Effects of Alternative Marketing Arrangements on Spot Market Price Distribution in the U.S. Hog Market

Jong-Jin Kim

Korea Rural Economic Institute

Seoul, Korea

Email: jkim@krei.re.kr

Xiaoyong Zheng

Department of Agricultural and Resource Economics

North Carolina State University

Raleigh, NC 27695-8109

Email: xzheng@ncsu.edu

Selected Poster prepared for presentation at the Agricultural & Applied Economics Association's 2014 AAEA Annual Meeting, Minneapolis, MN, July 27-29, 2014.

Effects of Alternative Marketing Arrangements on Spot Market Price Distribution in the U.S. Hog Market

Jong-Jin Kim and Xiaoyong Zheng

Overview

Packers have relied more and more heavily on alternative marketing arrangements (AMAs) to satisfy their slaughter needs

As a result, spot market now only accounts for less than 5% of the transactions in the hog market

What are the effects of AMAs on spot market?

Research in the literature has shown

a. Effect of AMAs on spot market price level is mildly negative or ambiguous

b. AMAs increase spot market price volatility

We show that AMAs affect spot market price level through two channels rather than just one

a. direct: on price level as studied in the literature

b. indirect: affect spot market price volatility first and then volatility affects price level

Ignoring the indirect effect may lead biased estimates

Objectives

Propose a model that elucidates the two channels through which AMAs affect spot market price

Quantify both the direct and indirect effects of AMAs on spot market price level

Quantify both the short-run and long-run effects of AMAs on spot market price level

Data

Source: Mandatory Price Reports Data from USDA-AMS

Daily transaction price and volume data by marketing channel for 2002-2010

Methods

Theoretical Model

2 periods: quantity decisions are made in the 1st period and transactions happen in the 2nd

2 channels: spot market and AMAs

perfect competition among farmers

perfect competition among packers

Empirical Methods

GARCH in Mean model for spot market price time series:

price level equation: ADL-ARMA specification in which spot market volatility is a determinant

price volatility equation: standard GARCH specification

Results

The direct effect of AMAs on spot market price level is negative

The indirect effect of AMAs on spot market price level is positive:
AMAs increases spot market price volatility
Spot market price volatility increases spot market price level

The net effect of AMAs on spot market price level is negative

Due to the high serial correlation nature of the spot market price time series, the long-run effects are larger than previously estimated:

long-run direct effect: 1% increase in AMAs reduces spot market price by $5 per 100 carcass pounds

long-run indirect effect: 1% increase in AMAs increases spot market price by $1.75 per 100 carcass pounds

long-run net effect: 1% increase in AMAs reduces spot market price by $3.25 per 100 carcass pounds, which is about 6% of the average price in the sample period