



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

One Decade After the Dairy Compact: The Response of Retail Fluid Milk Prices in New England

Jill Ann Fitzsimmons¹, Luca Cacchiareli², Eric Hoyt³

Tuscia University, Viterbo Italy², University of Massachusetts Amherst, Department of Resource Economics¹, Department of Economics³

Selected Poster prepared for presentation at the 2015 Agricultural & Applied Economics Association and Western Agricultural Economics Association Joint Annual Meeting, San Francisco, CA, July 26-28

Copyright 2015 by Fitzsimmons, Cacchiarelli, Hoyt. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

One Decade After the Dairy Compact

The Response of Retail Fluid Milk Prices in New England

Luca Cacchiareli¹, Jill Ann Fitzsimmons², Eric Hoyt³

Tuscia University, Viterbo Italy¹, University of Massachusetts Amherst, Department of Resource Economics², Department of Economics³

Northeast Dairy Compact

- Brief experiment in regional regulation from 1997-2001
- Created a price floor for the farm price for fluid milk
- Agreement between New England states, approved by Congress
- Sought to “maintain the cultural and economic welfare of dairy farmers, rural communities, and promote regional development in New England.”
- Managed by Northeast Dairy Commission
- “Focal point for tacit collusion in retail pricing behavior”¹ ?
- Are retail price increases and decreases symmetric? Do retail prices adjust at the same rate and magnitude in response to a change in wholesale prices?

Data & Model Description

- Monthly time series data for New England, Oct. 2001 to Oct. 2011
- Retail fluid whole milk prices for Boston, MA and Hartford, CT from AMS
- Class I farm price of milk for Northeast Marketing Area from AMS
- Milk marketing cost indices, incl. labor, transportation, energy, and packaging

Model Specification

$$R_t = \delta_0 t + \sum_{i=0}^2 \pi_i^R FR_{t-i} + \sum_{i=0}^2 \pi_i^F FF_{t-i} + \beta P_t + e_t$$

$$FR_t = \sum_{i=0}^{t-2} \text{Max}(\Delta F_{t-i}, 0) \quad H_0 : \sum_{i=0}^2 \pi_i^R = \sum_{i=0}^2 \pi_i^F$$

$$FF_t = \sum_{i=0}^{t-2} \text{Min}(\Delta F_{t-i}, 0) \quad H_a : \sum_{i=0}^2 \pi_i^R \neq \sum_{i=0}^2 \pi_i^F$$

Conclusions

- We see a continuation of the retailer pricing behavior discovered by Lass in 2005, in which retailers, in the first and current month, respond to rising farm prices by rapidly increasing retail milk prices.
- In the Post-Compact period a new pricing development appears to have emerged, in which retailers in both Boston and Hartford respond to farm price decreases in the final lagged period with significant retail price decreases.
- In fact those decreases are so great in Boston, that long-run price asymmetry results by means of a lowering of retail price below the original value after equivalent farm price increases and decreases over three months.
- While during the Compact period, Lass found that long-run asymmetry was statistically significant for both Boston and Hartford and resulted in net increases in retail prices, in the Post-Compact decade we find that long-run asymmetry is significant only in Boston, and, as has already been stressed, it manifests itself as a negative net change in retail price.

Results

Table 1. Estimated Boston Post-Compact Retail Milk Price Models

	Pre-Compact [†]		Compact [†]		Post-Compact	
	Estimate	t _{calc}	Estimate	t _{calc}	Estimate	t _{calc}
Rising Farm Price Coefficients						
Current Period	3.672	3.52*	5.042	7.58*	40.190	4.47*
One Month Lag	0.330	0.28	-0.193	-0.28	-12.570	-0.9
Two Month Lag	-0.218	-0.22	0.314	0.46	-9.680	-1.05
Falling Farm Price Coefficients						
Current Period	0.469	0.91	2.828	4.36*	3.580	0.43
One Month Lag	0.467	0.84	-1.309	-2.04*	7.190	0.61
Two Month Lag	-0.086	-0.16	0.711	1.24	17.620	2.18*
Marketing Cost Index	0.052	0.38	2.690	2.57*	0.312	4.27*
Trend	-0.652	-1.76*	-0.410	-4.9*	0.250	1.4
Aggregate Lagged Effects						
Sum of Rising Coefficients	3.783	3.34*	5.162	7.96*	17.940	2.61*
Sum of Falling Coefficients	0.850	1.23	2.230	3.66*	28.390	11.94*
Difference	2.933	1.93*	2.933	5.08*	-10.450	7.13*
Sample Size	90		51		121	

* Statistically different from zero at the 5% level of significance.

† Pre-Compact and Compact estimates for Boston are from Lass 2005.

Table 2. Estimated Hartford Post-Compact Retail Milk Price Models

	Pre-Compact [†]		Compact [†]		Post-Compact	
	Estimate	t _{calc}	Estimate	t _{calc}	Estimate	t _{calc}
Rising Farm Price Coefficients						
Current Period	2.165	3.17*	3.462	5.15*	38.660	3.32*
One Month Lag	-0.308	-0.42	0.995	1.43	9.490	0.52
Two Month Lag	0.981	1.52	-0.187	-0.27	-9.790	-0.82
Falling Farm Price Coefficients						
Current Period	0.586	1.74*	1.672	2.55*	-8.090	-0.75
One Month Lag	0.079	0.23	0.400	0.63	13.380	0.88
Two Month Lag	0.292	0.84	0.676	1.17	32.930	3.16*
Marketing Cost Index	0.075	0.86	0.402	3.65*	0.056	3.65*
Trend	-0.386	-1.42	-0.340	3.8*	0.054	0.23
Aggregate Lagged Effects						
Sum of Rising Coefficients	2.837	3.46*	4.300	6.34*	38.360	16.22*
Sum of Falling Coefficients	0.957	1.91*	2.748	4.31*	38.220	20.22*
Difference	1.880	1.69*	1.552	2.52*	0.140	0.22
Sample Size	90		15		121	

* Statistically different from zero at the 5% level of significance.

† Pre-Compact and Compact estimates for Hartford are from Lass 2005.

References

- Cotterill, Ronald W. 2005. The impact of the northeast dairy compact on new england consumers: A report from the milk policy wars. *Agribusiness* 21 (4): 455-71.
- Cotterill, R.W., and A. W. Franklin. “The public interest and private economic power: A case study of the Northeast Dairy Compact. *Food Marketing Policy Center*. Monograph No. 1. (2001) University of Connecticut, Storrs, CT.
- Kinnucan, H.W., and O.D. Forker. “Asymmetry in farm-retail price transmission for major dairy products.” *American Journal of Agricultural Economics* 69 (1987): 285-292.
- Lass, D.A., M. Adanu, and P.G. Allen. “Impacts of the Northeast Dairy Compact on New England retail prices.” *Agricultural and Resource Economics* 30. (2001): 83-92. Web 5 Mar. 2012.
- Lass, Dan. “Asymmetric Response of Retail Milk Prices in the Northeast Revisited.” *Agribusiness* 21. 4 (2005): 493-508. Web. 5 Mar. 2012.