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Successive Market Power and Contracts of Finished Products

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Successive Market Power and Contracts of Finished Products

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Introduction

1. Two characteristics of U.S. agricultural industries are rising horizontal concentration and increasing vertical coordination.

- The processing and retail stage of U.S. agriculture have become more and more concentrated in the past several decades. For example, the 4-firm concentration ratio (CR4) in beef packing has grown from 36 percent in 1980 to 84 percent in 2011. The national CR4 in food retailing has increased from 16.8 percent in 1992 to 35.5 percent in 2005 and the local CR4 levels in food retailing are even higher than the national level.
- Agricultural production and processing/marketing have become closely coordinated through the use of contracts and other non-cash methods. The fraction of U.S. agricultural production managed through contracts increased from 28 percent in 1991 to 39 percent in 2008 (MacDonald and Korb 2011).

2. The Concerns

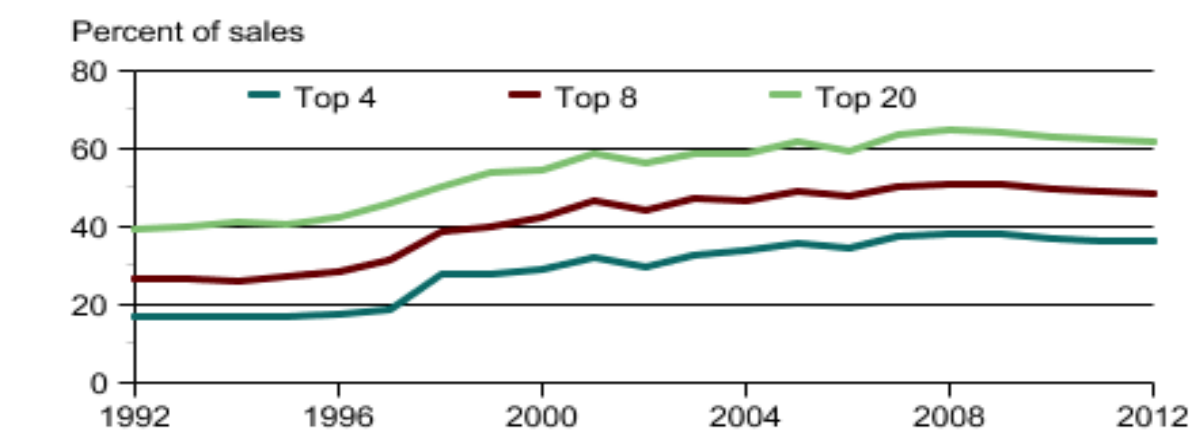
- The two trends have led to concerns about anticompetitive implications of market power in agriculture, especially buyer market power in agricultural procurements.
- However, there is a difference between the observation of high concentration and fewer buyers in agricultural markets and small estimates of price distortion due to buyer power in many empirical studies (e.g., 1% to 3% reduction in fed cattle price).
- Sexton (2013) and John, Saitone, and Sexton (2012) propose one explanation by indicating that buyers (processors) can refrain from exercising short-run oligopsony power because below-competitive returns due to using oligopsony power will lead to the exodus of resource from agricultural production, which is harmful to the long-run interests of buyers.

Objectives

- This paper focuses on another possible reason, contracts of finished products under successive market power in food market chain.
- Analyze how contracts of finished products can affect competition among processors in agricultural procurements and how they help explain the puzzling difference between the observation of high concentration and fewer buyers in agricultural markets and small empirical estimates of price distortion.

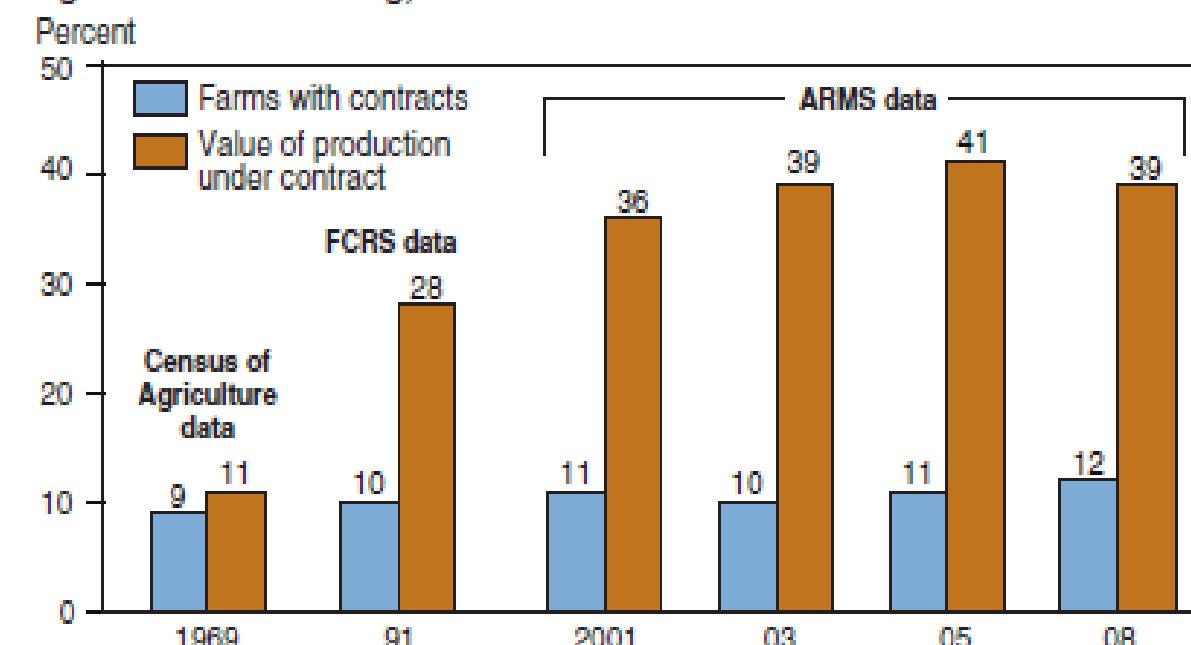
Top 4, 8, and 20 firms' share of U.S. grocery store sales, 1992-2012

The 2007-09 recession has dampened rising shares of sales in recent years



Source: USDA, ERS calculations using data from U.S. Census Bureau, Monthly Retail Trade Survey, company annual reports, and industry sources. Sales based on North American Industry Classification System (NAICS).

Agricultural contracting, 1969-2008



Sources: USDA, Economic Research Service using U.S. Census Bureau, Census of Agriculture, 1969; USDA's Farm Costs and Returns Survey, 1991; and USDA's Agricultural Resource Management Survey, 2001-2008.

The Model

- In the model, there are three stages along the market chain of an agricultural product: farm, wholesale, and retail.
 - (1) Processors have buyer (oligopsony) market power in farm markets, in which they procure agricultural raw material from farmers.
 - (2) Food retailers have oligopoly power in selling the finished products to consumers.
 - (3) Two competition scenarios in the wholesale market: oligopoly and oligopsony.
- When retailers have oligopsony power in the wholesale market, there is successive oligopsony power in two stages, farm and wholesale, of the food market chain. When processors have oligopoly power in the wholesale market, there is successive oligopoly power in two stages, wholesale and retail, of the food market chain.
- Processors and retailers transact finished products through contracts in the wholesale market. Non-linear pricing, either two-part tariffs or quantity discounts, is used in the contracts.
- We first solve for the market equilibria for the three stages of the market chain and find the reduction in farm price due to buyer power in farm markets. Then we compare this price reduction with the price distortion of buyer power predicted by a traditional model of oligopsony power in farm markets.
- We conduct this comparison for the two competition scenarios of the wholesale market to analyze the impact of contracts between processors and retailers on the magnitude of price distortion due to buyer power in farm markets.

Results

- When the wholesale market is either oligopsony or oligopoly, contracts of finished products between processors and retailers can reduce the magnitude of the price distortion of buyer power in farm markets.
- The economic intuition is that retailers have an incentive to use non-linear pricing in contracts with processors to solve double marginalization when retailers have oligopsony power in the wholesale market, then the non-linear pricing will increase processors' marginal benefit of procuring agricultural raw material, and processors will compete more aggressively in the farm markets so that the farm price distortion due to buyer power is smaller.
- Similar logic applies to the case when processors have oligopoly power in the wholesale market.

Conclusions

- With successive market power in food market chain, contracts between processors and retailers can actually promote competition in agricultural procurements and, thus reduce the magnitude of price distortion due to buyer power in agricultural procurements.
- Although concerns on the possible anticompetitive effects of most contracts exist, contracts between processors and retailers can promote competition and enhance social welfare.
- The pro-competitive effect of contracts between processors and retailers can help explain the perplexing difference between the observation of high concentration and less competition in agricultural markets and small empirical estimates of price distortion of buyer market power.