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Introduction
Declining demand for fresh potatoes, high price volatility and returns that do not cover the cost of production caused Idaho potato growers to form a marketing cooperative in the fall of 2004.

United Fresh Potato Growers (http://www.unitedpotato.com)

Goals:
• to stabilize supply of fresh potatoes in Idaho
• to provide fair returns to potato growers

Capper-Volstead Act -
Agricultural producers are allowed to act collectively

United Fresh Potato Growers of Idaho – A cooperative formed to stabilize fresh potato supply and prices.
• The cooperative formed to combat low prices and high price volatility
• Founded in November 2004
• Represents 85% of fresh potato growers in Idaho
• Targets both production and marketing of fresh potatoes

United’s Supply Management Program
1) Potato acreage management program
• controls the number of acres of fresh potatoes planted
• The fresh potato acreage was reduced by 15% in Spring 2005 relative to the 2004 base
• Bid buy-down program
2) Marketing programs
• Potato flow control throughout a marketing year
• Limits the flow of potatoes to the market when prices are low
• Exchange of marketing information
• Secondary marketing strategies
• Divert excess supply of already produced potatoes

Research Objectives:
To evaluate the effectiveness of programs and strategies implemented by the United Fresh Potato Growers of Idaho – To answer the question: were the cooperative’s efforts successful?

Has the fresh potato price level and volatility changed since the cooperative began operations?

Empirical Model
ARCH(1) and GARCH (1,2) mean equation
\[ p_t = \psi_t + \psi_{t-1} + u_{t-1} + \gamma C_0 - \alpha p_t + \epsilon_t + \nu_t \]

ARCH (1) variance equation
\[ u_t^2 = \alpha_0 + \alpha_1 u_{t-1} + \eta C_0 - \beta p_t + \epsilon_t + \nu_t \]

GARCH (1,2) variance equation
\[ h_t = \gamma + \delta u_{t-1} + \eta u_{t-1}^2 + \mu C_0 - \omega p_t \]

Results of the ARCH/GARCH estimation

<table>
<thead>
<tr>
<th>Variables</th>
<th>Monthly Idaho Prices for Fresh Potatoes ($/50 pound carton)</th>
<th>Russet Burbank Idaho Weekly Shipping Point Prices ($/50 pound carton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price Level Equation</td>
<td>ARCH(1)</td>
<td>GARCH(1,2)</td>
</tr>
<tr>
<td>Estimated coefficient for the co-op binary variable</td>
<td>2.53* (2.24)</td>
<td>0.58* (2.68)</td>
</tr>
<tr>
<td>Price Variance Equation</td>
<td>-0.336* (-2.19)</td>
<td>0.001 (0.03)</td>
</tr>
</tbody>
</table>

Z statistics are in parentheses. * indicates significance at the 10% level using a two-sided Z-test.

Summary
Price Increases – Statistically significant in all categories
Variance Increase – Statistically significant for 80 count
Variance Decrease – Statistically significant for Monthly prices

Conclusions
United’s efforts have been successful in increasing prices paid to growers
Impacts on price variance are mixed and depend on the price series examined
The monthly Idaho price series, which more closely resembles the composite price that growers receive, showed an increase in price level and a decrease in price variance, indicating that potato growers are better off.