producer well-being. In addition, the USDA clearly indicates that their farmer's share data "... do not measure farm profitability or income" (USDA ERS, 2008).

FS statistics are a product of the Agricultural Marketing Act of 1946. The Act directed the USDA to measure, analyze, and disseminate farm-to-retail price spread data (Elitzak, 1999). These data were presumed to be useful to consumers, producers, and policy-makers for evaluating the effects of changes in industry costs, profit margins, and productivity on food prices and the economic well-being of agricultural producers. An FS statistic for a specific commodity is readily calculated as:

$$(1) FS_i = [(P_{fi} * C_i)) - B_i] / P_{ri}$$

where P_{fi} is the farm-level price of commodity i , C_i is a commodity-specific conversion factor that

Figure 1: Farmer's-Share-Of-The-Retail-Dollar Statistic for All Agricultural Products, Meat Products, and Real (2000) Per Farm Net Farm Income, 1913-2009.



represents the amount of farm-level quantity needed to produce one unit of retail product, B_i is a commodity-specific by-product value, and P_{ri} is the retail-level price of commodity i . FS statistics are computed assuming fixed factor input proportions.

Figure 1 illustrates that between 1913 and 2009, the FS statistics for all U.S. agricultural commodities and for meat products have trended downward (Been, 1949; USDA, 2007). This downward trend has often been used as evidence of a general decline in the standard of living of agricultural producers. The FS statistic for meat products reached a peak of 74% in 1945, but was only 29% in 2009. Figure 1, however, also illustrates that over this same time period, real per farm net income has trended upward. Thus, FS statistics do not appear to be positively correlated with producer income, and therefore, cannot be reasonable indicators of producer well-being.

FS statistics and their counterparts, marketing margins, also provide little or no indication

of imperfect competition/marketing power in the food processing industry. For example, refined beet sugar is essentially the same product today as it was 75 years ago. During the 1960s, all beet sugar refineries were owned and operated by investor-owned firms. The FS statistic for sugar beet producers averaged 52% over those 10 years. Over the past 40 years, the ownership of sugar beet refineries has changed such that farmer-owned cooperatives currently control almost all refining capacity. Yet, the FS statistic for sugar beets has displayed a statistically significant downward trend and, in the past 10 years, has averaged 33%. In addition, although the U.S. sugar industry is highly protected by tariff-rate quotas, rivalry among sugar beet processing firms in the output market remains intense even as the farm-retail marketing margin has widened (Brester and Boland, 2004).

The relationship between changes in FS statistics and changes in producer well-being was evaluated by Brester, Marsh, and Atwood (2009). Their theoretical and empirical research clearly shows that changes in farm-level producer well-being (as

measured by producer surplus), marketing margins, and FS statistics depend upon supply and demand elasticities and the size and source of shocks to the marketing chain (Gardner, 1975; Marsh and Brester, 2004; Wohlgenant, 1989). That is, marketing margins are accounting residuals representing differences in prices between marketing levels. Such price differences exist (and change) because of the aggregate buying and selling behavior of firms who provide a wide variety of marketing services. Hence, marketing margins represent an arithmetic compilation of the costs of a broad range of economic activity that occurs between farm gates and consumer plates.

Brester, Marsh, and Atwood (2009) empirically demonstrate that FS statistics, and by construction, farm-to-retail marketing margins, are not reliable measures of changes in producer well-being given shocks to various economic factors. In the cattle and hog sectors, FS statistics and producer well-being are directly related for some shocks. For other shocks, they are inversely related. The relationship between FS statistics and producer well-being depends upon structural dynamics, the source of shocks, and relative demand and supply elasticities. In fact, little or no accurate information is conveyed by FS statistics. Consequently, these data should not be used for policy purposes. The results provide empirical support for Atchley's (1956) anecdotal comment:

"I think we can say that the farmer's best interests are not always served by increasing the

farmer's share of the consumer's dollar. If they were, then farmers would sell directly to consumers. But the marketing system which we have developed does the job cheaper than farmers can do it. If an added marketing service increases the market or the value of the final product more than the costs, farmers stand to benefit for the added service even though it may lower the farmer's share." (pp. 1578-1579).

We have empirically shown that this theoretic argument, made in 1956, remains relevant today.

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