Henry A. Wallace Center for
Agricultural & Environmental Policy

The Effect of Laws That Foster Agricultural Bargaining

The Case of Apple Growers in Michigan and New York State

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Formerly the Henry A. Wallace Institute for Alternative Agriculture, established in 1983, the Wallace Center joined Winrock International in 2000. The Center is named for Henry A. Wallace, who served as U.S. Secretary of Agriculture and Vice President during the Franklin D. Roosevelt administration. A leading advocate for conservation and sustainable agricultural practices, Henry A. Wallace worked to build a strong farm economy while protecting the nation's natural resources.

Summary

In 1967, the U.S. Congress passed the Agricultural Fair Practices Act (AFPA) to assert the right of farmers to form cooperative marketing associations and market their products collectively without discrimination from handlers. Since then, however, because of weaknesses in the federal law, some states have adopted laws to strengthen cooperative marketing rights. Michigan has a particularly strong state cooperative bargaining law that requires processors and other buyers to negotiate with growers' associations and resolve stalled negotiations through mediation and/or arbitration. We conducted a study to compare the marketing experiences of apple growers in Michigan and New York State (which does not have a state bargaining law) in order to systematically assess the impact of cooperative marketing on the welfare of growers. In addition to comparing prices received by producers from 1969 to 2001, we also conducted a mail survey of all known apple growers in both states, which contained questions about their perceptions of the apple industry and their prospects for the future.

The histories of the New York and Michigan apple industries indicate that state legislation that protects growers' ability to organize is essential for establishing viable bargaining cooperatives. It is also clear that the presence of a bargaining cooperative has enhanced the welfare of Michigan growers, especially members of Michigan's bargaining association, the Michigan Agricultural Cooperative Marketing Association (MACMA). Comparison of apple prices in Michigan, New York, and the U.S. as a whole from 1969 to 2001 showed that Michigan growers received higher prices for their apples throughout most of this period. However, the price benefit appears to be shrinking. Apple growers interviewed and surveyed for this study assign blame for falling U.S. apple prices to imported apples and apple concentrate from China. The results of our mail survey indicate that members of Michigan's bargaining association tend to be more satisfied than non-members. Bargaining association members appear to reap substantial benefits from their membership in the bargaining cooperative. These include having input into contract terms and public policy that affects them, as well as finding marketing assistance if needed. We conclude that collective bargaining is an important part of sustaining agriculture over the long-term, but it is not by itself sufficient to enable growers to maintain their operations in the face of steep international competition.

Introduction

Cooperative bargaining is thought to be one way farmers can improve their economic power when faced with concentration and vertical integration among buyers of agricultural products (Brandow, 1969; Bunje, 1980; Clodius, 1957; Frederick, 1990; Garoyan and Thor, 1978; Helmberger and Hoos, 1965; Hoos, 1962; Iskow and Sexton, 1992). Studies have long assumed that as the processing and other purchasing sectors of raw farm products consolidated and vertically integrated, farmers would form or join bargaining associations. Bargaining associations provide farmers with a tool for setting minimum prices for their products, negotiating with companies having investments in other countries, bargaining for beneficial trade agreements, gaining more detailed market and price information, and otherwise increasing their economic power (Clodius, 1957; Lang, 1994; Levins, 2001).

One of the strongest benefits of agricultural bargaining is negotiating favorable contract terms (Brandow, 1969; Bunje, 1980; Helmberger and Hoose, 1965; Hoos, 1962). According to Bunje (1980, p. 105), "the fading open assembly and free markets are being replaced by a system of contract farming. Contract farming lends itself to group association by producers for negotiating contract terms." In the future, he predicted, "contractual agriculture will be bargained agriculture." Echoing Bunje's words, Randall Torgerson, Deputy Administrator of the Rural Business-Cooperative Service of the U.S. Department of Agriculture (USDA), stated in 1997 that "it is likely that the need for negotiated pricing will increase in dealing with production and marketing of identity-preserved products and increased use of contracting for production and services in both the crop and livestock sectors" (Torgerson, 1998, p. 1).

Nearly twenty years after Bunje's observation, contracting in U.S. agriculture has increased (Table 1), but the development and strengthening of cooperative bargaining associations has not kept pace with changes in the nation's agricultural sector. In 1978 Lang identified 67 active associations in 13 states. Fourteen years later, Iskow and Sexton identified 36 associations in 9 states. There are currently about 19 agricultural bargaining associations active in 9 states (USDA-RBS, 2001).

Table 1: Contracting in U.S. Agriculture, 1978 and 1997

Year	Number of farms with contracts	Percentage of farms with contracts	Percentage of total value of commodities produced under contract
1978	43,665	1.9	10
1997	227,481	11.1	31.2

Source: Banker and Perry, 1999; USDA-ERS, 1996

While a variety of factors contribute to the ability of bargaining associations to form and to bargain effectively, many authors contend that the most critical factor is strong laws that support the right of farmers to collectively bargain, with meaningful sanctions for violations (Iskow and Sexton, 1992; Marcus and Frederick, 1994; Torgerson, 1997). These laws are necessary in order to prohibit major buyers from engaging in anti-organizing tactics when faced with farmers organizing. These tactics have historically included failing to renew contracts of farmers who joined bargaining associations, requiring farmers to resign from an association as a part of their contract, offering 'sweetheart deals' to farmers who withdrew from associations, and threatening farmers who attended organizing meetings (Bunje, 1980).

The Agricultural Fair Practices Act of 1967 (AFPA or "the Act") was passed by Congress in direct response to these anti-organizing tactics. It was a landmark piece of legislation in that it explicitly supported the concept of collective action by farmers. The AFPA states that there is a need for farmers to be free to join together voluntarily in cooperative organizations, and makes this the policy of the U.S. government (Bunje, 1980). Under AFPA it is unlawful for any handler knowingly to:

1. coerce a producer to join or refrain from joining an association or refuse to deal with a producer because he/she has joined one;
2. discriminate against a producer with respect to price quantity because of his/her membership in an association;

3. coerce a producer to breach or terminate his/her association membership;
4. offer an inducement to a producer to cease being an association member or to refuse to join;
5. make false reports about an association; or
6. conspire with another to commit any of the above (Frederick, 1990).

However, it is argued that flaws in AFPA have actually hindered the formation of bargaining associations (Frederick, 1993). The following disclaimer clause of the Act is particularly problematic:

> "Nothing in this chapter shall prevent handlers and producers from selecting their customers and suppliers for any reason other than a producers' membership in or contract with an association or producers, nor require a handler to deal with an association of producers." (7 U.S.C. § 2304).

This language allows buyers to refuse to have meaningful negotiations with bargaining associations—probably the most serious problem faced by bargaining cooperatives. In addition, processors have used a federal pre-emption clause in AFPA to challenge state laws that require good faith negotiations and binding arbitration (Frederick, 1993; Marcus and Frederick, 1994).

Other provisions further weaken the ability of AFPA to support the formation of bargaining associations. The federal law is notable for its lack of enforcement authority for violations. Injured parties are given the right to sue in U.S. District Court or to file a complaint with the Secretary of Agriculture who could file suit through the Attorney General. However, litigation is not an attractive option for most bargaining associations; in addition to the expense, producers prefer to have cordial relations with their buyers because there are few processors to choose from (Marcus and Frederick, 1994). Also, processors are generally in a far better position than the cooperative to survive a battle of attrition. As a result, producers have sought to bring their complaints to USDA rather than file suit themselves. However, enforcement of the Act through USDA has been unsatisfactory, largely due to limited personnel and a lack of funding at the agency to pursue complaints, unwillingness on the part of the Attorney General to take action, and difficulty in finding producers who are willing to testify against a processor, for fear of reprisals (Marcus and Frederick, 1994). In addition, the legislated penalties for violating AFPA are so low that buyers have little incentive to comply with the law. As a result, from the time of enactment in 1967 until 1989, only approximately 26 complaints had been filed under AFPA, and only approximately 6 resulted in favorable outcomes for the growers or their associations (Bunje, 1988; Frederick, 1990).

In the 30 years since the passage of the Act there have been numerous attempts to change the federal legislation to substantially improve the climate for cooperative bargaining associations (Frederick, 1990). Some recommended changes include (Bunje, 1980; Frederick, 1990; Frederick, 1993):

a. repeal of the disclaimer clause
b. provisions for fee deductions
c. requirements for negotiators to bargain in good faith

d. provisions for mediation or arbitration
e. provisions for qualifying or otherwise accrediting a bargaining association
f. provisions for defining a bargaining unit and providing for the designation or selection of an exclusive agent for the bargaining unit
g. adoption of "agency shop" language to eliminate "free rider" problems
h. protective rules and a means for promulgating and administering them
i. authority for USDA to assess civil penalties for violations of the Act
j. limit on federal pre-emption
k. inclusion of language to cover contract production in the poultry and livestock industry (Morrison, 1995)

To date, attempts to implement these recommendations have been unsuccessful.

Nine states have adopted state laws that are stronger than the federal law, and it appears to be no accident that these states are mainly those with agricultural bargaining associations. Of the 19 active bargaining associations identified, 16 were in states with laws regarding agricultural bargaining associations (USDA-RBS, 2001). Most of these state laws require 'good faith' bargaining between the handlers and associations, and some include dispute resolution mechanisms, such as conciliation, mediation, or arbitration (Frederick, 1993).

Michigan State's law, in particular, is often considered a prototype of what improved federal legislation should look like. Unlike the federal law, it provides for a specified period of time during which negotiations must take place and it deals with impasse problems by requiring mediation or arbitration. Arbitrators under Michigan law must choose one of the last offers presented by the parties. The result is that both sides tend to make their final offers sufficiently reasonable to be persuasive to the chairperson (Bunje, 1980).

It has been argued that the formation of cooperative bargaining associations with the power to engage in contract negotiations with processors should result in more equitable economic balance in agricultural markets and would result in a more stable and prosperous farm sector (Frederick, 1993). Anecdotally this would seem to be the case. A 1999 *Successful Farming* magazine article credited the Michigan Agricultural Cooperative Marketing Association (MACMA) with keeping the prices of processing apples and asparagus in Michigan above national averages (Looker, 1999). Yet there have been few studies that have attempted to quantify the potential difference in producer welfare made possible by having the power to bargain (Garoyan and Thor, 1978; Helmberger and Hoos, 1965; Hoos, 1962). Furthermore, most studies on agricultural bargaining are outdated; the most recent was undertaken in 1992 and prior studies were done in the 1970s.

The conditions theorized to support the formation of successful cooperative bargaining associations currently exist, i.e., the agricultural sector is seeing declining cash markets for commodities and increasing concentration in the processing sector. In addition, policy makers continue to introduce legislation that would strengthen and protect producer-organizing activity. Therefore, research is needed to determine the economic and social impacts of agricultural bargaining associations in today's market. Determining the economic and social impacts of current federal legislation on the farm sector, by comparing them to the farm sector impacts of

enhanced state legislation on cooperative bargaining, provides a starting point for future debates around changes in federal policy.

The primary ways to measure the impacts of bargaining associations are to (1) look at their ability to command higher prices for their members than would be expected in the absence of an association; and (2) examine their ability to command better fringe benefits for their members, such as more uniform or more favorable contract terms. Because analyses of the economic and social benefits of cooperative agricultural bargaining associations are extremely outdated, this study provides insight into the economic and social benefits provided by bargaining associations and a strong legal framework of support in today's farm sector.

Methodology

In order to provide a starting point for understanding the potential impacts of strengthened cooperative bargaining laws at the federal level, this study examines the experiences of two states, one with a strengthened state law that incorporates many of the demands included in recently introduced federal legislation[1] and one without any law beyond AFPA. To test the hypothesis that the presence of bargaining power increases producer welfare, we analyzed price data using a method developed by Helmberger and Hoos (1965) to look at the price effects of bargaining associations. To examine the fringe benefits that bargaining power provides for contracts, negotiations, and producer attitude, we conducted a survey of apple farmers in Michigan and New York. These states and this commodity were selected for several reasons:

1. Michigan has a strong law in support of bargaining associations that requires binding arbitration and good faith bargaining. New York has no such law.

2. Michigan has a functioning bargaining cooperative for apples while New York has none (a previously-formed cooperative in New York is now defunct).

3. Apples are an important crop in both states. Michigan ranks number three in the U.S. in apple production, while New York ranks number two. Both states process a significant portion of their apple harvest and use similar processing methods (i.e., canning, juice, freezing).

4. The apple commodity system fits the criteria outlined by Iskow and Sexton (1992) for potentially successful associations: limited ability for short-term entry into the industry (perennial fruit crop) and a concentrated processing sector. In addition, apple farmers in Michigan and New York share processors. This reduces the chance that New York farmers may fear extreme reprisals from processors should they form a bargaining association, as these processors have demonstrated their willingness to work with a bargaining association in Michigan.

[1] *Family Farmer Cooperative Marketing Amendments Act of 2001*, 107th Congress, 1st session, H.R. 230.

Price Comparison Methods

Helmberger and Hoos (1965), the most comprehensive study to date on the effects of agricultural bargaining cooperatives, developed several different statistical tests to measure the differences in price due to an agricultural bargaining association. One approach they thought might be useful for determining the degree to which bargaining associations influenced prices was referred to as an "interperiod-intermarket analysis." This approach involves comparisons over two periods of time between the prices received by growers in one market and the prices received by growers in another market, where a bargaining association exists in the second period for only one of the markets. We duplicated Helmberger and Hoos's test as closely as possible, although limited by the lack of consistent pre-1969 data, by comparing Michigan and New York price data. Helmberger and Hoos recommended the use of an intermarket comparison between "two markets that are geographically distinct but with reference to the same commodity," making Michigan and New York appropriate states for this test.

We collected price data on Michigan and New York processed apples, delineated by processing type, from 1969 to 2001 (USDA 1977; 1980; 1985; 1990; 1995; 1998; 1999; 2000; 2001; 2002). We were unable to use pre-1969 data because the manner in which it was collected was not consistent with later years and did not distinguish between overall price received for apples and prices received for fresh versus processed apples. We converted all prices into January 2002 dollars by making the national Consumer Price Index (CPI) utilize January 2002 as its reference point and then applying the CPI to all price data (U.S. Department of Labor, 2002). The resulting information helped to determine the effect of a strengthened state bargaining law on prices received by growers.

Although increasing farmer prices is the primary stated goal of most bargaining associations surveyed (Iskow and Sexton 1992; Lang, 1978), using price as a measure of success has some theoretical problems. Bargaining associations cannot control supply of a given commodity, and therefore, according to economic theory, they are not expected to greatly increase prices for their members over the long run (Helmberger and Hoos, 1965; Hoos, 1962). So while tests conducted in the 1960s and 1970s showed some, but not drastic, price benefits (Garoyan and Thor, 1978; Helmberger and Hoos, 1965), and our study also provides information on price impacts, fringe benefits are also an important service of bargaining associations.

Fringe benefits, particularly the degree of uniformity and quality of contract terms, are in many ways the most important measure of success of bargaining associations. Most authors agree that it is in the area of fringe benefits that bargaining cooperatives offer the most advantage to their members over the long run, particularly in concentrated markets. Yet because fringe benefits are not easily quantifiable, they have not been extensively studied (Brandow, 1969; Helmberger and Hoos, 1965; Hoos, 1962).

To gauge potential fringe benefits received by farmers, we surveyed apple farmers in Michigan and New York State to distinguish differences in the welfare and outlook of apple farmers that could be attributed to the presence or absence of the state law protecting bargaining associations (see Appendix A). We surveyed three groups of farmers: (1) farmers in Michigan in the bargaining association; (2) farmers in Michigan not in the bargaining association; and (3) farmers in New York State.

Since many factors, such as farm size, farmer age, and a farmer's relationship with the surrounding community, play into a farmer's perceptions about his/her welfare and likely future in farming, we asked a set of control questions in the survey to see if there was any significant difference among the three farmer groups on what was assumed to be a set of common factors. These questions included: size of the farm, varieties produced, percentage processed (average), age of farmer, number of years in apple farming, and education level.

Because an earlier study (Babb et al., 1969) suggested that attitudes towards cooperative bargaining and grower and processor perceptions influenced the outcome of negotiations, some of our survey questions were meant to gauge attitudes. We asked growers a set of questions about (1) their perception of the future of apple farming in their state, (2) whether or not they have been a member of a bargaining association, (3) their perception of the power that bargaining associations have in their state and to what extent the law influences that power, (4) their relationship with their processors, and (5) their general contract terms. We also asked apple growers about the number of processors to which they believed they had access.

Survey Methods

A total of 1,169 short mail surveys were sent to all known apple growers in Michigan (482 surveys) and New York (687 surveys). The New York State Horticultural Society and the Michigan Agricultural Cooperative Marketing Association (MACMA) provided the names and addresses of apple growers. The first survey mailing was followed a week later by a reminder card. Two weeks after the initial mailing, a second survey was sent to non-respondents.

Of the 1,169 surveys mailed, 47 were undeliverable and returned by the U.S. Postal Service and 122 were returned uncompleted by growers who had gone out of business or were not selling apples to processors. A total of 453 valid surveys were returned, representing 46% of the remaining 1,000 surveys. New York growers returned 238 surveys, or 42% of the remaining 589, and Michigan growers returned 215, or 52% of the remaining 411. About two-thirds of the Michigan respondents (143) are members of MACMA.

Results

Price Comparisons Results

In general, Michigan prices for processed apples ran above prices in other states, but over the years the prices have tended to converge (Figure 1a-d). This makes sense as the market concentrates and imported apples, especially from China, become increasingly important. Any price effect from MACMA seems to be eroding. Perhaps the more interesting story is the falling real prices for producers across the board.

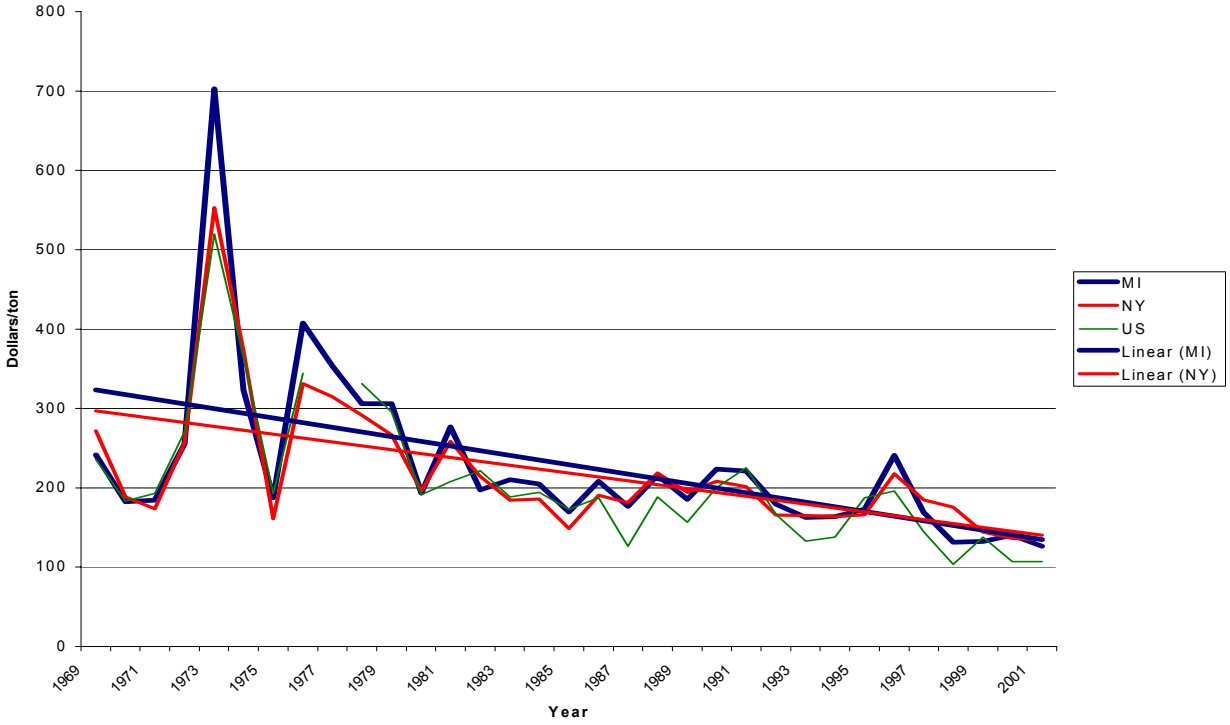

Figure 1a. Prices for all processed apples (those canned, frozen, and/or used for juices) in MI, NY, and the U.S. Prices are adjusted to 2002 prices. Trend lines indicate that prices were historically higher for MI apples, but that prices have converged over time. Breaks in the lines indicate that no data were available for that time period.

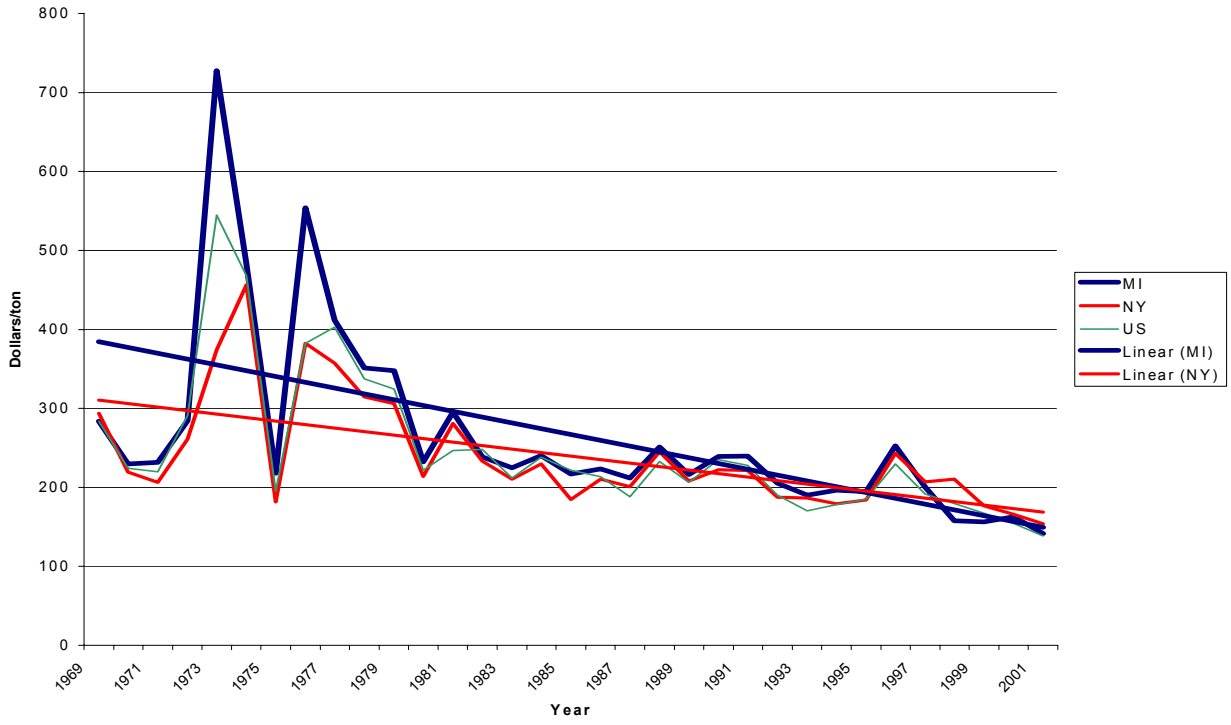

Figure 1b. Prices for canned apples in MI, NY, and the U.S. Prices are adjusted to 2002 prices. Trend lines indicate that prices were historically higher for MI apples, but that prices have largely converged over time.

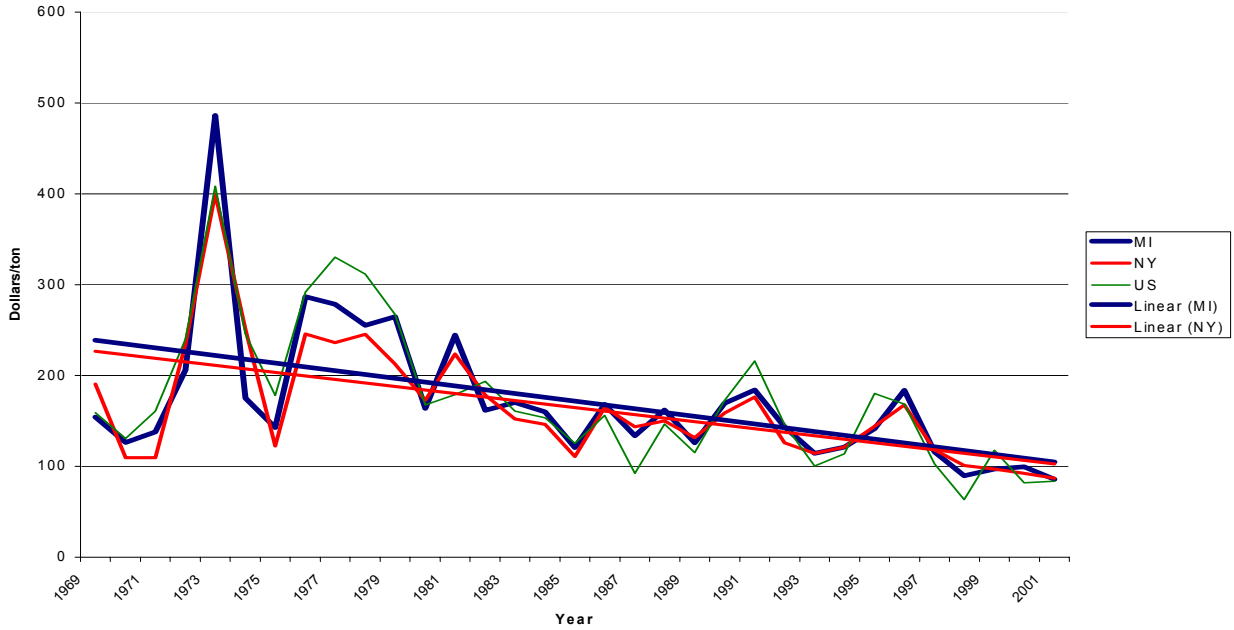

Figure 1c. Prices for juice apples in MI, NY, and the U.S. Prices are adjusted to 2002 prices. Trend lines indicate that prices were historically higher for MI apples, but prices have converged over time.

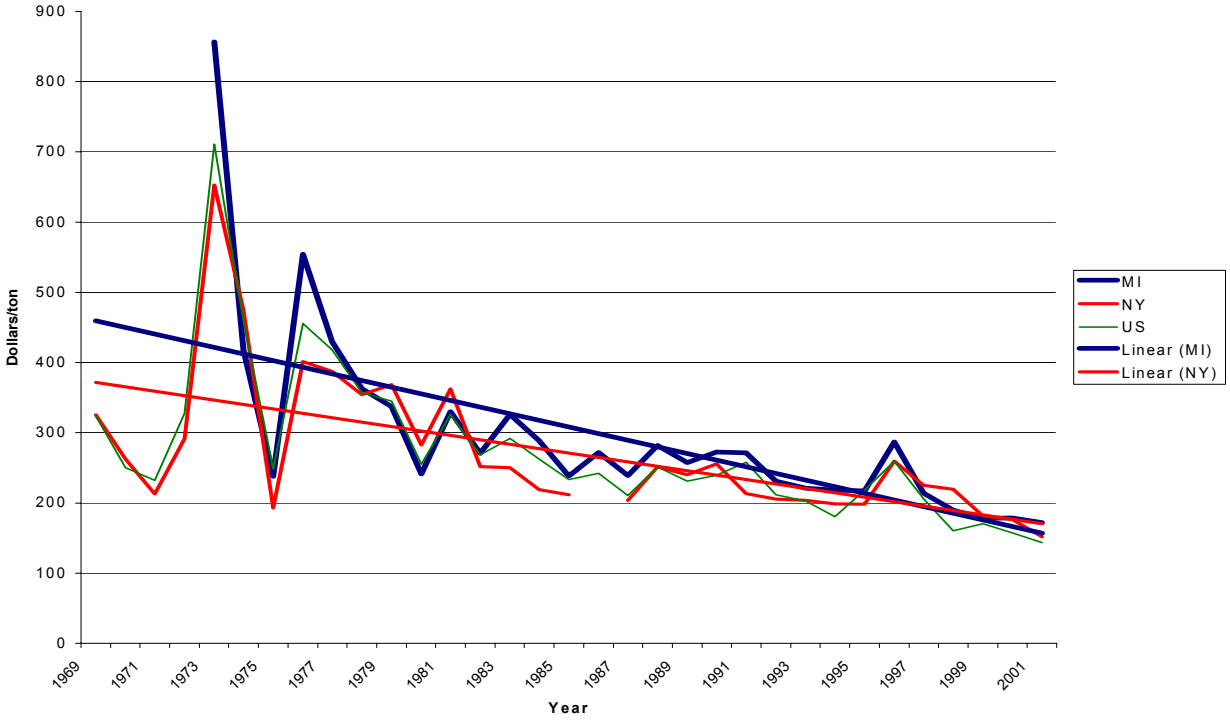

Figure 1d. Prices for frozen apples in MI, NY, and the U.S. Prices are adjusted to 2002 prices. Trend lines indicate that prices were historically higher for MI apples, but that prices have converged over time.

Survey Results

A copy of the survey is included in Appendix A. Appendix B is a table of the survey results comparing MACMA growers with Michigan non-MACMA growers and New York growers. This comparison was made to discern whether differences among growers are due to geographic distance or to membership in the collective bargaining unit. Although both farm structure and attitudinal questions are included in Appendix B, for the purposes of this summary we concentrate on the differences in attitude and perceptions of the three grower groups. If the Michigan non-MACMA growers and the New York growers tend to answer attitudinal and perception questions more similarly to each other than to MACMA growers, we can assume that membership in the collective bargaining unit is having an effect.

Considering some of the descriptive statistics, in general, MACMA growers were more likely to believe they had input into the prices received for their processed apple crop. For this group, 26% either agreed or strongly agreed with the statement. Only 7% of Michigan non-MACMA and 8% of New York growers agreed or strongly agreed with the statement. In addition, 18% of MACMA growers, 10% of Michigan non-MACMA growers, and 8% of New York growers agreed or strongly agreed that they had input into the terms of trade for their processed apple crop. Clearly, MACMA growers perceived they had some input into important aspects of the processed apple contracts.

MACMA growers were also more likely to believe they had input into public policy that might affect them. Almost 30% of MACMA growers agreed or strongly agreed with the statement that

they had input into such state government policies. Less than 20% of the Michigan non-MACMA growers and about 25% of New York growers agreed with the statement. Regarding input into federal policies, 22% of MACMA growers, 17% of Michigan non-MACMA growers, and 14% of New York growers at least agreed that they had input. MACMA growers were also more likely than the other two grower groups to at least agree that they were generally satisfied with their marketing arrangements.

Other potentially important differences include:

- MACMA growers were more likely to desire a new federal law that requires processing firms to bargain with accredited grower bargaining cooperatives or associations. However, 49% of Michigan non-MACMA and 56% of New York growers also at least agreed with the statement.

- MACMA growers were much more likely to agree or strongly agree with the statement that they could find marketing assistance if they needed it.

- MACMA growers were more likely to agree or strongly agree that grower bargaining units raise prices for all growers. However, more than 50% of the growers in the other two groups also at least agreed with this statement.

To further investigate the potential impact of membership in MACMA on attitudes and perceptions, we constructed a 'satisfaction' index from six survey items. These six items were:

- I have input into prices received for my processed apple crop.

- I have input into terms of trade for my processed apple crop.

- I have input into state government policies and programs that might affect my operation.

- I have input into federal government policies and programs that might affect my operation.

- I am generally satisfied with the marketing arrangements for my processed apple crop.

- If I need it, I can get assistance in finding a 'home' or market outlet for my processed apple crop.

We performed a reliability analysis to determine if these six items measured a single construct that we label 'satisfaction.' The analysis resulted in a Cronbach's alpha score of 0.77. Scores above 0.70 are generally considered to indicate that the scale is measuring a single construct.

The satisfaction scores were included in an Ordinary Least Squares Regression (OLS) analysis. Regression is a statistical technique that enables researchers to consider relationships between two variables after accounting for the effects of other factors. For this analysis, we investigated

whether MACMA members were more likely to have higher satisfaction scores even after taking into account the following characteristics:

1. The state in which the grower operates (0 = NY; 1 = MI).

2. Gross processed apple sales volume in bushels (1 = 10,000 or less; 2 = 10,001 to 20,000; 3 = 20,001 to 40,000; 4 = 40,001 to 60,000; 5 = 60,001 to 80,000; 6 = 80,001 to 100,000; 7 = 100,001 to 200,000; 8 = 200,001 to 300,000; 9 = 300,001 to 500,000; 10 = 500,001 to 750,000; 11 = 750,001 to 1 million; 12 = more than 1 million).

3. Number of years growing apples (1 = 15 years or less; 2 = 16–30 years; 3 = more than 30 years: categories were used since some operators wrote the number of years the family had grown apples).

4. The number of processing firms serving as potential buyers for the apple crop, from which the grower can choose.

5. Percentage of the farm's apple production sold on the processed market.

6. How often the grower sells to a processing firm without an agreed-upon price (1 = often; 2 = sometimes; 3 = seldom or never).

7. The percentage of the grower's fresh market apples that were packing house culls.

8. Whether the grower owns enough stock in a processing firm to meet all his/her processed apple needs (0 = no; 1 = yes).

By "controlling" on these eight farm and farmer characteristics, we can be more confident that any relationship we measure between membership in MACMA and 'satisfaction' is genuine.

Means of the characteristics or variables are presented in Table 2. The results from the OLS regression are presented in Table 3. The 'satisfaction' scale is coded such that lower scores indicate higher levels of satisfaction. However, for the purposes of this report, we reversed the signs of the coefficients such that a positive sign indicates a positive relationship with grower 'satisfaction.'

The OLS results indicate that membership in MACMA has a significant positive effect on 'satisfaction,' holding the other independent variables constant. Other factors that are significantly (p value ≤ 0.05) related to 'satisfaction' include higher numbers of processing firms available as buyers, lower percentages of the apple crop sold as processed apples, fewer times selling to processing firms without an agreed-upon price, lower percentage of the fresh apple crop from packing house culls, and owning enough stock in an apple processing firm to meet a grower's marketing needs.

The results indicate that membership in MACMA brings with it more 'satisfaction' as measured by the scale variables. Specifically, (1) feeling generally satisfied with marketing arrangements,

(2) being able to receive help in finding apple markets, and (3) feeling that one has input into contract terms and price, as well as input into state and federal policies, are associated with membership in MACMA. These results are not surprising since MACMA actively lobbies on behalf of its member growers, represents them in contract negotiations with processors, and maintains a marketing desk that will find outlets for members' apples as needed. The importance of the findings is that the members surveyed realize such efforts are being made on their behalf, and their perceptions differ from growers not in the organization.

Table 2: Mean and Standard Deviation of Selected Variables

Variable	Mean	Std. Deviation
Member of collective bargaining unit (0 = no; 1 = yes)	0.31	0.46
State (0 = NY; 1 = MI)	0.49	0.50
Gross processed apple sales volume (bushels)	4.46	2.50
Number of years growing apples	2.27	0.69
Number of processing firms	3.57	2.31
Percentage sold on processed market	58.32	29.80
Sells to processing firm without agreed-upon price (1 = often; 2 = sometimes; 3 = seldom or never)	2.23	0.81
Percentage packing house culls	18.32	15.73
Owns enough stock to meet needs (0 = no; 1 = yes)	0.11	0.31

Table 3: OLS Results with 'Satisfaction' Dependent Variable

Variable	Standardized Coefficient	Significance
Member of collective bargaining unit	.225	.000
State	.098	.118
Gross processed apple sales volume	.077	.092
Number of years growing apples	–.077	.064
Number of processing firms	.111	.012
Percentage sold on processed market	–.102	.024
Sells to processing firm without agreed-upon price	.245	.000
Percentage packing house culls	–.149	.001
Owns enough stock to meet needs	.096	.029

Adj. R square = 0.21

Conclusion

The histories of the New York and Michigan apple industries indicate that state legislation with strong protections for growers to organize is essential for establishing viable bargaining cooperatives. It is also clear that the presence of a bargaining cooperative has enhanced the welfare of Michigan growers, especially MACMA members.

Comparisons of apple prices in Michigan, New York, and the U.S. as a whole from 1969 to 2002 showed that Michigan growers received higher prices for their apples through most of this period. The price benefit appears to be shrinking, however. Apple growers interviewed and surveyed for this study assign blame for falling U.S. apple prices to imported apples and apple concentrate from China.

The results of our mail survey indicate that MACMA members tend to be more satisfied than non-members. Holding a number of control variables constant, the survey analysis showed that MACMA members appear to reap substantial fringe benefits from their membership in the bargaining cooperative. These benefits include having input into contract terms and public policy that affects them, as well as finding marketing assistance if needed.

Overall, we conclude that strong laws that enable the establishment of bargaining cooperatives, although not panaceas, help growers to maintain their operations in the face of structural change in the apple industry.

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Appendix A: Processed Apple Grower Survey

I. Please circle the number that best reflects <u>your opinion</u> regarding the following statements.

I have input into the price I receive for my processed apple crop.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	**2**	**3**	**4**	**5**

I have input into terms of trade such as payment schedules for my processed apple crop

1	**2**	**3**	**4**	**5**

In general apple growers in my state are at a disadvantage because the processing sector is too concentrated.

1	**2**	**3**	**4**	**5**

In general the apple processing firms in my state have too much control over important aspects of my operation.

1	**2**	**3**	**4**	**5**

I am generally satisfied with the marketing arrangements for my processed apple crop.

1	**2**	**3**	**4**	**5**

We need a new and stronger <u>federal</u> law that <u>requires</u> processing firms to bargain with accredited grower bargaining cooperatives or associations.

1	**2**	**3**	**4**	**5**

It is difficult to find useful apple market and production information that keeps me informed of industry developments.

1	**2**	**3**	**4**	**5**

I have input into state government policies and programs that might affect my operation.

1	**2**	**3**	**4**	**5**

I have input into federal government policies and programs that might affect my operation.

1	**2**	**3**	**4**	**5**

If I need it, I can get assistance in finding a "home" or market outlet for my processed apple crop.

1 **2** **3** **4** **5**

Having a "home" or market outlet for my crop is more important than receiving a market price.

1 **2** **3** **4** **5**

We need more apple processing firms in my state.

1 **2** **3** **4** **5**

In general, grower organizations that collectively bargain with processing firms for price raise the price of processed apples for all growers, even non-members.

1 **2** **3** **4** **5**

The price I receive for my processed apple crop is high enough to cover my production costs.

1 **2** **3** **4** **5**

II. Apple Marketing Information

Do you process the apples you produce into a finished product? ____ yes ____ no

In the most recent year, what percentage of your farm's apple production was sold on the processed market? _____%

In the most recent year, what percentage of your fresh market apples were packing house culls? _____%

In the most recent year, what percentage of your apples for processing were purchased by processing firms <u>located in your state</u>? _____%

Approximately how many processing firms do you have to choose from as potential buyers for your apple crop? In-state _____ & total _____

In an average year (consider the last 3 years), how many processing firms do you deal with? In-state_____ & total ____

In an average year (consider the last 3 years) what is the size of the <u>first</u> payment received for your processed apples? _____%

On average, by what date do you know the price you will receive for your processed apples?

On average, by what date do you know the volume to be purchased from you by your processing firm?

How often do you sell to a processing firm without an agreed upon price?
___ often ___ sometimes ___ seldom or never

Are you a member of an organization that collectively bargains with processing firms for price and other terms of trade?
____ no → Does such an organization exist in your state?___ yes ___ no

____ yes → Have firms refused your business for this reason?___ yes ___ no

III. Farm and Farmer Information

How many years have you been growing apples? _____ years

In 5 years will you, or another member of your family, be growing apples? ___ yes ___ no

Organization type (check one):
Sole or Family Proprietorship _____ General Partnership ____ Family Corporation ___
Limited Partnership _____ Non-family Corporation _____
Other ____ (please list _____)

In an average year (consider the last 3 years) how many <u>bushels</u> of apples for processing do you produce? _____ bushels

Gross <u>processed</u> apple sales volume (circle the appropriate category/range for your operations).
1. $10,000 or less 2. $10,001–20,000 3. $20,001–40,000 4. $40,001–60,000

5. $60,001–80,000 6. $80,001–100,000 7. $100,001–200,000 8. $200,001–300,000

9. $300,001–500,000 10. $500,001–750,000 11. $750,000–$1 mil. 12. more than $1 mil.

Do you own stock in an apple-processing cooperative?
___ no→ Please go to next question

___ yes→ Do you own enough stock to meet <u>all</u> your processed apple production needs?
___ no ___ yes

What is the zip code(s) of your farm where you grow apples for processing? _____

(This address form will be detached from the survey above)

Thank you for completing the survey! If you would like to receive a copy of the results, write your mailing address below.

Appendix B: Results from Grower Survey

Question	Agree (%)			Neutral (%)			Disagree (%)		
	*MAC	Non-MAC	NY	MAC	Non-MAC	NY	MAC	Non-MAC	NY
I have input into the price I received for my processed apple crop.	26.3	7.0	8.1	13.5	5.6	4.7	60.3	87.3	87.2
I have input into terms of trade such as payment schedules for my processed apple crop.	18.3	9.9	7.8	12.7	7.0	10.0	69.0	83.1	82.3
In general apple growers in my state are at a disadvantage because the processing sector is too concentrated.	38.8	38.6	73.9	30.3	41.4	17.8	31.0	20.0	8.3
In general the apple processing firms in my state have too much control over important aspects of my operation.	54.6	43.7	63.2	26.2	29.6	22.1	19.1	26.7	14.7
I am generally satisfied with the marketing arrangements for my processed apple crop.	20.4	15.5	11.6	16.2	23.9	18.5	63.4	60.6	69.8
We need a new and stronger federal law that requires processing firms to bargain with accredited grower bargaining cooperatives or associations.	70.0	49.3	56.0	19.3	28.2	23.3	10.8	22.6	20.7
It is difficult to find useful apple market and production information that keeps me informed of industry developments.	33.1	38.0	38.3	27.5	31.0	22.1	39.4	31.0	39.6
I have input into state government policies and programs that might affect my operation.	29.6	18.3	24.7	26.8	25.4	22.6	43.6	56.3	52.8
I have input into federal government policies and programs that might affect my operation.	21.8	16.9	13.7	25.4	23.9	22.2	52.8	59.1	64.1
If I need it, I can get assistance in finding a "home" or market outlet for my processed apple crop.	51.4	17.1	13.2	14.8	24.3	13.7	33.8	58.6	73.1

Having a "home" or market outlet for my crop is more important than received a market price.	12.0	12.8	19.4	13.4	21.4	18.5	74.7	65.7	62.1
We need more apple processing firms in my state.	64.8	50.7	83.4	23.2	36.6	13.7	12.0	12.6	3.0
In general, grower organizations that collectively bargain with processing firms for price raise the price for all growers, even non-members.	83.1	52.1	57.0	9.2	25.4	24.8	7.7	22.6	18.2
The price I receive for my processed apple crop is high enough to cover my production costs.	9.9	7.0	10.4	6.3	14.1	11.2	83.8	78.8	78.5

*MAC = MACMA member
Non-MAC = Michigan grower but not a member of MACMA
NY = New York grower

Do you process the apples you produce into a finished product?

Yes			No		
MACMA	Non-MAC	NY	MACMA	Non-MAC	NY
7.0 %	5.6 %	15.7 %	93.0 %	94.4 %	84.3 %

In the most recent year, what percentage of your farm's apples production was sold on the processed market?

	0–25	26–50	51–75	76–100
MACMA	12.0 %	38.7 %	19.7 %	29.6 %
Non-MAC	13.9 %	26.4 %	16.6 %	43.1 %
NY	27.5 %	20.6 %	22.3 %	29.6 %

In the most recent year, what percentage of your fresh market apples were packing house culls?

	0–10	11–25	26–50	51–100
MACMA	24.1 %	45.8 %	26.3 %	3.8 %
Non-MAC	41.4 %	39.6 %	17.3 %	1.7 %
NY	46.8 %	38.1 %	12.7 %	2.4 %

In the most recent year, what percentage of your apples for processing were purchased by processing firms located in your state?

	0–89	90–100
MACMA	12.6 %	87.4 %
Non-MAC	8.5 %	91.5 %
NY	47.6 %	52.4 %

Approximately how many processing firms do you have to choose from as potential buyers for your apple crop? In state.

	1–3	4–6	7–14
MACMA	54.0 %	34.5 %	11.5 %
Non-MAC	58.2 %	32.8 %	9.0 %
NY	89.3 %	9.8 %	0.9 %

Approximately how many processing firms do you have to choose from as potential buyers for your apple crop? Total.

	0–2	3–5	6–8	9–14
MACMA	28.0 %	48.3 %	16.2 %	7.5 %
Non-MAC	33.3 %	47.7 %	9.5 %	9.5 %
NY	38.7 %	50.0 %	9.1 %	2.2 %

In an average year (consider the last 3 years), how many processing firms do you deal with? In state.

	0–3	4–9
MACMA	75.2 %	24.8 %
Non-MAC	75.4 %	24.6 %
NY	90.4 %	9.6 %

In an average year (consider the last 3 years), how many processing firms do you deal with? Total.

	0–3	4–12
MACMA	69.1 %	30.9 %
Non-MAC	69.2 %	30.8 %
NY	62.9 %	37.1 %

How often do you sell to a processing firm without an agreed-upon price?

	Often	Sometimes	Seldom or never
MACMA	23.1 %	25.2 %	51.7 %
Non-MAC	47.2 %	27.8 %	25.0 %
NY	17.1 %	30.3 %	52.6 %

In 5 years will you, or a member of your family, be growing apples?

	Yes/probably	Maybe/don't know	No/probably not
MACMA	66.4 %	11.2 %	22.4 %
Non-MAC	69.5 %	11.1 %	19.5 %
NY	68.1 %	9.9 %	22.0 %

In an average year (consider the last 3 years) how many bushels of apples for processing do you produce?

	0–10,000	11,000–25,000	26,000–50,000	51,000–83,000	84,000–400,000
MACMA	33.3 %	32.6 %	24.0 %	5.8 %	4.3 %
Non-MAC	30.4 %	30.5 %	24.6 %	10.2 %	4.3 %
NY	35.1 %	25.3 %	21.6 %	7.6 %	10.4 %

Gross processed apple sales volume

	MACMA	Non-MAC	NY
0–10,000	6.7 %	9.7 %	17.5 %
10,001–20,000	15.6 %	9.7 %	13.9 %
20,001–40,000	17.8 %	25.0 %	16.6 %
40,001–60,000	17.0 %	9.7 %	8.5 %
60,001–80,000	10.4 %	8.3 %	9.4 %
80,001–100,000	10.4 %	8.3 %	5.8 %
100,001–200,000	9.6 %	23.6 %	13.9 %
200,001–300,000	5.9 %	2.8 %	6.7 %
>300,000	6.7 %	2.8 %	7.6 %

Do you own stock in an apple-processing cooperative?

	MACMA	Non-MAC	NY
Yes	58.7 %	58.3 %	20.9 %
No	41.3 %	41.7 %	79.1 %

If yes, do you own enough stock to meet all your processed apple needs?

	MACMA	Non-MAC	NY
Yes	17.5 %	23.6 %	1.7 %
No	42.0 %	34.7 %	19.0 %
NA	40.6 %	41.7 %	79.2 %