SOME RELATIONSHIPS BETWEEN THE RETAIL, WHOLESALE AND FARM EGG PRICES IN THE LANSING, MICHIGAN, MARKET FROM 1969 TO 1972

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ABSTRACT

SOME RELATIONSHIPS BETWEEN THE RETAIL, WHOLESALE AND FARM EGG PRICES IN THE LANSING, MICHIGAN, MARKET FROM 1969 TO 1972

By

James Leslie Dale

Seven supermarket-type retail stores in the Lansing-East Lansing, Michigan, metropolitan area were visited once each week, usually on Friday, to obtain retail prices of large and medium Grade A eggs in one dozen cartons. The Friday U.S.D.A. Dairy and Poultry Market News inside, or low-side-of-range, price-to-retailers was used as the wholesale price. Five Michigan-Indiana-Ohio egg assembler-handlers, with a combined volume of 60,000 cases per week, allowed the use of their actual price-to-retailers and net farm price. Friday Urner-Barry quotes were also obtained.

The data were collected for the 53-week period, October 24, 1969 to October 23, 1970 and for the 20-week period, January 7, 1972 to May 19, 1972.

The following questions were studied:

1. Were there significant differences in prices between supermarket-type stores in the Lansing-East Lansing, Michigan, metropolitan area?
2. Which wholesale price, the Urner-Barry quotation or the U.S.D.A. Market News quotation, was a more accurate reflection of the assembler-handler selling price?

3. What relationships existed in egg prices between the farm, wholesale, and retail price levels?

There were significant differences between the supermarket-type retail stores in all the aspects of retail price that were analyzed.

The U.S.D.A. Market News price was a more accurate reflection of the actual price paid by retailers to the five egg handlers studied. However, the U.S.D.A.-Urner-Barry difference declined between the two periods.

The average retail margins, farm-wholesale margin and farm-retail margins were not significantly different between either the 53 and 20 week periods or the large and medium sizes. The average retail margin was about 12 cents per dozen; the average farm-wholesale margin was about 10 cents per dozen; the average farm-retail margin was about 22 cents per dozen. All three margins were not constant over different wholesale price levels.

The average rates of price change were greater for medium eggs and for declining prices. Most stores were more responsive to decreases in the wholesale price. Retail prices lagged one week behind wholesale price.

The 2 cent increment was the most often used increment of price change. High prices did not usually coincide with high margins nor did low prices and low margins coincide. About 85 percent of all retail prices for the two periods for both sizes were marked at odd levels.

The egg prices net-to-farm were very similar among the five assembler-handlers studied in the Michigan-Ohio-Indiana tri-state area.

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INTRODUCTION

The reason for this study developed as a result of several events that occurred in 1969. On July 17 and 18, 1969, C. C. Sheppard attended an open meeting in Chicago, Illinois sponsored by the U.S.D.A. and the National Association of State Departments of Agriculture. The purpose of the meeting was "for the industry to become actively involved in implementing change" (Alampi and Lyng, 1971) in the egg pricing system. The egg industry formed a National Egg Pricing System Study Committee, with Mr. Alampi, Secretary, New Jersey Department of Agriculture, chairman, as a result of that July meeting.

In the fall of 1969 the Michigan State University Poultry Science Department Extension staff (J. Wolford, C. J. Flegal and C. C. Sheppard) became concerned about the range of prices in retail stores for eggs of the same size and quality grade. There were several office conferences during which this situation was discussed. Store visits were made to observe the prices of the egg sizes and qualities that were offered for sale at retail in the Lansing-East Lansing, Michigan area.

Henry Larzelere, Michigan State University Department of Agricultural Economics, at meetings during the fall of 1969, pointed out the gradual increase (1960-1969) in the differences of one cent to 6 cents per dozen between the New York Urner-Barry market quotation (presently fancy large white) and the farm paying price for eggs. He mentioned this because many Michigan egg buyers looked to the New York market (described by

Rogers and Voss (1969) as "the most widely used basing point") for their egg price determination.

During a conversation early in the study with Howard Zindel, chairman of the Michigan State University Poultry Science Department, he wondered which wholesale price was a more accurate reflection of the value of eggs; for example the Urner-Barry quotation or the U.S.D.A. Market News reported price.

In view of these ideas and opinions it was decided to study the price relationships between several of the supermarket-type retail stores in the Lansing-East Lansing, Michigan area. The study also included a comparison between those retail prices and the wholesale price. Two other prices were also included. One was the farm paying price for grade A large and grade A medium eggs. The other was the price received by the assembler-handler for eggs delivered to the supermarket, either store-door or warehouse.

OBJECTIVES

It was hoped that this study would lead to answers to the following questions:

1. Were there significant differences in prices between supermarket-type stores in the Lansing-East Lansing, Michigan, metropolitan area?
2. Which wholesale price, the Urner-Barry Quotation or the U.S.D.A. Market News Quotation, was a more accurate reflection of the assembler-handler selling price?
3. What relationships existed in egg prices between the farm, wholesale, and retail price levels?

REVIEW OF LITERATURE

Meredith (1971) in his 1958-1967 New Jersey study reported:

1. "Retailers do not set their price at either a fixed premium or a percentage markup above either the wholesale market quotation or their purchase price. Rather, the decision-making process of setting specific retail prices is influenced by a number of factors including their firm's overall pricing policies, the general prevailing price levels for eggs, the so-called psychologically acceptable or preferred prices, the competition's prices, price trends, etc."

2. "The common practice for the New York retail chain studied was to set retail price at approximately 18 cents over the stated Urner-Barry wholesale quotation."

3. "The same differential between retail prices for large eggs and wholesale quotations for large eggs existed regardless of whether wholesale egg market quotations were at high (above 60 cents per dozen), medium (40 to 60 cents per dozen), or low (below 40 cents per dozen) levels. This indicates the use of an absolute or fixed markup over the wholesale quotation rather than a percentage markup."

4. Prices tended to rise gradually and in smaller, more frequent increments; price decreases were made more rapidly and in larger daily increments. Each time the retail price

changed, the amount of change averaged 2.43 cents per dozen for large eggs; up moves averaged 2.24 cents per dozen while down moves averaged 2.69 cents per dozen. The average amount of change for medium size eggs was 2.52 cents per dozen; increases averaged 2.37 cents while decreases averaged 2.60 cents per dozen. The most frequent amount of change was 2.00 cents per dozen for large eggs--this information was not available for the medium size.

5. Retailers are concerned with price stability. "Large egg retail prices varied less from the annual average retail price than wholesale quotes varied from the annual average wholesale quotation." "The persons responsible for determining egg prices frequently wait until a definite trend in wholesale prices has been established before adjusting their retail prices." Once a trend was established, however, the retail price changes in large increments.

6. The New York City-New Jersey average farm-retail spread for the 10 years, 1958-1967, was 17.23 cents per dozen for large Grade A eggs with a range of 14.75 cents to 19.07 cents per dozen.

The Marketing and Transportation Situation, a quarterly publication of the U.S.D.A. Economic Research Service, lists the farm-retail margin on a ten city national average basis for Grade A, large eggs. They do not, however, include a wholesale, price-to-retailers figure which would facilitate a more in-depth analysis.

The 1947-1949 average farm retail margin, Marketing and Transportation Situation (124-135), was 18.7 cents per dozen; comparing an

average retail price of 66.7 cents per dozen with an average farm price of 48.0 cents per dozen. For the period of October, 1959 through September, 1960, MTS (135-139)--10 years prior to the present time interval of study--the average margin declined to 18.22 cents per dozen as the average retail price fell to 51.57 cents and the average farm price fell to 33.35 cents per dozen. The 1957-1959, MTS (158-159), average margin, however, was 20.1 cents per dozen; the average retail price was 56.2 cents per dozen; the average farm price was 36.1 cents per dozen.

The twelve-month period four years prior to the present study--October, 1965 through September, 1966, MTS (159-163)--saw the ten city average retail price rise to 58.97 cents per dozen for large Grade A eggs. The average farm price also increased to 38.45 cents per dozen with the resulting margin being 20.52 cents per dozen.

The ten city average retail price for the period of study, MTS (176-179)--October, 1969 through September, 1970--was 64.47 cents per dozen; the national average farm price for Grade A, large eggs for the same period was 41.97 cents per dozen; the resulting average farm-retail margin was 22.50 cents per dozen.

The most recent national figures available from the Marketing and Transportation Situation (184) are for the year 1971. The ten city average retail price for the year was 52.80 cents per dozen. The farm price for the year averaged 30.20 cents per dozen, giving an average farm-retail margin of 22.60 cents per dozen.

The ten city average farm-retail margin has increased from the 1947-1949 average of 18.7 cents per dozen to the 22.60 cents per dozen of 1971, an amount of 3.9 cents per dozen. This occurred while the farm and retail prices over those years were quite volatile.

Although volatility was evident, the amount that the farm-retail margin deviated from its average was very small for any of the periods reported, whether its component prices were high or low.

Gray (1962) reported that "during the period 1956-1961, retail store spreads as a percent of the total farm to retail price spread for large, Grade A eggs averaged 40 percent among the 10 cities surveyed." The farm to retail margins varied per city with the smallest margin being 17.1 cents per dozen in Los Angeles and the highest being 29.2 cents per dozen in New York City. Differences were credited to the number of stops within the market channel and to the distance from production to consuming areas; the closer the two physical attributes and the fewer market channel stops, the smaller the margin.

The price at the farm for Gray's six year study (1956-1961) averaged 34.96 cents per dozen for large, Grade A eggs. The city receiver price averaged 40.12 cents, or 5.16 cents per dozen over the farm price. The price charged to the retailer averaged 49.42, or a 9.30 cents per dozen margin for the wholesalers. The retail price to consumers for the six year period averaged 58.76 cents per dozen, a 9.34 cents margin for retailers. Prices paid at these various levels fluctuated over the study period. However, the margins reported remained virtually constant.

Williams (1958) reported that the "average Detroit wholesale price" for one dozen, Grade A, large eggs for that year was 46.12 cents per dozen. The average Detroit retail price for large, Grade A eggs was 54.65 cents per dozen, an 8.50 cents per dozen margin. The average margin for one dozen, Grade A, medium eggs was 9.01 cents per dozen.

Williams (1958) found that the lowest price was not associated with the smallest margin and conversely the highest price was not associated with the greatest margin. From this, Williams concluded that "margins per dozen eggs appeared to be more closely linked with production than with demand." He also concluded that "there was no apparent relation between margin and the wholesale price." Using analysis of variance, Williams found that the average margins of Grade A, large and medium eggs were not significantly different.

Kemp et al. (1954) reported that the wholesale-retail margin increased with the size of eggs sold. The average retail margin for all eggs sold was 9.55 cents per dozen. Savage (1954) reported that the wholesale-retail margin in Maine averaged 8.8 cents for all eggs sold with a range of 2 to 22 cents per dozen. Becker (1953) found in Pennsylvania that the wholesale-retail margin averaged 9.1 cents per dozen for all eggs sold.

Stanulis (1953) reported that the retail margins in Detroit, expressed as a percent of retail price, ranged from 5 to 12 percent with the mode being 10 percent. Retailers added the retail margin and then adjusted the price accordingly to obtain an odd price. Occasionally different sizes commanded different margins. He found that the stores with the lowest margins handled the best quality eggs and sold the most eggs.

Stanulis (1953) reported that the store buyers he observed did not purchase eggs at Detroit market prices and that the wholesalers he observed would not sell at the listed Detroit market prices over a period of time. Retail buyers he observed tended to estimate retail egg prices in advance to facilitate stable prices. "Daily fluctuations

would create a nerve-racking situation for the buyer who must maintain a certain markup and still keep retail price at the advertised level."

Rooney and McKeen (1971) reported that the San Bernardino, California, eight store average price was 43.6 cents per dozen for Grade A, large eggs and 36.7 cents per dozen for Grade A, medium eggs. For the five-year period, 1967-1971, the farm-wholesale price spread averaged 13.4 cents per dozen for large Grade AA, and that the large AA farm-retail spread averaged 22.0 cents per dozen. The Grade AA, large wholesale-retail spread averaged 8.6 cents per dozen. They indicated that "the wholesale-retail spread seemed oriented toward a percentage rather than a specific cents amount. In the southern California area, the retail price followed the producer price. The average markup--the difference between retail price and price to retailer expressed as a percent of price-to-retailer--was 18 to 20 percent for common sizes (extra large, large, medium, all Grade AA)."

Hoyt (1969) reported the average price for all eggs for three west Michigan egg producers for three separate periods during 1966-1967 was 28.42 cents, 31.64 cents and 28.32 cents per dozen. These prices were below the average Urner-Barry fancy heavyweight quotation by 8.22 cents, 5.88 cents and 8.10 cents per dozen respectively.

Smith and Christensen (1968) found that the farm-retail margin for large eggs had expanded during their 1961-1967 study. They believed that this would have an adverse affect on producers' gross revenue in the long run. "It is the total farm to consumer margin which is important in determining the farm revenue at any retail price not the differential from the base price," e.g., the Urner-Barry New York quotation.

Conlogue and Kaiser (1957) studied the marketing margins for eggs moving from the midwest and east into the Washington, D.C., market area. The average midwest farm price, for all eggs, for that year was 43.8 cents per dozen compared with 49.3 cents for the eastern producers. Consumers in the Washington area paid approximately 75 cents per dozen for all eggs regardless of the origin of the eggs. Retailers took a margin on all eggs of 12.5 cents per dozen; wholesalers collected 9.2 cents per dozen. Assemblers in the east obtained a margin of 4.1 cents per dozen while their midwest counterparts commanded 9.5 cents per dozen. The differential appears in a difference of 5.5 cents per dozen at the farm level.

Rogers and Faber (1970) reported that the average Ohio-Indiana farm price for large Grade A eggs during the five years of 1962-1966 was 31.69 cents per dozen. Comparing this to the average Detroit price-to-retailer of 44.63 cents per dozen for the same period, a 12.94 cents per dozen farm-wholesale margin evolved. While the farm price had a range of 6.58 cents per dozen and the price-to-retailer had a range of 7.36 cents, the margin had a range of only 1.04 cents per dozen. For medium Grade A eggs, during the 1962-1966 period, the Ohio-Indiana farm price averaged 25.80 cents per dozen with a range width of 6.06 cents per dozen. The Detroit price-to-retailer ranged from 36.32 to 43.90 or 7.58 cents with the average price being 38.61 cents per dozen. The farm-wholesale margin averaged 12.80 cents while varying only 1.52 cents per dozen. These figures point out that the farm-wholesale margin per dozen remains relatively constant although its price components may vary greatly.

Spearman (1970) reported that the average difference between large and medium Grade A eggs in Atlanta, Georgia was 6.0 cents per dozen in 1966 and 7.0 cents per dozen in 1967. The average retail price was 56 cents per dozen for large and for medium it was 50 cents per dozen in 1966. In 1967 the large price averaged 45 cents per dozen while the medium price was 38 cents per dozen.

Nybroten (1954) calculated that for the maximum value to retailers, medium eggs should be priced at 73 to 75 percent of the large egg price over an entire range of prices. This pricing structure tended to satisfy consumers' feelings regarding purchase decisions between the two sizes.

METHODOLOGY

Collection of Data

Starting October 24, 1969, for 53 consecutive weeks through October 23, 1970, retail stores in the Lansing-East Lansing, Michigan metropolitan area were visited to obtain prices for various sizes, packs and grades of eggs. At the outset prices for all sizes, grades and packs handled by each store visited were recorded. However, only data for Grade A, large and medium size eggs in one dozen packs were used for this study. These were the only two that were carried, in volume, consistently by the stores visited.

Originally, the survey included 16 stores with the following distribution among chains represented in the Lansing-East Lansing metropolitan area:

Spartan Shop-Rite--2 stores

Packer (Now Wrigley--both operated by Allied Supermarkets)--1 store

Kroger--3 stores

A & P--3 stores

Schmidts--3 stores

Hamady--2 stores

Meijer--2 stores

These seven organizations represented an affiliated independent cooperative, national, regional and local chains. Thus, a cross

section of the food retailing industry was obtained--excluding the unaffiliated independent. It was estimated that these chains represent 70 percent of the volume of eggs sold outside of the Detroit area market.*

After the first six weeks of sampling, it was observed that the egg prices per specified size and pack were identical among stores within the same chain. It was decided to limit samplings to one store of each of the above mentioned chains. This would accurately read the metropolitan market while reducing the time required to survey the stores.

The retail prices were recorded once each week on Friday. The supermarket industry estimates that about 70 percent of its business occurs on Thursday, Friday and Saturday. Therefore, the selling price of eggs on these three days would represent the price paid by about 70 percent of the consumers in the metropolitan area.

As mentioned, the actual sampling was done by visitation. At one point, the surveyor attempted to sample by phone. However, inaccurate observations were obtained by phone, necessitating the return to visitation. Some retailers were reluctant to give the requested information over the phone, even when the nature of the study was explained.

The wholesale base used for analysis was the Detroit inside or low side of the range, "price-to-retailer for cartoned eggs, delivered," as reported by the U.S.D.A. Dairy and Poultry Market News (DPMN). The range listed was derived by DPMN from daily contacts with egg

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*Springer, Clyde, Michigan Farm Bureau Services, Egg Marketing Division, Personal Interview, May, 1972.

suppliers and chain buyers in the Detroit metropolitan area. The inside price (of the range) was reported to represent volume purchases commensurate with the volume handled by the surveyed stores in the Lansing-East Lansing, Michigan area. Tables 5, 6, 7 and 8 of Appendix I present the U.S.D.A. price, the Urner-Barry Quote and the actual price-to-retailers charged by the five tri-state handlers studied.

The Detroit wholesale price was also recorded once each week, using the Friday quotation as it appeared in the DPMN twice-weekly report. Similarly, the farm price paid net to producers was recorded once weekly, using the Friday paying price when such information was available, or using a Wednesday through Friday average price when Friday only listings were not available.

The farm price was obtained from the following sources: Michigan Farm Bureau Services, Inc., Lansing, Michigan; Hamilton Farm Bureau, Inc., Hamilton, Michigan; Indiana Farm Bureau Association, Inc., Indianapolis, Indiana; Landmark Foods, Inc., Columbus, Ohio; Poultry Producers Association, Inc., Versailles, Ohio. The combined volume of these five egg handlers was approximately 60,000 cases of eggs per week. The sources of eggs were in Michigan, Indiana, Ohio and east central Illinois. The calculation of an average farm price from figures supplied by these organizations, thus, gives a fairly representative farm price for the East North Central Region.

Following the analysis of the original 53-week period, a second sampling was taken two years after the first. This second sampling began January 7, 1972, and continued for 20 consecutive weeks through May 19, 1972. The same procedures for sampling, as outlined above, were followed.

Methods of Analysis

Methods of analysis included established statistical tests and margin analysis.

For analyzing the information it was decided to study the relationships surrounding the "normal" prices, disregarding "special sale" prices. For this study, a "special sale" was defined as those prices whose margin met the following criterion:

$$M_{iJ} \leq \left(\left(\left(\sum_{J=1}^{53} M_{iJ}\right) \div 53\right) \div 2\right)$$

where M = margin between retail price and wholesale price,

J = week number, and

i = store number

As an example, if the average retail margin for any store for the period of study was 8.00 cents per dozen, then if the retail margin in any week was 4.00 cents per dozen or less, the price for that week was considered a "special sale." For all analyses performed, the "special sale" prices for each store were removed.

Analysis of covariance was used to determine if a difference existed between stores in pricing both the large and the medium eggs. Analysis of covariance employs analysis of variance and linear regression analysis in combination. To perform the analysis the following models were used:

$$(a)\ P_{iJ} = \sum_{K=1}^{7} B_K S_K + \sum_{K=1}^{7} M_K W_{iJK} + E_{iJ}$$

where P = price

i = store number

J = week number

S = store, where $S_K = \begin{matrix} 0 \text{ if } i \neq k \\ 1 \text{ if } i = k \end{matrix}$

M = slope

$W_J = \begin{matrix} 0 & \text{if } i \neq k \\ \text{whlse. price for } J\text{th week} & \text{if } i = k \end{matrix}$

E = error term

B may be interpreted as i^{th} store's fixed cost and M as its percentage markup above fixed cost

$$(b) P_{iJ} = B \sum_{K=1}^{7} S_K + \sum_{K=1}^{7} M_K W_{iJK}$$

$$= B + \sum_{K=1}^{7} M_K W_{iJK}$$

$$(c) P_{iJ} = \sum_{K=1}^{7} B_K S_K + M \sum_{K=1}^{7} W_{iJK}$$

$$= \sum_{K=1}^{7} B_K S_K + M_i W_J$$

$$(d) P_{iJ} = B + M_i W_J$$

Using model (b) with model (a) the null hypothesis that fixed costs were equal was tested. Similarly, the null hypothesis that percent markups were equal was tested using model (c) with model (a). Simultaneous use of model (d) with model (a) tested both hypotheses. The null hypotheses were then rejected if the F ratios were significant.

The following linear regression models were also used.

Farm price = P (Wholesale price)

Lansing Market Average price = P (Wholesale price)

Lansing Market Average Price = P (Farm price)

Medium price = P (Large price) This model was used for the retail, wholesale and farm prices.

The linear regression models assumed that the factor in parenthesis was the independent variable and that the factor left of the equal sign was dependent upon the independent variable for its value.

The data were separated into four divisions for analysis as follows: large size, 53 weeks; medium size, 53 weeks; large size, 20 weeks; medium size, 20 weeks.

Margin analyses were employed to analyze the absolute margins involved. Margins were calculated as defined previously. The price for each store, the Lansing Market Average price and the farm price were included in this analysis. The wholesale price was divided into eight arbitrary units or ranges for these analyses. The method of calculation of wholesale price range was as follows:

(a) $AP_0 = \sum_{J=1}^{53} W \div 53$ where AP = Average price

W = Wholesale price

J = Week number

(b) $AP_1 + (AP_0 + HP_0) \div k$; where HP = High price, k = 2

(c) $AP_2 = (AP_1 + HP_0) \div k$

(d) $AP_3 = (AP_0 + AP_1) \div k$

(e) $AP_4 = (AP_0 + LP_0) \div k$; where LP = Low price

(f) $AP_5 = (AP_0 + AP_4) \div k$

(g) $AP_6 = (AP_4 + LP_0) \div k$

The wholesale ranges or levels were then developed as follows:

Range 1 = $AP_2 \rightarrow HP$

Range 2 = $AP_1 \rightarrow (AP_2 - 1)$; where 1 = \$ .01

Range 3 = $AP_3 \rightarrow (AP_1 - 1)$

Range 4 = $AP_0 \rightarrow (AP_3 - 1)$

Range 5 = $AP_5 \rightarrow (AP_0-1)$

Range 6 = $AP_4 \rightarrow (AP_5-1)$

Range 7 = $AP_6 \rightarrow (AP_4-1)$

Range 8 = $AP_0 \rightarrow (AP_6-1)$

These ranges were then used as the basis from which to perform different margin analyses.

The Lansing Market Average calculated for each week was the average of the "normal" prices for that given week.

Linear regression results will be given as a constant term and a multiplier term. The results can be interpreted per the following linear formula:

$y = mx + b$

where y = the dependent value to be calculated

m = the multiplier term (slope of the linear line)

x = the independent factor value to be used

b = the constant term

DEFINITIONS

The following terms or expressions will be used throughout this report, unless otherwise specified. They are defined as follows:

Retail price--The price paid by consumers when purchasing a dozen eggs in the retail store.

Wholesale price or price-to-retail--For the purposes of this study these two terms are synonymous. This price is that which is paid by retailing firms to egg suppliers for a dozen eggs.

Farm price--The net price received by the producer or farmer at the farm, from the firm that purchases his eggs. This report assumes that such price does not reflect on the farm processing--washing, grading (for size and quality), packaging of eggs into consumer packs. These functions are handled by the purchasing firm at a central location.

Margin or spread--The absolute or percentage difference calculated between any two given prices.

Farm-wholesale spread or margin--The difference calculated between the wholesale price and the farm price expressed either as an absolute or percentage.

Wholesale-retail or retail spread or margin--The difference calculated between the retail price and wholesale price expressed an as absolute or percentage.

Farm-retail spread or margin--The difference calculated between the retail price and farm price expressed as an absolute or percentage.

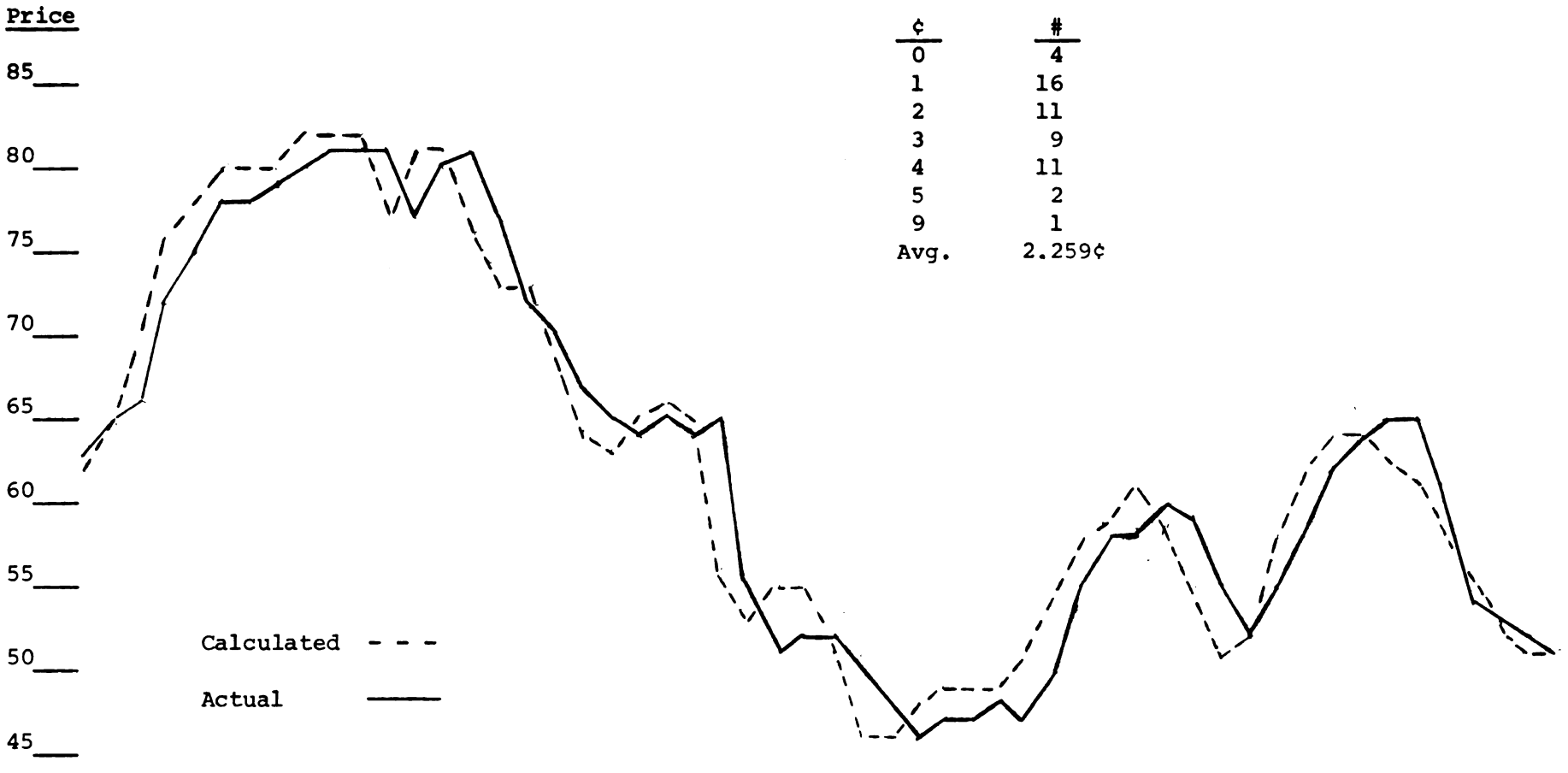
RESULTS

Preface

Comparison of the prices within this study required an assumption regarding approximate reaction time among price changes within the total system. Interviews with egg assemblers-handlers indicated that their price-to-retailers and their price-to-farmers immediately reacted to changes of the Urner-Barry New York quotation. Thus, it could be deduced that price-to-retailers (wholesale price) and price-to-farmers will usually move in the same direction in any given week.

In the initial stages of comparison, this same-week reaction assumption was applied to the retail price versus the wholesale price. The retail price for any given week would reflect the U.S.D.A. Detroit inside price-to-retailers for that same week (i.e., December 15 retail price reflects December 15 wholesale price).

Margins per wholesale price level for the Lansing Market Average were calculated. As an accuracy check on the validity of the same-week assumption, the Lansing Market Average price for each week was predicted from the wholesale price. The formula was Lansing Market Average price equals wholesale price plus margin for that wholesale price level. This predicted price was then compared graphically with the actual Lansing Market Average price. Figure 1 presents the results. Visual analysis indicates that the predicted price does not closely follow the



Variance ¢	Times #
0	4
1	16
2	11
3	9
4	11
5	2
9	1
Avg.	2.259¢

Figure 1. Lansing Market Average Price: Actual versus Calculated.
Calculation Assumption: That retail price reflects wholesale price in the same week (December 15 retail price reflects December 15 wholesale price).

actual price. The average deviation between the two prices was 2.259 cents per week. The actual market average and predicted market average coincided only four times.

It was decided to try another assumption to obtain a more accurate predicted value. The assumption was that the retail price in any given week "n" reflected the wholesale price in any given "n-1" week; a lag time of one week was assumed to exist between the wholesale price and the retail price (i.e., December 15 retail price reflects December 8 wholesale price).

Lansing Market Average retail margins were calculated and the predictive function was performed again. Figure 2 presents the results of the one week lag of predicted versus actual average prices.

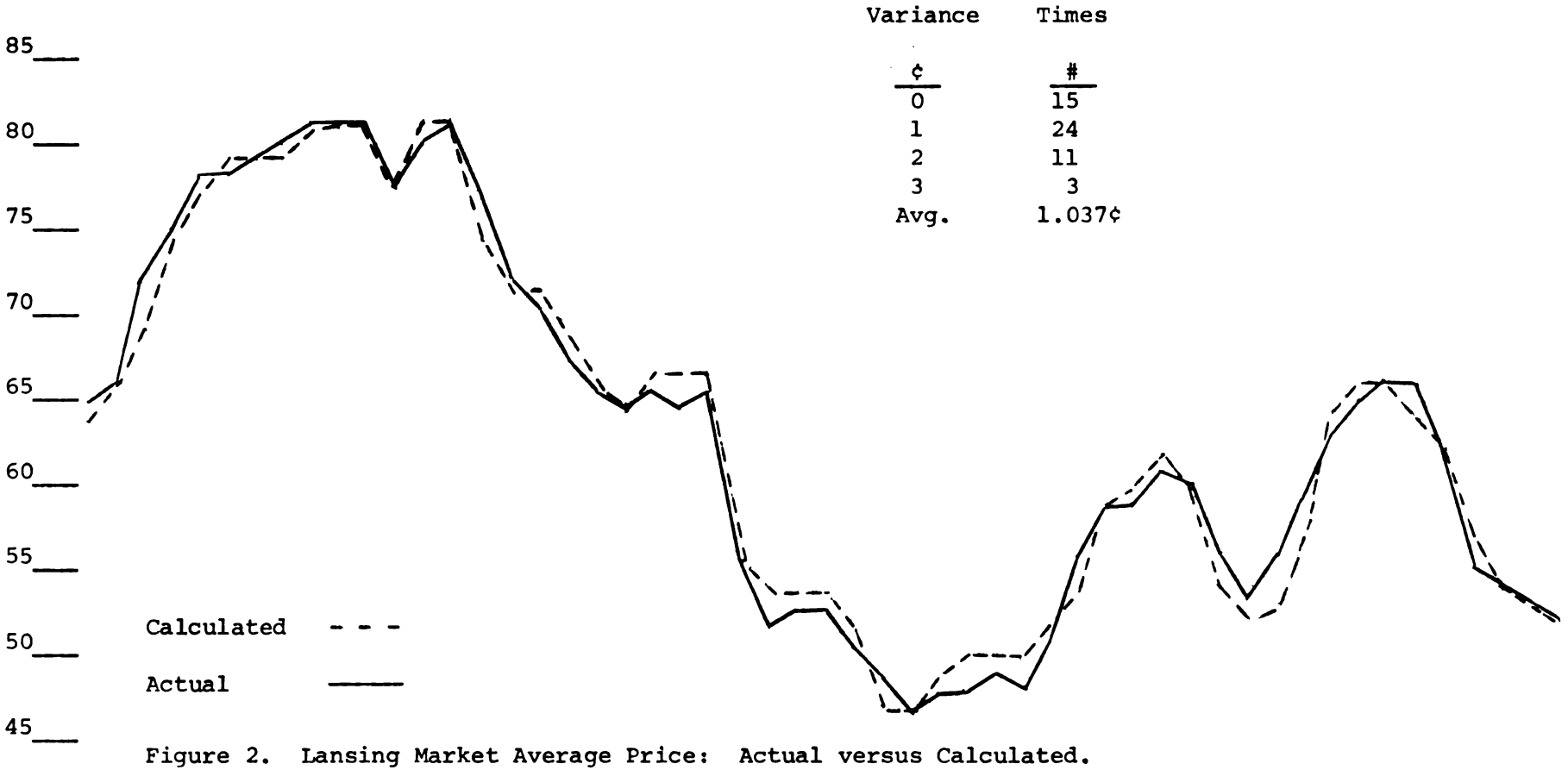
The average difference between the predicted and actual was 1.037 cents per week.

Visual analysis of Figure 2 will verify the close accord between the Lansing Market Average actual and predicted values.

The analyses were then based upon the assumption that the retail prices lag one week behind the wholesale price; that the farm price, the wholesale price and the Urner-Barry New York quotation all interact within the same week.

To give the reader an intuitive factor for comparison, the stores were classified as follows:

Type	Store Number
National chain:	1,2,5
Regional chain:	4,7
Local chain:	6
Cooperative Affiliated Independent:	3



Variance ¢	Times #
0	15
1	24
2	11
3	3
Avg.	1.037¢

Figure 2. Lansing Market Average Price: Actual versus Calculated.
Calculation Assumption: That retail price reflects wholesale price at a lag of one week (December 15 retail price reflects December 8 wholesale price).

These classifications are in accordance with commonly accepted standards maintained by the supermarket industry for categorizing supermarkets.

There are many different data analyses and comparisons presented in this text. In an attempt by the author to facilitate better total understanding and quicker coverage of the results, sub-titles will be used. The sub-titles used are as follows:

Period Information

This section presents the average prices, the price range widths, the standard deviations and where applicable the number of "special sales" for the period.

Linear Regression Results

This section presents the linear regression results that were performed on the data from the period.

Covariance Results

This section presents the results of the covariance analyses performed on the data from the period.

Average Prices

This section presents the average prices per wholesale price levels present in the period.

Retail Margins

This section presents the retail margins for the period.

Farm-Wholesale Data

The average farm prices and the average farm-wholesale margins per wholesale price levels are presented.

Farm-Retail Margins

This section presents the average farm-retail margins per wholesale price level for the period.

Rates of Price Change

This section presents the average rates of price change for all changes in price, increases and decreases.

Price Response

This section presents the net reaction of retail prices and the farm price to changes in the wholesale price.

Price Change Increments

This section outlines the price increments used when prices changed.

High Price

This section presents the high prices, low prices, high margins and low margins observed for the retail stores.

Mode Prices

This section presents the two most occurring retail prices for each store.

Odd Prices

The percentages of odd prices and even price change increments are presented in this section.

53-Week Period

October 24, 1969 to October 23, 1970

General Characteristics

This portion of the study occurred during a period of high egg prices. The price cycle was at its peak during the first third of the study. Prices decreased rapidly from January, 1970 through June, 1970, and increased slightly during the last quarter. Retail prices "peaked" at 85.0 cents per dozen for large A eggs and "bottomed" at 43.0 cents per dozen. Farm prices for large eggs ranged from 26.0 to 58.0 cents per dozen.

53 Weeks Large A

Period Information

Table 1 presents the average price, the price range width and the standard deviation respectively for the farm price, the wholesale price, the Urner-Barry quotation, the seven stores and the Lansing Market Average. In addition the number of "specials" for the respective stores is listed.

Among the stores, store 5 had the high average price of 64.75 cents per dozen while the 58.92 cents per dozen for store 7 was the lowest. Store 6 had the lowest variance among the stores with a standard deviation of 9.96 cents. Conversely, store 4 had the highest variance in price with a standard deviation of 12.61 cents. It is interesting to note that the farm price, the wholesale price, and the Urner-Barry quotation all had very similar standard deviations.

The widest price range was the 40 cents of store 3. The narrowest range of 32 cents was for both the farm price and store 6. Store 1

Table 1. Average Prices, Price Range Widths, Standard Deviations and Special Sales--53 Week, Large A

Price Source	Avg. Price ¢	Price Range Width ¢	Standard Deviation ¢	Special Sales #
Farm	40.43	32	10.22	-*
Wholesale	50.32	33	10.32	-*
Urner-Barry[a]	46.77	33	10.22	-*
Store 1	62.62	35	11.24	8
Store 2	64.59	36	11.58	4
Store 3	63.53	40	12.55	0
Store 4	64.28	39	12.61	6
Store 5	64.75	36	11.23	2
Store 6	61.42	32	9.96	1
Store 7	58.92	35	10.75	1
Lansing[b]	62.59	34.71	11.08	-*

*Special sales not applicable.

[a]Urner-Barry Quote (used by permission).

[b]Lansing Market Average.

had the most "special sales" with eight. Store 3 had the least with none. The remaining stores varied between the two in a relatively even manner.

Linear Regression Results

The regression results also produced close similarities. The analysis, farm price equals P (wholesale price), had a R value of .9886 ($P < 0.001$). The regression constant was -8.83 cents per dozen and the regression multiplier was .9789.* This indicates a near constant relationship between the wholesale price and the farm price. However, as wholesale price increased, farm price would not increase as rapidly; such that a slightly expanding farm-wholesale margin would evolve.

The analysis, wholesale price equals P (Urner-Barry Quote), had a R value of .9936 ($P < 0.001$). The constant term was 3.40 cents per dozen and the multiplier was 1.00. As a result the Urner-Barry quote-wholesale price relationship would be constant at all price levels.

The Lansing Market Average equals P (wholesale price) R value was .9930 ($P < 0.001$). The regression constant was 8.93 cents per dozen and the regression multiplier was 1.06. Thus, as wholesale price increased, the Lansing Market Average would increase faster, giving an expanding retail margin.

The Lansing Market Average equals P (farm price) analysis yielded an R value of .9877 ($P < 0.001$). The constant term was 19.28 cents

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*The analysis of variance mean square, sum of squares, degrees of freedom and F ratios are listed for all regression analyses in Appendix II.

per dozen with the multiplier factor being 1.07. Thus, as farm price increased the farm-retail margin would be expected to expand.

Covariance Results

As mentioned, covariance models were used to test the difference between stores. The null hypothesis that fixed costs were equal for the stores was rejected by an F ratio significant at the $P < 0.01$ level. The null hypothesis that the markup over fixed cost was equal for the stores was rejected by an F ratio significant at the $P < 0.01$ level. Simultaneous testing of both null hypotheses also commanded a rejection decision.

Average Prices

Table 2 presents the average prices per wholesale price level for the wholesale price, Lansing Market Average price, and the seven stores. The average low price leader, store 7, maintained its position at all levels except level two where store 6 had a slightly lower average price.

The average high price leader, store 5, maintained that position on only three of the eight levels. It was noted that the average prices of stores 2, 4, and 5 were within .47 cents per dozen of one another. One of these three stores commanded the high price on every level with the exception of level one where store 3 had the high price. The lowest average price was 46.16 cents per dozen for store 7. The highest average price was the 82.64 cents per dozen for store 3.

Table 2. Average Prices Per Wholesale Price Level--53 Week, Large A

Price Level	Price Source								
	Whl[a]	Lan[b]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Dozen								
63-68	66.00	79.71	77.91	80.27	82.64	81.91	81.09	76.73	75.36
59-62	60.00	71.90	71.00	74.33	74.33	74.67	74.00	67.67	68.33
54-58	55.67	68.06	68.50	71.00	69.00	65.50	68.33	65.33	64.00
50-53	51.78	64.76	63.88	68.00	66.44	66.57	66.56	63.13	59.89
46-49	48.20	60.31	60.60	61.50	61.40	62.33	61.80	59.00	57.80
42-45	43.75	55.04	55.83	57.25	55.00	54.17	56.88	54.87	52.00
39-41	39.89	51.45	51.40	53.50	51.38	52.00	55.00	51.00	48.50
35-38	36.50	47.05	45.67	47.80	46.33	47.67	48.33	48.00	46.16
Avg.	50.32	62.59	62.62	64.59	63.53	64.28	64.75	61.42	58.92

[a]Wholesale Price.

[b]Lansing Market Average.

*Store Number.

Retail Margins

Table 3 presents the retail margins by price level for the seven stores and the Lansing Market Average. The same relative positions among stores as were found for the average prices (Table 2) were found in the retail margin comparison.

Store 7 was the low average margin leader with 8.60 cents per dozen. It maintained that position on all levels except level two where store 6 was low. Stores 2, 4, 5 had very similar average retail margins. One of these three stores had the high margin on every price level except price level one where store 3 maintained the high average margin of 16.64 cents per dozen. The lowest average margin was the 7.67 cents per dozen of store 6 on level two.

The regression results indicated an expanding retail margin as wholesale price increased. That occurrence is illustrated in this table (3). The Lansing Market Average retail margin did expand slightly. This trend was also evident in stores 1, 2, 3, 4 and 5. Stores 6 and 7, on the other hand, did not follow that pattern. Store 6 had a slightly declining margin as wholesale price rose and store 7 had a near constant margin as wholesale price rose.

The differences in margins by level for the Lansing Market Average were significant at the $P < 0.01$ level. The differences between stores for their yearly average margins were also significant at the $P < 0.01$ level.

Farm-Wholesale Data

Table 4 presents the average farm prices and the average farm-wholesale margins per wholesale price level plus the period's average for the two quantities. The average farm price was 40.43 cents per

Table 3. Average Retail Margins Per Wholesale Price Level--53 Week, Large A

Price Level	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Dozen							
63-68	13.71	11.91	14.27	16.64	15.91	15.09	10.73	9.36
59-62	11.90	11.00	14.33	14.33	14.67	14.00	7.67	8.33
54-58	12.39	12.83	15.33	13.33	9.83	12.66	9.66	8.33
50-53	12.98	12.10	16.22	14.66	14.79	14.78	11.35	8.11
46-49	12.11	12.40	13.30	13.20	14.13	13.60	10.80	9.60
42-45	11.29	12.08	13.50	11.25	10.42	13.13	11.12	8.25
39-41	11.56	11.51	13.61	11.49	12.11	15.11	11.11	8.61
35-38	10.55	9.17	11.30	9.83	11.17	11.83	11.50	9.66
Avg.	12.27	12.30	14.27	13.21	13.96	14.43	11.10	8.60

[a]Lansing Market Average.

*Store Number.

Table 4. Average Farm Prices and Average Farm-Wholesale Margins Per Wholesale Price Level--53 Week, Large A

Price Level	63-68	59-62	54-58	50-53	46-49	42-45	39-41	35-38	Avg.
	Cents Per Dozen								
Farm Price	56.18	50.00	45.00	51.78	37.80	34.00	30.25	27.18	40.43
Margin	9.82	10.00	10.67	10.22	10.40	9.75	9.64	9.33	9.89

dozen. It ranged from a low price level value of 27.17 cents per dozen to a high of 56.18 cents per dozen. The farm-wholesale margin averaged 9.89 cents per dozen for the year. Regression results indicated a very slightly expanding farm-wholesale margin. This is illustrated in Table 4.

Farm-Retail Margins

Table 5 presents the average farm-retail margins per price level for the stores and the Lansing Market Average. The same relationships among stores that existed for Tables 2 and 3 existed in Table 5. Store 7 was the low margin store for the year with an average margin of 18.49 cents per dozen. Store 5 was the high average store with a margin of 24.32 cents per dozen. The differences between the averages of the stores were significant at the $P < 0.01$ level.

Regression analysis indicated an expanding farm-retail margin for the Lansing Market Average. The low farm-retail margin of 19.88 cents per dozen expanded into 23.53 cents per dozen, the high margin. The differences between the margins of the Lansing Market Average were significant at the $P < 0.01$ level.

The farm-retail margins expanded as wholesale price increased for all of the stores except 6 and 7. Store 6 had a nearly constant or possibly a slightly declining margin as wholesale price increased. Store 7 had a nearly constant margin over the eight price levels.

Rates of Price Change

Table 6 presents the average rates of price change for average changes, for increases and for decreases in price. The average rate

Table 5. Average Farm-Retail Margins Per Wholesale Price Level--53 Week, Large A

Price Level	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Dozen							
63-68	23.53	21.73	24.09	26.46	25.73	24.91	20.55	19.18
59-62	21.90	21.00	24.33	24.33	24.67	24.00	17.67	18.33
54-58	23.06	23.50	26.00	24.00	20.50	23.33	20.33	19.00
50-53	23.20	22.32	26.44	24.88	25.01	25.00	21.57	18.33
46-49	22.51	22.80	23.70	23.60	24.53	24.00	21.20	20.00
42-45	21.04	21.83	23.25	21.00	20.17	22.88	20.87	18.00
39-41	21.20	21.15	23.25	21.13	21.75	24.75	20.75	18.25
35-38	19.88	18.50	20.63	19.16	20.50	21.16	20.83	18.99
Avg.	22.16	22.19	24.16	23.10	23.85	24.32	20.99	18.49

[a]Lansing Market Average.

*Store Number.

Table 6. Average Rates of Price Change--53 Week, Large A

Price Change	Price Source										
	Whl[a]	Lan[b]	1*	2*	3*	4*	5*	6*	7*	U/B[c]	Farm
	Cents Per Price Change										
Avg. Change	2.85	2.25	3.89	3.41	3.49	3.68	3.27	4.06	3.88	2.85	2.27
Increase	2.52	1.84	3.33	3.76	2.69	3.09	2.39	3.65	3.22	2.43	2.00
Decrease	3.20	2.74	4.53	2.80	4.50	4.06	4.71	4.53	4.67	3.30	2.57

[a]Wholesale Price.

[b]Lansing Market Average.

[c]Urner-Barry Quotation.

*Store Number.

of price change was defined as the sum of all price changes divided by the number of price changes.

The Urner-Barry Quote increased by smaller average rates and decreased by larger average rates than did the wholesale price. The farm price moved in smaller average rates for all three price change measures than did the wholesale price. The price change rates for the farm, wholesale and Urner-Barry Quote were larger for falling prices compared to rising prices.

When calculating price changes for the seven stores, the price change was eliminated for that week when a "special sale" occurred. The price change for the week following the "special sale" week was also eliminated because it too would be an "abnormal" price change by virtue of the fact that the store was moving from an "abnormally low price" back to a "normal price level."

All stores, except store 2, exhibited larger average price change rates for decreasing prices compared to increasing prices. Store 2 had the reverse case. Store 2 had the highest average rate of change of 3.76 cents per change while store 5 had the lowest amount of average change which was 2.39 cents per change, both of which occurred when prices increased. The reverse was true for falling prices. The 2.8 cents per change of store 2 was the low amount for the stores while 4.71 cents per change for store 5 was the high amount. The Lansing Market Average increased an average of 1.84 cents per change and decreased at an average of 2.74 cents per change.

Price Response

Table 7 presents the net response to wholesale price change for average price changes, price increases and price decreases for retail

Table 7. Retail Prices and Farm Price Net Response to Wholesale Price Changes--53 Week, Large A

Price Change	Price Source									
	Whl[a]	Lan[b]	1*	2*	3*	4*	5*	6*	7*	Farm
	Cents Per Price Change									
Avg. Change	1	.91	.97	.68	1.05	.75	.85	.85	.99	.67
Increase	+1	.88	.79	1.03	.96	.52	.62	.87	.95	.68
Decrease	-1	.92	1.13	.33	1.11	.86	1.11	.83	1.02	.67
Steady Price	0	+.24	+.33	-.75	-.11	-.22	+.22	+.11	+.11	0.0

[a]Wholesale Price.

[b]Lansing Market Average.

*Store Number.

and farm prices. In addition, it presents price response when the wholesale price held steady. A 1.00 cents per change reading indicated that the listing responded to changes in the wholesale price on a one to one basis.

Store 3 was the only store for all price changes (average change) to have a net response greater than 1.00. Stores 1 and 7 were slightly below the 1.00 reading. The Lansing Market Average had an average change reading of .91 cents per change. When price increased store 2 was the only store to have a greater than 1.00 cents per change response. Stores 1, 3, 5 and 7 had values greater than 1.00 cents per change when prices decreased. The other listings had less than 1.00 readings. The net responses were greater for price decreases than for price increases for all the listings with the exceptions of stores 2 and 6. The reverse case occurred for those two stores.

When the wholesale price classification did not change, four of the seven stores had net average increases. The Lansing Market Average had a net average increase of .24 cents per change. Stores 3, 6 and 7 had the lowest net average changes. Store 2 had the most movement when the wholesale price did not change.

Price Change Increments

Table 8 presents the most common occurring price change increment values for the respective listings. The column labeled LAN was the accumulative value for the seven stores.

The majority of the price increases for the wholesale price, the Urner-Barry Quote and the farm price were confined to the 1, 2 and 3 cent increments. The Lansing Market used the 2 cent increment the most.

Table 8. Most Common Increments of Price Change--53 Week, Large A

Price Increment	Price Source										
	Whl[a]	U/B[b]	Farm	Lan[c]	1*	2*	3*	4*	5*	6*	7*
(cents)	Percent										
+ 1	28.56	33.35	43.50	17.07			13.04	27.27	34.78	6.25	33.33
+ 2	33.32	14.28	21.73	35.77	53.33	35.30	52.18	18.18	26.09	50.00	11.11
+ 3	9.52	33.35	21.73	4.07	6.67			9.10	13.04		
+ 4	14.30	14.28	13.04	26.02	13.33	41.18	26.08	27.27	21.74	18.75	33.33
+ 5	14.30	4.74		3.25	13.33		4.35				5.56
+ 6				9.76	6.67	23.52	4.35	18.18	4.35	6.25	11.11
+ 7				2.44	6.67					6.25	5.56
+ 8				0.81						6.25	
+ 9				0.00						6.25	
+10				0.81							
- 1	20.00	15.00	19.04	10.80	7.69			23.53	21.46	20.01	
- 2	20.00	30.00	42.84	24.51	15.38	70.00	44.44			26.63	26.63
- 3	25.00	25.00	14.30	6.86	7.69			11.76	14.28		13.34
- 4	15.00	10.00	14.30	19.61	30.79	20.00	5.56	35.30	28.56	13.34	6.67
- 5	15.00	5.00	4.76	11.76	15.38		11.11	17.65	14.28	6.67	13.34
- 6		5.00	4.76	11.76	7.69	10.00	22.22	5.88	7.14	6.67	20.01
- 7		5.00		2.94			5.56			6.67	6.67
- 8				2.94						13.34	6.67
- 9				1.96	7.69						6.67
-10		5.00		3.92	7.69		11.11		7.14		
>-10	5.00			2.94				5.88	7.14	6.67	

[a]Wholesale Price.

[b]Urner-Barry quotation.

[c]Lansing Market (an accumulative value).

*Store Number.

Store 2 with the 4 cent increment had the highest mode amount for price increases. Store 5 used the one cent increment most often.

The farm price and the wholesale price utilized a larger increment of change when prices declined. The range of increments increased for the Urner-Barry quote and the farm price. Although the mode value remained at 2 cents for the Lansing Market and most of the stores, the distribution of increment values widened considerably. An indication of this was the fact that 52.84 percent of all advances were in the 1 cent to 2 cents category and 86.18 percent of all advances were in the increment range of 5 cents or less. On the other hand, only 35.29 percent of all price decreases were in the 1 cent to 2 cents range and the 5 cents or less range had only 73.53 percent of all declines.

High Price

Table 9 presents the high prices, the low prices, the number of times those prices were reported and the average margins at those prices for the seven stores and the Lansing Market Average. In addition, the high margins, the low margins, the number of times those margins were observed and the prices at those margins are included.

Stores 3 and 4 had the highest observed price of 85 cents per dozen while store 7 had the lowest high price of 78 cents per dozen. Store 1 observed its high price six times while stores 2, 3 and 5 observed their high prices four times each, store 6 two times and stores 4 and 7, and the Lansing Market Average observed their high price only one time each during the period. The average margin recorded for the stores at their high price was an arithmetic average of the margins observed at that price. Store 4 had the high average margin of 19.00 cents per dozen while store 7 was the low average margin store with 10.00 cents per dozen.

The second part of Table 9 presents the lowest prices observed, the number of times that price was observed and the average margins at the low prices. Stores 2, 5 and 6 had the high readings of the low prices with a price of 47 cents per dozen. Store 7, on the other hand, was the low store with 43 cents per dozen. Store 6 observed its low price four times while store 7 and the Lansing Market Average observed their low prices only one time.

For the average margins at the low price, store 5 with its average margin of 12.50 cents per dozen was the high average margin store while store 1 was the low average margin store with 6.50 cents per dozen.

Store 2 had the highest margin of all the stores with 20 cents per dozen while store 7 had the low among the high margins with 12 cents per dozen. Five of the stores, 2, 3, 4, 5 and 6, had high margins of 18-20 cents per dozen. The most times a high margin was observed was three times for store 7. Stores 2, 3 and 4 and the Lansing Market Average observed their high margins only once each. Store 4 was the only store whose high margin and the high price occurred simultaneously.

The last part of Table 9 presents the low margins, the number of times they were observed and the prices at which those margins were observed. The lowest margin was observed by store 7 with 5 cents per dozen. The high of the low margins among the stores was 8 cents per dozen observed by stores 2, 3, 4 and 5. The Lansing Market Average had the largest low margin of 8.71 cents per dozen. Store 1 was the only store that had its low margin and low price occur at the same time.

Table 9. Retail High Prices, Low Prices, Times Observed and Margins at Those Prices; High Margins, Low Margins, Times Observed and Prices at Those Margins--53 Week, Large A

	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
High Price[b]	81.00	79	83	85	85	83	79	78
Times Observed	1	6	4	4	1	4	2	1
Avg. Margin[b]	13.00	11.83	16.00	17.25	19.00	16.25	12.50	10.00
Low Price[b]	46.29	44	47	45	46	47	47	43
Times Observed	1	2	3	2	2	2	4	1
Avg. Margin[b]	11.29	6.50	11.00	9.50	11.00	12.50	10.50	7.00
High Margin[b]	15.25	15	20	19	19	19	18	12
Times Observed	1	2	1	1	1	2	2	3
Prices[b]	65.25	65,59	65	63	85	59,72	63,53	49,47,61
Low Margin[b]	8.71	6	8	8	8	8	7	5
Times Observed	1	1	1	1	1	3	3	1
Prices[b]	53.71	44	53	53	53	57,53,62	51,69,63	57

[a]Lansing Market Average.

[b]Cents Per Dozen.

*Store Number.

Table 10. Two Most Occurring Retail Prices and Frequency of Occurrence--53 Week, Large A

	Price Source							
	Lan[c]	1*	2*	3*	4*	5*	6*	7*
Price[a]	53	79	53	53	83	49	63	49
% Time[b]	7.16	13.20	16.00	9.43	10.65	7.84	17.28	11.52
Price[a]	63	77	69	47	51	55	55	61
% Time[b]	6.59	8.80	14.00	7.55	8.52	7.84	13.44	11.52

[a]Cents per dozen.

[b]Percentage--number of occurrences.

[c]Lansing Market (an accumulative value).

*Store Number.

Table 11. Percentage Odd Prices and Percentage Even Price Change Increments at Retail--53 Week, Large A

	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
Prices	89.76	88.68	100.00	96.23	77.36	83.02	96.23	86.79
Change Increments	68.88	75.00	100.00	82.93	53.57	66.67	74.19	57.57

[a]Lansing Market (an accumulative value).

*Store Number.

Mode Prices

Table 10 presents the two most occurring retail prices and the percentage of time that they occurred. The Lansing Market is an accumulative value of the seven stores. Store 4 had the highest price of 83 cents per dozen while stores 5 and 7 had the lowest price of 49 cents per dozen. The Lansing Market had 53 cents per dozen as its most frequently occurring price.

Odd Prices

Table 11 presents the percentage of odd prices and the percentage of even increments of price change. Store 2 had 100 percent odd prices while store 4 had the fewest odd prices with 77.36 percent. Store 4 also had the least number of even increments, 53.57 percents, while store 2 had the highest with 100 percent.

53 Weeks Medium A

Period Information

Table 12 presents the average prices, the price range widths, the standard deviations, and the number of special sales, where applicable. The price range width and the standard deviation for the farm price, the wholesale price and the Urner-Barry quotation were quite similar. However, there was a wide difference between the stores.

Store 2 had the high average price of 57.17 cents per dozen, while store 7 had the low average price of 52.89 cents per dozen. Store 3 with a standard deviation of 14.32 cents exhibited the most variance in its price, while store 6 with an 11.79 cents standard deviation exhibited the least amount of variance among the stores. However, the least amount of price variance of all the listings was exhibited by the wholesale price with a standard deviation of 11.75 cents.

Table 12. Average Prices, Price Range Widths, Standard Deviations and Special Sales--53 Week, Medium A

Price Source	Avg. Price ¢	Price Range Width ¢	Standard Deviation ¢	Special Sales #
Farm	32.59	35	11.87	--*
Wholesale	43.26	37	11.75	--*
Urner-Barry	40.30	38	12.35	--*
Store 1	55.72	40	13.81	10
Store 2	57.17	45	13.72	5
Store 3	55.94	42	14.32	2
Store 4	57.13	42	13.37	7
Store 5	56.76	43	13.33	8
Store 6	53.87	34	11.79	5
Store 7	52.89	40	13.69	6
Lansing[a]	54.91	39.14	13.18	--*

*Special sales not applicable.

[a]Lansing Market Average.

Store 1 had the most special sales, while store 3 had the least. Store 1 with 10 specials had a special sale every five weeks, whereas store 3 with 2 specials had a special sale only twice during the 53 weeks.

Linear Regression Results

The linear regression analysis, farm price equals P (wholesale price) yielded an R value of .9904 ($P < 0.001$), a regression constant of 10.68 cents per dozen and a multiplier of 1.00. Thus a constant farm-wholesale margin of 10.68 cents per dozen would be expected for all price levels.

The analysis, wholesale price equals P (Urner-Barry quotation) yielded an R value of .9923 ($P < 0.001$). The regression constant was 5.30 cents per dozen and the multiplier was .94. Thus as the Urner-Barry quote decreased, an expanding margin between it and the wholesale price would be expected.

The analysis, Lansing Market Average equals P (wholesale price) yielded an R value of .9923 ($P < 0.001$). The regression constant was 6.76 cents per dozen while the multiplier term was 1.11. Thus an expanding retail margin would be anticipated as the wholesale price increased.

The analysis, Lansing Market Average equals P (farm price) had an R value of .9904 ($P < 0.001$). The regression constant was 19.07 cents per dozen and the multiplier was 1.10. Thus as farm price increased an expanding farm-retail margin would be expected.

Covariance Results

The covariance analysis rejected the null hypothesis that fixed costs for the stores were equal. A rejection decision was also obtained

for the null hypothesis that the percentage markup over fixed costs were equal for the stores. The combination, of the two null hypotheses that there were no significant differences between the margins of the stores, was also rejected. All three of the above mentioned rejection decisions had significance levels of $P < 0.01$.

Average Prices

Table 13 presents the average price for the stores per wholesale price level. Store 7 was the low average price leader with 52.89 cents per dozen for the period. It maintained that position on five of the eight price levels.

The average prices for the 53 weeks for stores 2, 4 and 5 were extremely close, but store 2 had the high average price of 57.17 cents per dozen. One of these three stores had the high price for seven of the eight price levels. The lowest average price was 36.33 cents per dozen reported for store 7 while the highest average price was 78.20 cents per dozen for store 4.

The differences between the stores average prices and between the price levels of the Lansing Market Average were significant at the $P < 0.01$ level.

Retail Margins

Table 14 presents the average retail margins for the stores per price level. Store 7 had the lowest average margin for the period with 9.61 cents per dozen. Store 2 had the high average margin for the period with 13.89 cents per dozen with stores 4 and 5 very close. Store 7 maintained its low average margin position on five of the eight price levels. Stores 2, 4 and 5 accounted for the high margin

Table 13. Average Prices Per Wholesale Price Level--53 Week, Medium A

Price Level	Whl[a]	Lan[b]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Dozen								
59-64	61.60	75.80	75.30	76.90	78.00	78.20	76.00	72.20	74.00
54-58	56.75	69.76	68.25	71.50	71.00	71.50	69.75	67.67	67.67
48-53	49.50	60.95	60.50	63.00	61.50	64.00	59.75	59.00	58.33
43-47	45.00	57.40	56.33	60.60	58.80	58.00	57.50	55.50	53.50
39-42	39.00	49.76	50.00	48.50	53.00	51.50	46.50	50.33	48.67
35-38	37.00	47.79	48.70	50.00	47.58	47.40	48.36	47.42	45.18
31-34	32.22	43.64	42.00	45.00	42.56	44.50	45.80	44.22	41.86
27-30	29.50	38.30	38.20	38.00	37.80	39.00	38.40	40.60	36.33
Avg.	43.26	54.92	55.72	57.17	55.94	57.13	56.76	53.87	52.89

[a] Wholesale Price.

[b] Lansing Market Average.

* Store Number.

Table 14. Average Retail Margins Per Wholesale Price Level--53 Week, Medium A

Price Level	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Dozen							
59-64	14.20	13.70	15.30	16.40	16.60	14.40	10.60	12.40
54-58	13.01	11.50	14.75	14.25	14.75	13.00	10.92	10.92
48-53	11.45	11.00	13.50	12.00	14.50	10.25	9.50	8.83
43-47	12.40	11.33	15.60	14.80	14.00	12.50	10.50	8.50
39-42	10.76	11.00	9.50	14.00	12.50	7.50	11.33	9.67
35-38	10.79	11.70	13.00	10.58	10.40	11.36	10.42	8.18
31-34	11.42	9.78	12.78	10.34	12.28	13.58	12.00	9.64
27-30	8.80	8.70	8.50	8.30	9.50	8.90	11.10	6.83
Avg.	11.66	12.44	13.89	12.66	13.85	13.48	10.59	9.61

[a]Lansing Market Average.

*Store Number.

on seven of the eight price levels. The lowest average margin reported was the 6.83 cents per dozen for store 7. The highest average margin was the 16.60 cents per dozen reported for store 4. This table illustrates the extent of the expanding retail margin as price increased, that was indicated by the regression analysis. All the stores except store 6 had expanding margins. Store 6 had a slightly declining margin as the wholesale price increased.

Farm-Wholesale Data

Table 15 presents the average farm prices and the average farm-wholesale margins per wholesale price level. The regression analysis indicated a constant farm-wholesale margin of 10.68 cents per dozen. The average margin for the period was 10.67 cents per dozen. The average farm price was 32.59 cents per dozen.

Farm-Retail Margins

Table 16 presents the farm-retail margins per wholesale price level for the stores. The same relationships that existed among the stores for the average prices and retail margins (Tables 13 and 14) existed for the farm-retail margins. For the period, store 7 was the low average margin store, while store 2 was the high average margin store.

The largest average farm-retail margin was 27.00 cents per dozen for store 4. The smallest average farm-retail margin was 17.33 cents per dozen for store 7. The farm-retail margin expanded as wholesale price increased for all the listings except store 6. The farm-retail margin for store 6 remained relatively constant over the eight price levels. This table illustrates the expanding margin indicated by the linear regression analysis.

Table 15. Average Farm Prices and Average Farm-Wholesale Margins Per Wholesale Price Level--53 Week, Medium A

Price Level	59-64	54-58	48-53	43-47	39-42	35-38	31-34	27-30	Avg.
	Cents Per Dozen								
Farm Price	51.20	46.75	37.00	35.00	30.00	25.42	21.78	19.00	32.59
Margin	10.40	10.00	12.50	10.00	9.00	11.58	10.44	10.50	10.67

Table 16. Average Farm-Retail Margins Per Wholesale Price Level--53 Week, Medium A

	Price Source							
Price Level	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Dozen							
59-64	24.60	24.10	25.70	26.80	27.00	24.80	21.00	24.80
54-58	23.01	21.50	24.75	24.25	24.75	23.00	20.92	20.92
48-53	23.95	23.50	26.00	24.50	27.00	22.75	22.00	21.33
43-47	22.40	21.33	25.60	24.80	24.00	22.50	20.50	18.50
39-42	19.76	20.00	18.50	23.00	21.50	16.50	20.33	18.67
35-38	22.37	23.28	24.58	22.16	21.98	22.94	22.00	19.76
31-34	21.86	20.22	23.22	20.78	22.72	24.02	22.44	20.08
27-30	19.30	19.20	19.00	18.80	20.00	19.40	21.60	17.33
Avg.	22.32	23.13	24.58	23.35	24.54	24.17	21.28	20.30

[a]Lansing Market Average.

*Store Number.

The differences between the price levels of the Lansing Market Average and the differences between the stores for their average farm-retail margins were both significant at the $P < 0.01$ level.

Rates of Price Change

Table 17 presents the average rates of price change for the listings; rates of change as defined previously in this text (page 37).

The average rates for the farm price were less than the wholesale price rates which were less than the rates of change for the Urner-Barry quotation. Store 1 had the high average rate for decreasing prices with 6.00 cents per change while store 2 had the low average rate of 3.79 cents per change. Store 2 had the high average rate of price change for increasing prices with 4.23 cents per change. Store 6 had the low average rate with 2.89 cents per change. The average rate of price change for declining prices was greater than for increasing prices for all of the listings.

Price Response

Table 18 presents responses to wholesale price changes for the retail prices and the farm price. In addition, the net responses that occurred for the listings when the wholesale price did not change are included. For all the listings except the farm price, the response for rising prices was greater than the response for falling prices. For the farm price, the two responses were identical.

When the wholesale price did not move, the farm price, the Lansing Market Average, and stores 1, 2, 5, 6 and 7 had net declines in price. Stores 3 and 4 had net increases in price. The greatest net deviation from zero was the net decline of 2.57 cents per change for store 5.

Table 17. Average Rates of Price Change--53 Week, Medium A

Price Change	Price Source										
	Whl[a]	Lan[b]	1*	2*	3*	4*	5*	6*	7*	U/B[c]	Farm
	Cents Per Price Change										
Avg. Change	2.74	2.86	3.95	4.00	3.97	4.29	4.10	4.00	3.65	3.42	2.23
Increase	2.17	2.41	3.00	4.23	3.65	4.08	3.63	2.89	3.42	2.90	2.11
Decrease	3.47	3.58	6.00	3.79	4.38	4.57	5.60	5.25	4.10	4.00	2.46

[a]Wholesale Price.

[b]Lansing Market Average.

[c]Urner-Barry Quotation.

*Store Number.

Table 18. Retail Prices and Farm Price Net Response to Wholesale Price Changes

Price Change	Price Source									
	Whl[a]	Lan[b]	1*	2*	3*	4*	5*	6*	7*	Farm
	Cents Per Price Change									
Avg. Change	1	.84	.72	.58	1.07	1.07	.63	.40	.62	.58
Increase	+1	.84	1.01	.74	1.11	1.16	1.10	.41	.70	.58
Decrease	-1	.83	.47	.45	1.03	1.03	.06	.37	.58	.58
Steady Price	0	-.18	-.57	-.57	+.82	+1.57	-2.57	-1.43	-2.33	-.88

[a]Wholesale Price.

[b]Lansing Market Average.

*Store Number.

The smallest net deviation from zero was .18 cents per change of the Lansing Market Average.

Price Change Increments

Table 19 presents the price increments used by the listings when their prices changed. The majority of price changes by the wholesale price, the Urner-Barry quote, and the farm price for rising prices used the 1 cent increment. The Lansing Market (an accumulative value) used the 2 cent increment the most. Among the stores, 2 and 3 had the high mode values of 4 cents.

The mode values for the wholesale price, the Urner-Barry quote, the farm price, and stores 1, 6 and 7 increased when prices declined. The Lansing Market's mode value moved to 2 cents and 4 cents. The mode value for store 3 dropped from 4 cents for rising prices to 2 cents for falling prices. Store 5 did not have a specified value for decreasing prices. Stores 2 and 4 had their mode increments remain constant.

The 1 cent to 2 cent increment range was used for 39.42 percent of all retail price changes for price increases. The 1 cent to 5 cent increment range was used for price advances 82.69 percent of the time. When prices decreased, 32.88 percent of all retail price changes were included in the 1 cent to 2 cent price range. The 1 cent to 5 cent range contained 71.23 percent of all decreasing price changes. This table also revealed the extent of the shift to larger increments of price change for decreasing prices compared to increasing prices.

High Price

Table 20 presents the high prices, the low prices, the number of times each was observed and the average margins at those

Table 19. Most Common Increments of Price Change--53 Week, Medium A

Price Increment	Price Source										
	Whl[a]	U/B[b]	Farm	Lan[c]	1*	2*	3*	4*	5*	6*	7*
(cents)	Percent										
+ 1	45.87	30.00	38.92	12.51	13.34		4.76	21.46	18.75	44.44	
+ 2	16.60	15.00	27.80	27.88	40.02	28.56	38.08	14.28	18.75		50.02
+ 3	20.85	20.00	22.24	6.73	20.01			14.28		11.11	8.33
+ 4	12.51	15.00	5.52	26.92	20.01	35.74	42.88	14.28	25.00	22.23	24.99
+ 5		10.00	5.52	9.62		7.14		14.28	18.75	11.11	
+ 6	4.17	10.00		9.62		28.56	4.76		18.75	11.11	8.33
+ 7				.96				7.14			
+ 8				2.88			4.76	7.14			8.33
+ 9				0.0							
≥+10				2.88	6.62		4.76	7.14			
- 1	21.04	11.11	27.20	10.01				33.32		12.50	20.00
- 2	26.30	11.11	22.75	24.31	16.67	35.74	35.28		20.00		40.00
- 3	15.78	27.78	31.85	5.72		7.14	5.88	8.33		12.50	
- 4	5.29	27.78	13.65	24.31	33.32	42.84	29.44	16.70	20.00		10.00
- 5	10.52	11.11	4.55	7.15		7.14	5.88	8.33	20.00	12.50	
- 6	15.78			12.87			11.76	24.99		37.50	10.00
- 7				2.76	16.67				20.00	12.50	
- 8		5.55		5.72	16.67	7.14				12.50	20.00
- 9				0.0							
≥-10	5.29	5.55		7.15	16.67		11.76	8.33	20.00		

[a] Wholesale Price.

[b] Urner-Barry Quotation.

[c] Lansing Market (an accumulative value).

* Store Number.

Table 20. Retail High Prices, Low Prices, Times Observed and Margins at Those Prices; High Margins, Low Margins, Times Observed and Prices at Those Margins--53 Week, Medium A

	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
High Price[b]	76.85	77	79	79	79	79	73	75
Times Observed	3	5	4	7	5	1	9	7
Avg. Margin[b]	13.18	13.60	16.00	16.29	15.60	20.00	11.22	12.29
Low Price[b]	37.71	37	34	37	37	36	39	35
Times Observed	1	2	1	3	1	1	5	2
Avg. Margin[b]	10.71	8.50	7.00	8.00	10.00	9.00	8.50	5.50
High Margin[b]	16.57	16	20	20	19	21	20	16
Times Observed	1	1	2	1	4	1	1	1
Prices[b]	75.57	75	71&79	79	76&78(3)	53	47	75
Low Margin[b]	7.28	6	7	7	7	6	8	5
Times Observed	1	2	2	3	1	3	7	3
Prices[b]	38.28	63&39	39&34	39&37(2)	45	43(2)&57	39(2) 59(3) 45&49	35&37&44

[a]Lansing Market Average.

[b]Cents Per Dozen.

*Store Number.

prices. In addition, the high margins, the low margins, the number of times each was observed and the prices at which those margins occurred is presented.

The high price observed was 79.00 cents per dozen for stores 2, 3, 4 and 5. The low point of the high prices was 73.00 cents per dozen for store 6. The most observations of a high price was the nine observations of store 6 while the least was one observation for store 5. The high average margin for the high prices was 20.00 cents per dozen for store 5, while store 6 had an average margin of 11.22 cents per dozen which was the low margin for the high prices.

The low price reported was 34.00 cents per dozen for store 2. The high point of the low prices was 39.00 cents per dozen for store 6. Stores 2, 4 and 5 and the Lansing Market Average observed their low prices only once each whereas store 6 observed its low price five times. The largest average margin at the low prices was the Lansing Market Average's 10.71 cents per dozen, followed by 10.00 cents per dozen for store 4. The low average margin was 5.50 cents per dozen for store 7.

The high margin observed during the study was 21.00 cents per dozen for store 5. Stores 2, 3, 4 and 6 were also close to this figure. The low reading belonged to stores 1 and 7 with 16.00 cents per dozen. Store 2 with two observations and store 4 with four observations were the only stores to observe their high margins more than once. Stores 3 and 7 had their high margin correspond with their high price.

The low margin reported was 5.00 cents per dozen for store 7. The high reading among the low margins was 8.00 cents per dozen for store 6. Seven observations for store 6 of its low margin was high while one observation for store 4 was low. Stores 2, 3, 6 and 7 had their low

margins and their low prices correspond at least once during the period.

Mode Prices

Table 21 presents the two most occurring retail prices for the listings and frequency of occurrence. The Lansing Market value presented here was an accumulative value. The two most occurring prices for the Lansing Market were 49.00 cents per dozen and 39.00 cents per dozen. Stores 1, 2 and 5 also had the 49.00 cents per dozen value as their mode price. The high mode price was 79.00 cents per dozen for store 3. The low mode price was 45.00 cents per dozen for store 7. Store 4 was the only store to have its two mode values observed the same amount of time.

Odd Prices

Table 22 presents the percentage of odd retail prices for the stores and the percentage of even price change increments for the stores. For the Lansing Market 85.70 percent of all Grade A medium egg retail prices for one dozen packs were established at an odd value. The store with the greatest percentage of odd prices was store 7 with 97.87 percent. Store 4 only had 64.15 percent of its egg prices established at odd values.

Even increments of price change were used 70.68 percent of the time by the Lansing Market. The high reading among the stores was 92.10 percent for store 3. Store 6 had the low reading with 41.11 percent.

Table 21. Two Most Occurring Retail Prices and Frequency of Occurrences 53 Week, Medium A

	Price Source							
	Lan[c]	1*	2*	3*	4*	5*	6*	7*
Price[a]	49	49	49	79	47	49	73	45
% Time[b]	9.61	13.98	14.56	13.72	10.85	11.10	16.64	21.30
Price	39	77	39	39	48	43	49	75
% Time	8.37	11.65	10.40	9.80	10.85	8.88	14.56	14.91

[a]Cents Per Dozen.

[b]Percentage--Number of Occurrences.

[c]Lansing Market (an accumulative value).

*Store Number.

Table 22. Percentage Odd Prices and Percentage Even Price Change Increments at Retail--53 Week, Medium A

	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Percent							
Prices	85.70	81.13	91.67	96.08	67.39	82.22	91.11	97.87
Change Increments	70.68	66.67	89.28	92.10	42.30	66.67	41.11	86.36

[a]Lansing Market (an accumulative value).

*Store Number.

20-Week Period

January 7, 1972 to May 19, 1972

General Characteristics

Egg prices were depressed during the 20-week portion of this study. Retail prices for large A eggs reached a high of 59 cents per dozen (85 cents--53-week). The low retail price was 38 cents per dozen (44 cents--53-week). Farm price ranged from 21 cents per dozen to 29 cents per dozen for large A eggs.

The general economy was in the midst of a federal government imposed price stabilization program. Prices were "frozen" at or near base prices established in the summer of 1971. The stabilization program did not, however, include fresh commodities such as eggs.

20 Weeks Large A

Period Information

Table 23 presents the average prices, the price range widths, the standard deviations and where applicable, the number of special sales. The farm price, wholesale price, Urner-Barry quote, Lansing Market Average and store 6 had similar price range widths and standard deviations. Stores 3, 4, 5 and 7 also had similar values. Stores 1 and 2, however, had higher values.

Store 1 reported the high average price among the stores with 52.85 cents per dozen while 43.45 cents per dozen for store 7 was the low average price. Store 1 also had the high amount of price variance among the listings with a standard deviation of 4.08 cents. Store 6 reported 2.35 cents which was the low standard deviation among the stores. The low standard deviation of 2.32 cents was reported for the Lansing Market Average.

Table 23. Average Prices, Price Range Widths, Standard Deviations, and Special Sales--20 Week, Large A

Price Source	Avg. Price ¢	Price Range Width ¢	Standard Deviation ¢	Special Sales #
Farm	24.55	8	2.39	--*
Wholesale	35.05	9	2.83	--*
Urner-Barry	33.25	9	2.80	--*
Store 1	52.85	15	4.08	0
Store 2	46.25	14	4.27	4
Store 3	47.95	10	3.33	0
Store 4	45.30	11	3.01	0
Store 5	45.60	10	2.84	0
Store 6	49.55	6	2.35	2
Store 7	43.45	10	2.60	0
Lansing[a]	47.31	7.96	2.32	--*

[a]Lansing Market Average.

*Special Sales Not Applicable.

Store 2 had the most special sales which was four. Store 6 with two specials was the only other store to have them.

Linear Regression Results

The linear regression analysis, farm price equals P (wholesale price) yielded an R value of .8324 ($P < 0.001$). The regression constant was -.07 cents per dozen; the multiplier was .70. The farm-wholesale margin would be expected to expand as the wholesale price increased.

The linear regression analysis, Lansing Market Average Price equals P (wholesale price) had an R value of .8956 ($P < 0.001$). The constant term was 21.59 cents per dozen while the multiplier was .73. Thus the retail margin would be expected to narrow as price increased.

The regression analysis, Lansing Market Average Price equals P (farm price) had an R value of .8474 ($P < 0.001$). The regression constant was 27.11 cents per dozen with the multiplier being .82. The farm-retail margin would be expected to narrow as price increased.

The regression analysis, wholesale price equals P (Urner-Barry Quotation) had an R value of .9895 ($P < 0.001$). The regression constant was 1.80 cents per dozen. The multiplier term was 1.00. Thus the wholesale price would be expected to be 1.80 cents per dozen above the Urner-Barry quote at all price levels.

Covariance Results

The covariance models were used to test the null hypotheses that the fixed costs for each store were equal, that the percentage markup above the fixed costs were equal, and that the combination of the two--retail margins--were equal. The results of the test statistics

rejected each null hypothesis presented above. The rejection of each was significant at the $P < 0.01$ level.

Average Prices

The two low price levels as defined in the large size 53-week period were found in the 20-week sample. However, the 20-week period also had one lower price level. The value of the low price level was the 31 cents to 34 cents wholesale price range.

Table 24 presents the average prices per wholesale price level. The low store for the period was number 7 with an average retail price of 43.45 cents per dozen. It maintained that position on all three of the price levels. The high store for the period was store 1 with an average retail price of 52.85 cents per dozen. It maintained its price leadership position on all three price levels.

Retail Margins

Table 25 presents the average retail margins per price level.

The linear regression analysis indicated a narrowing retail margin as wholesale price increased for the Lansing Market Average. This table more clearly illustrates that occurrence. Note that the average margin for the Lansing Market Average declined from the low price level average margin of 12.80 cents per dozen to 10.90 cents per dozen on the high price level.

The low average margin store was store 7 with 8.40 cents per dozen. The high margin store was number 1 with an average margin of 17.80 cents per dozen. Both stores maintained their respective price leadership positions on all three price levels. The highest average

Table 24. Average Prices Per Wholesale Price Level--20 Week, Large A

Price Level	Price Source								
	Whl[a]	Lan[b]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Dozen								
39-41	39.75	50.65	58.50	50.00	51.50	49.75	48.25	49.67	46.50
35-38	35.67	47.95	53.33	47.40	49.33	46.00	46.50	49.33	43.67
31-34	32.80	45.60	50.30	44.13	45.70	43.10	44.00	49.67	42.10
Avg.	35.05	47.31	52.85	46.25	47.95	45.30	45.60	49.55	43.45

[a]Wholesale Price.

[b]Lansing Market Average.

*Store Number.

Table 25. Average Retail Margins Per Wholesale Price Level--20 Week, Large A

Price Level	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Dozen							
39-41	10.90	18.75	10.25	11.75	10.00	8.50	9.92	6.75
35-38	12.28	17.66	11.73	13.66	10.33	10.83	13.66	8.00
31-34	12.80	17.50	11.33	12.90	10.30	11.20	16.87	9.30
Avg.	12.23	17.80	11.20	12.90	10.25	10.55	14.50	8.40

[a]Lansing Market Average.

*Store Number.

margin reported was 18.75 cents for store 1 while 6.75 cents per dozen for store 7 on the same price level was the lowest average margin reported.

Stores 2, 3, 5, 6 and 7 followed the narrowing retail margin pattern exhibited by the Lansing Market Average. Store 1, on the other hand, had an expanding retail margin as price increased while store 4 had a near constant margin.

The differences between the average retail margins of the stores were significant at the $P < 0.01$ level. The differences between the price level values for the Lansing Market Average, however, were not significant.

Farm-Wholesale Data

Table 26 presents the average farm prices and the average farm-wholesale margins per wholesale price level. The linear regression analysis indicated an expanding farm-wholesale margin as wholesale price increased. This table illustrates that occurrence, as the margin increased in value from 9.90 cents per dozen to 11.75 cents per dozen.

Farm-Retail Margins

Table 27 presents the average farm-retail margins per wholesale price level for the stores. The low average margin for the period was 18.90 cents per dozen for store 7. The high average margin for the period was 28.30 cents per dozen for store 1. Both stores maintained their respective price leadership positions on all three price levels. The lowest average farm-retail margin reported was 18.50 cents per dozen for store 7. The highest average margin reported was 30.50 cents per dozen for store 1.

Table 26. Average Farm Prices and Average Farm-Wholesale Margins Per Wholesale Price Level--20 Week, Large A

Price Level	39-41	35-38	31-34	Avg.
		Cents Per Dozen		
Farm Price	28.00	25.00	22.90	24.55
Margin	11.75	10.67	9.90	10.50

Table 27. Average Farm-Retail Margins Per Wholesale Price Level--20 Week, Large A

Price Level	Lan[a]	1*	2*	3*	4*	5*	6*	7*
				Price Source				
				Cents Per Dozen				
39-41	22.65	30.50	22.00	23.50	21.75	20.25	21.67	18.50
35-38	22.95	28.33	22.40	24.33	21.00	21.50	24.33	18.67
31-34	22.70	27.40	21.23	22.80	20.20	21.10	26.77	19.20
Avg.	22.73	28.30	21.70	23.40	20.75	21.05	25.00	18.90

[a]Lansing Market Average.

*Store Number.

The linear regression analysis indicated a narrowing farm-retail margin for the Lansing Market Average as the farm price increased. The data presented in Table 27 did not follow that prescribed pattern. The three average values presented are nearly identical and were not significantly different.

Stores 5, 6 and 7 had declining farm-retail margins as the farm price increased. Stores 1 and 4 had expanding margins. Stores 2 and 3 had farm-retail margin patterns that saw the low margin occur on the low price level, the high margin on the mid price level and the margin mid-value on the high price level. The differences between the average farm-retail margins for the period for the stores were significant at the $P < 0.01$ level.

Rates of Price Change

Table 28 presents the average rates of price change for the listings; rates of change as defined previously (see page 37). The average rates of change for the listings were greater for decreasing prices compared to increasing prices with the exception of stores 2, 4 and 7. Store 2 had identical values for both categories. However, stores 4 and 7 had larger average rates for increasing prices.

For average price changes, store 6 had the high average rate with 5.00 cents per change. The farm price had the lowest average rate with 2.00 cents per change. Among the seven stores, store 4 had the low average rate with 2.59 cents per change.

When prices increased, store 6 had the high average rate of price change with 4.00 cents per change. The low average rate among the stores was 2.22 cents per change for store 3. The low average rate in the table was 1.50 cents per change for the farm price.

Table 28. Average Rates of Price Change--20 Week, Large A

Price Change	Price Source										
	Whl[a]	Farm	U/B[b]	Lan[c]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Price Change										
Avg. Change	2.40	2.00	2.53	1.72	4.33	3.50	3.54	2.59	3.00	5.00	3.09
Increases	1.89	1.50	2.00	1.64	3.57	3.50	2.22	3.00	2.75	4.00	3.50
Decreases	3.17	2.57	3.33	1.79	5.40	3.50	6.50	2.30	3.25	6.00	2.86

[a]Wholesale Price.

[b]Urner-Barry Quote.

[c]Lansing Market Average.

*Store Number.

Store 3 had the high average rate of price change with 6.50 cents per change when prices declined. Store 4 had the low average rate with 2.30 cents per change, which was also the low listing in the table.

For all three measures of price change the Lansing Market Average values were subdued compared to the seven stores. The Urner-Barry quote had larger values than did the wholesale price for the three measures of price change.

Price Response

Table 29 presents the farm price and the retail prices net response to changes in the wholesale price. Store 3 was the only store to have a one to one response for all price changes (labeled avg. change). The most responsive store was number 1 with 1.42 cents per change. The least responsive store was store 6 with .07 cents per change. The Lansing Market Average had a net response of .75 cents per change while the farm price had a net response of .55 cents per change.

Five of the nine listings were more responsive when prices declined compared to when prices advanced. When the wholesale price remained steady, stores 1, 2 and 6 and the farm price also had zero net movements in their prices. The Lansing Market Average, store 4 and store 5 had net declines in their prices. Stores 3 and 7 had net increases in their prices. The greatest variance from zero was -1.25 cents per change for store 4.

Price Change Increments

Table 30 presents the most occurring price change increments for the listings for increasing and decreasing prices. When prices

Table 29. Retail Prices and Farm Price Net Response to Wholesale Price Changes--20 Week, Large A

Price Change	Price Source									
	Whl[a]	Farm	Lan[b]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Price Change									
Avg. Change	1	.55	.75	1.42	.50	1.00	.92	.72	.07	.61
Increases	+1	.41	.65	1.47	.46	.83	1.06	.76	-.12	.41
Decreases	-1	.68	.76	1.42	0.0	1.16	.79	.68	0.0	.79
Steady Price	0	0.0	-.12	0.0	0.0	+.50	-1.25	-1.00	0.0	+.50

[a]Wholesale Price.

[b]Lansing Market Average.

*Store Number.

Table 30. Most Common Increments of Price Change--20 Week, Large A

Price Increment	Price Source										
	Whl[a]	Farm	U/B[b]	Lan[c]	1*	2*	3*	4*	5*	6*	7*
(cents)	Percent										
+ 1	44.44	50.00	44.44	10.40		25.00	11.11	14.30	12.50		
+ 2	33.33	50.00	22.22	35.84	42.80		66.66	14.30	37.50		25.00
+ 3	11.11		11.11	12.80		25.00	11.11	28.60	25.00		
+ 4	11.11		11.11	30.72	28.60	25.00	11.11	42.80	12.50	100.00	75.00
+ 5				5.12	14.30				12.50		
+ 6				5.12	14.30	25.00					
- 1		28.80		13.60				20.00	37.50		
- 2	50.00	14.25	33.33	29.70	20.00			50.00	12.50		57.10
- 3		42.70	16.67	8.10		50.00		10.00			14.30
- 4	33.34		33.33	24.30	20.00	50.00	50.00	20.00	25.00		14.30
- 5	16.66	14.25	16.67	8.10	20.00				12.50		14.30
- 6				8.10	20.00				12.50	100.00	
- 7											
- 8				2.70			25.00				
- 9											
≥-10				5.40	20.00		25.00				

[a] Wholesale Price.

[b] Urner-Barry Quote.

[c] Lansing Market (an accumulative value)

* Store Number.

increased, the 1 cent increment was the mode value of price advancement for the wholesale price and the Urner-Barry quote. The 2 cent increment was used most by the Lansing Market (an accumulative value for this data), stores 1, 3 and 5. The 4 cent increment was the mode advancement value for stores 4, 6 and 7. Store 2 had no mode value specified and the farm price mode value was evenly distributed between the 1 cent and 2 cent increments.

When price declined, the mode value for the wholesale price increased to 2 cents and 4 cents and for the farm price the mode value increased to 3 cents. The mode value for the Lansing Market remained unchanged at 2 cents. The mode value for stores 1 and 2 was not specified.

Comparing decreasing retail prices with increasing retail prices, 46.08 percent of all increases used the 1 cent to 2 cent increment range whereas only 43.20 percent of all declines used the same increment range. For advances in price, 96.72 percent used the 1 cent to 5 cent increment range whereas only 83.70 percent of all decreases were in that increment range. The largest price increment for increasing prices was 6 cents which was used once each by store 1 and store 2. Decreasing prices on the other hand had two price moves at the 10 cent increment level.

High Price

Table 31 presents the high prices, the low prices, the number of times each was observed and the margins at those prices. In addition, the high margins, the low margins, the number of times each was observed and the prices at which those margins occurred is presented.

Table 31. Retail High Prices, Low Prices, Times Observed and Margins at Those Prices; High Margins, Low Margins, Times Observed and Prices at Those Margins--20 Week, Large A

	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
High Price[b]	51.29	59	52	53	51	51	53	49
Times Observed	1	3	1	4	2	2	3	1
Avg. Margin[b]	11.29	19.00	13.00	15.50	11.00	13.50	19.33	9.00
Low Price[b]	43.33	44	38	43	40	41	47	39
Times Observed	1	1	1	1	1	2	7	1
Avg. Margin[b]	12.33	13.00	6.00	12.00	9.00	9.50	11.71	6.00
High Margin[b]	16.86	21	16	18	12	16	20	13
Times Observed	2	2	2	2	4	1	3	1
Prices[b]	46.86(2)	55&53	49(2)	53(2)	47&48 44(2)	51	53(2)&51	47
Low Margin[b]	9.57	13	6	10	8	7	8	5
Times Observed	1	1	2	1	3	2	1	2
Prices[b]	46.57	44	38&39	49	48&41&45	47(2)	47	41&45

[a]Lansing Market Average.

[b]Cents Per Dozen.

*Store Number.

The high price reported during the 20-week period was 59.0 cents per dozen for store 1. The low reading among the high prices was 49.0 cents per dozen for store 7. Store 3 observed its high price four times. The Lansing Market Average, store 2 and store 7 observed their high prices once each. The high average margin for the high prices was 19.33 cents per dozen for store 6. The low average margin was 9.00 cents per dozen for store 7.

The low price reported during the period was 38.0 cents per dozen for store 2. The high reading among the low prices was 47.0 cents per dozen for store 6. Store 6 observed its low price seven times while store 5 observed its low price two times whereas the remaining listings observed their low prices only once each. The high average margin for the low prices was 13.00 cents per dozen for store 1. The low average margin for the low prices was 6.00 cents per dozen for store 7.

The high margin observed during the period was 21.0 cents per dozen for store 1 with store 6 being a close second with 20.0 cents per dozen. The low, high margin was 12.0 cents per dozen for store 4 with store 7 a close second, having a high margin of 13.0 cents per dozen. Store 4 observed its high margin four times whereas store 5 observed its high margin only once during the period. Stores 3, 5 and 6 were the only listings to have their high prices and high margins occur simultaneously.

The low margin that was observed during the period was 5.00 cents per dozen for store 7. The high reading among the low margins was 13.0 cents per dozen for store 1. Store 4 observed its low margin four times while stores 1, 3 and 6 and the Lansing Market Average observed their low margins only once each. Store 1 and store 6 were the only two listings to have their low margins and low prices occur simultaneously.

Table 32. Two Most Occurring Retail Prices and Frequency of Occurrence--20 Week, Large A

	Price Source							
	Lan[c]	1*	2*	3*	4*	5*	6*	7*
Price[a]	47	49	49	45	43	47	47	43
% Time[b]	15.67	30.00	50.00	25.00	20.00	20.00	38.92	30.00
Price	49	53	45	47	45	46	51	41
% Time	14.92	25.00	25.00	25.00	20.00	15.00	33.36	25.00

[a]Cents Per Dozen.

[b]Percentage--number of occurrences.

[c]Lansing Market (an accumulative value).

*Store Number.

Table 33. Percentage Odd Prices and Percentage Even Price Change Increments at Retail--20 Week, Large A

	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Percent							
Prices	85.07	95.00	87.50	95.00	70.00	55.00	100.00	95.00
Change Increments	71.05	83.33	50.00	84.61	64.70	50.00	100.00	81.81

[a]Lansing Market (an accumulative value).

*Store Number.

Mode Prices

Table 32 presents the most occurring retail prices for the stores. The Lansing Market, reported here as an accumulative value, had 47.0 cents per dozen as its most occurring price during the period. Its second most occurring price was 49.0 cents per dozen. Stores 5 and 6 also had as their mode retail prices 47.0 cents per dozen. Stores 3, 4 and 6 had lower mode prices while stores 1 and 2 had higher mode prices. Store 2 had its mode price occur 50.00 percent of the time whereas the mode prices for stores 4 and 5 occurred only 20.00 percent of the time. The Lansing Market had its mode value occur only 15.6 percent of the time.

Odd Prices

Table 33 presents the percentage of odd retail prices and the percentage of even price change increments. Store 6 had 100 percent of its retail large egg prices marked at odd levels and 100 percent of its price changes used even price change increments. Store 5 had the low percentage of odd prices. Stores 2 and 5 had the low percentage of even price change increments. The Lansing Market had 85.07 percent of its prices marked at an odd level and 71.05 percent of its price changes used even increments.

20 Weeks Medium A

Period Information

Table 34 presents the average prices, the price range widths, the standard deviations and where applicable the number of special sales. The low average price was the farm price of 19.80 cents per dozen.

Table 34. Average Prices, Price Range Widths, Standard Deviations and Special Sales--20 Week, Medium A

Price Source	Avg. Price ¢	Price Range Width ¢	Standard Deviation ¢	Special Sales[d] #
Farm	19.80	10	3.02	--
Wholesale[a]	30.40	10	3.25	--
Urner-Barry[b]	29.60	12	3.62	--
Store 1	47.53	14	4.06	1
Store 2	40.93	12	3.83	5
Store 3	43.05	14	4.01	0
Store 4	40.00	15	4.67	2
Store 5	37.83	13	3.32	2
Store 6	44.90	6	2.00	0
Store 7	38.79	9	2.92	1
Lansing[c]	42.08	12	3.06	--

[a]Wholesale Price.

[b]Urner-Barry Quote.

[c]Lansing Market Average.

[d]Where Applicable.

Among the stores, store 5 had the low average price of 37.83 cents per dozen. The high average price was the 47.53 cents per dozen of store 1. The Lansing Market Average price was 42.08 cents per dozen.

Store 6 reported the smallest price range width which was 6 cents per dozen. The widest price range of 15 cents per dozen was recorded by store 4. The farm price and the wholesale price, had identical price range widths and similar price variance as exhibited by their standard deviations.

The least amount of price variance was the 2.00 cents reported for store 6. The greatest amount of price variance was the 4.67 cents standard deviation reported for store 4. Eight of the eleven listings were in the approximate 3 cents to 4 cents standard deviation range.

Store 2 reported 5 special sales, the most reported by any store. Stores 4 and 5 had two special sales each. Store 1 and store 7 had one special sale each.

Linear Regression Results

The linear regression analysis, farm price equals P (wholesale price), yielded an R value of .5823 ($P < 0.01$). The regression constant was 3.36 cents per dozen while the multiplier term was .54. The farm-wholesale margin would be expected to increase in value as the wholesale price increased.

The regression analysis, Lansing Market Average Price equals P (wholesale price), had an R value of .8224 ($P < 0.001$). The regression constant was 18.57 cents per dozen while the multiplier was .77. The retail margin would be expected to decline in value as the wholesale price increased.

An R value of .7397 ($P < 0.001$) was obtained from the linear regression analysis, Lansing Market Average Price equals P (farm price). The regression constant was 27.25 cents per dozen. The multiplier term was .75. A narrowing farm-retail margin would be expected as the farm price increased.

The R value of .8823 ($P < 0.001$) was the result of the linear regression analysis, wholesale price equals P (Urner-Barry quote). The regression constant was 6.94 cents per dozen and the regression multiplier was .79. The margin between the two factors would be expected to decrease in value as the Urner-Barry quote increased.

Covariance Results

The covariance model was used to test the null hypotheses that the fixed costs among the stores were equal, that the percentage mark-ups above fixed costs among the stores were equal, and that the combination of the two, the retail margins, were equal among the stores. The F ratios for the three null hypotheses were such that all three null hypotheses were rejected. Each decision was significant at the $P < 0.01$ level.

Average Price

The three low price levels that were present in the 53-week period were also found in the 20-week period. There was, however, one minor difference between the two periods. For the 53-week period, the value for lowest price level was the wholesale price range of 27 to 30 cents per dozen. For the 20-week period, this value was expanded one cent to the wholesale price range of 26 to 30 cents per dozen.

Table 35 presents the average prices per price level for the listings. The average high price leader for the period, store 1, maintained that position on two of the three price levels. On the low price level, however, store 6 had the high average price with 45.00 cents per dozen. The low average price leader for the period, store 5, maintained that position on all three wholesale price levels.

Store 1 had the high average price reported which was 52.33 cents per dozen. Store 5 reported the lowest average price of 35.70 cents per dozen. The differences between the average prices for the period for the stores were significant at the $P < 0.01$ level. In addition the differences by price level for the prices of the Lansing Market Average were significant at the $P < 0.01$ level.

Retail Margins

Table 36 presents the retail margins per price level. The high average margin leader for the period was store 1 with an average margin of 17.13 cents per dozen. Store 1 maintained its high margin leader position on two price levels.

The store with the low average retail margin for the period was store 5 with an average margin of 7.33 cents per dozen. Store 5 maintained its low average margin position on all three price levels.

The linear regression analysis indicated that the retail margin would be expected to decline in value as the wholesale price increased. This table illustrates that occurrence. The differences between the price level average margins for the Lansing Market Average were not significant. Stores 2, 6 and 7 did have narrowing retail margins as the wholesale price increased. Store 5 had a near constant retail

Table 35. Average Prices Per Wholesale Price Level--20 Week, Medium A

Price Level	Price Source								
	Whl[a]	Lan[b]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Dozen								
35-38	36.00	47.13	52.33	45.00	49.00	48.00	43.50	45.00	43.50
31-34	32.50	43.44	49.83	41.80	45.50	41.67	39.50	44.67	40.83
27-30	28.36	39.98	44.70	40.00	40.09	37.40	35.70	45.00	36.82
Avg.	30.40	42.08	47.53	40.93	43.05	40.00	37.83	44.90	38.79

[a]Wholesale Price.

[b]Lansing Market Average.

*Store Number.

Table 36. Average Retail Margins Per Wholesale Price Level--20 Week, Medium A

Price Level	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Dozen							
35-38	11.13	16.33	9.00	13.00	12.00	7.50	9.00	7.50
31-34	10.94	17.33	9.30	13.00	9.17	7.00	12.17	8.33
27-30	11.62	16.34	11.64	11.73	9.04	7.34	16.64	8.46
Avg.	11.68	17.13	10.53	12.65	9.60	7.33	14.50	8.39

[a]Lansing Market Average.

[b]Store Number.

margin, while the retail margins for stores 3 and 4 expanded as the wholesale price increased. Store 1 had an inverted "U" shaped retail margin over the three wholesale price levels. Store 1 had the high average retail margin reported which was 17.33 cents per dozen. Store 5 reported the low average margin of 7.00 cents per dozen.

Farm-Wholesale Data

Table 37 presents the average farm price and the average farm-wholesale margins per wholesale price level. The linear regression analysis indicated that an expanding farm-wholesale margin would be expected as the wholesale price increased. This table illustrates the extent of expansion. The average farm price was 19.80 cents per dozen. The average margin was 10.60 cents per dozen.

Farm-Retail Margins

Table 38 presents the average farm-retail margins per price level. The high average margin store for the period was number 1 with 26.73 cents per dozen. Store 1 maintained its high margin position on two of the three wholesale price levels.

The low average farm-retail margin store for the period was store 5 with an average margin of 18.03 cents per dozen. Store 5 maintained its leadership position on all three price levels. The highest average margin reported was the 29.00 cents per dozen margin of store 1. Store 5 had the lowest average margin of 17.70 cents per dozen.

The linear regression analysis indicated a narrowing farm-retail margin for the Lansing Market Average as the farm price increased. This table does not illustrate that occurrence. Although the margins

Table 37. Average Farm Prices and Average Farm-Wholesale Margins Per Wholesale Price Level--20 Week,, Medium A

Price Level	35-38	31-34	27-30	Avg.
		Cents Per Dozen		
Farm Price	24.33	20.83	18.00	19.80
Margin	11.67	11.67	10.36	10.60

Table 38. Average Farm-Retail Margins Per Wholesale Price Level--20 Week, Medium A

Price Level	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Dozen							
35-38	22.80	28.00	20.67	24.67	23.67	19.17	20.67	19.17
31-34	22.61	29.00	20.97	24.67	20.84	18.67	23.84	20.00
27-30	21.98	26.70	22.00	22.09	19.40	17.70	27.00	18.82
Avg.	22.28	26.73	21.13	23.25	20.20	18.03	25.10	18.99

[a]Lansing Market Average.

*Store Number.

did increase in value as the wholesale price advanced, the differences between the three margins were not significant. The differences between the average margins for the period for the stores were significant at the $P < 0.01$ level.

Rates of Price Change

Table 39 presents the average rates of price change for the listings; rates of change as previously defined (see page 37). All the listings with the exceptions of stores 4 and 5 had larger average rates of change for decreasing prices compared to increasing prices.

Store 1 had the high reading for average price changes with 4.69 cents per change. Among the stores, store 7 with 3.00 cents per change had the low reading. The farm price with 2.35 cents per change had the low average rate.

The high average rate of price change when price increased was the 4.40 cents per change of store 5. Store 6 had the low reading among the stores with 2.00 cents per change. The low reading for price increases, however, was the 1.75 cents per change for the farm price.

Store 1 reported 6.17 cents per change for the high reading when price declined. Store 5 had 2.63 cents per change which was the low reading among the stores.

The Lansing Market Average price had smaller average rates of change for all three measures compared to its component stores. The three non-retail store listings had the same relationship among themselves for the three price change measures.

Table 39. Average Rates of Price Change--20 Week, Medium A

Price Change	Price Source										
	Whl[a]	U/B[b]	Farm	Lan[c]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Price Change										
Avg. Change	2.75	3.42	2.35	2.35	4.69	4.14	4.43	3.91	3.31	4.00	3.00
Increase	2.38	2.63	1.75	1.96	3.43	3.50	3.71	4.00	4.40	2.00	2.17
Decrease	3.57	4.50	3.00	3.14	6.17	5.00	5.14	3.80	2.63	6.00	3.83

[a]Wholesale Price.

[b]Urner-Barry Quote.

[c]Lansing Market Average.

*Store Number.

Price Response

Table 40 presents the farm price and the retail prices net response to wholesale price changes. No listing had a one to one (1.00 reading) net response. Stores 1, 3 and 4 had greater than a 1.00 cent per change net response with the 1.21 cents per change of store 3 the greatest. The Lansing Market Average had a net response of .94 cent per change while the farm price had a net response of .56 cent per change. The least net response was the -.09 cent per change of store 6.

Stores 2 and 6 were the only listings to have a net change of zero when the wholesale price did not change. Stores 1, 4 and 7 and the farm price had a net increase in their prices. Stores 3 and 5 and the Lansing Market Average had a net decline in their prices when the wholesale price did not change. The greatest difference from a zero net change was the -1.67 cents per change of store 5.

Price Change Increments

Table 41 presents the most occurring price change increments. The Lansing Market (an accumulative value for this data), and store 1 used the 2 cent and 4 cent price increments the most for advancing prices. The wholesale price had as its most common price change increments the 1 cent and 3 cent values. The Urner-Barry quote advanced by 1 cent the greatest number of times. The 2 cent increment was used most often by the farm price, store 2, store 6 and store 7. Store 3 and store 5 used 4 cents as their mode value while store 4 used the 5 cent increment for most of its price advancements.

When prices declined, the Lansing Market and stores 5 and 7 used 2 cents the most. The Urner-Barry quote had as its mode price change

Table 40. Retail Prices and Farm Price Net Response to Wholesale Price Changes--20 Week, Medium A

Price Change	Whl[a]	Farm	Lan[b]	Price Source 1*	2*	3*	4*	5*	6*	7*
				Cents Per Price Change						
Avg. Change	1	.56	.94	1.15	.61	1.21	1.03	.97	-.09	.75
Increase	+1	.32	.88	.66	.56	1.21	1.14	1.14	-.21	.54
Decrease	-1	.68	.88	1.40	.70	1.08	.84	.73	0.0	.72
Steady Price	0	+.25	-.03	+1.50	0.0	-1.50	+.67	-1.67	0.0	+.33

[a]Wholesale Price.

[b]Lansing Market Average.

*Store Number.

Table 41. Most Common Increments of Price Change--20 Week, Medium A

Price Increments	Price Source										
	Whl[a]	U/B[b]	Farm	Lan[c]	1*	2*	3*	4*	5*	6*	7*
	Percent										
+ 1	44.44	37.50	37.50	5.56							33.33
+ 2		12.50	50.00	30.58	42.87	50.00	14.29	16.67		100.00	50.00
+ 3	44.44	12.50	12.50	8.34			14.29	16.67	20.00		
+ 4		25.00		30.58	42.87	25.00	57.13	16.67	40.00		
+ 5		12.50		16.60			14.29	50.00	20.00		16.67
+ 6	11.11			8.34	14.26	25.00			20.00		
- 1	16.67		37.50	11.12	16.67			20.00	25.00		
- 2	16.67			25.02	16.67		14.29	20.00	37.50		50.00
- 3	16.67	33.34	37.50	11.12	16.67			20.00	12.50		16.67
- 4	33.33	33.34		13.82		33.33	42.84				16.67
- 5		16.67		8.34		33.33			25.00		
- 6			25.00	11.12		33.33	14.29	20.00		100.00	
- 7	16.67			5.56	16.67			20.00			
- 8		16.67		8.34			28.58				16.67
- 9											
-10				2.78	16.67						
>-10				2.78	16.67						

[a]Wholesale Price.

[b]Urner-Barry Quote.

[c]Lansing Market (an accumulative value).

*Store Number.

increments 3 cents and 4 cents. The 1 cent and 3 cent values were the most commonly used increments by the farm price. The wholesale price and store 3 used 4 cents the most times when lowering their prices while 6 cents was the most often used by store 6. Stores 1, 2 and 4 did not have a specified mode increment value for declining prices.

When comparing increasing and decreasing prices, the 1 cent to 2 cent increment range was used 36.14 percent of the time for both price changes. However, 96.14 percent of all increases in price utilized the 1 cent to 5 cent increment range. Only 69.44 percent of the decreases in prices utilized the 1 cent to 5 cent price increment range.

High Price

Table 42 presents the high prices, the low prices, the number of times each occurred and the average retail margins at those prices.

The high price of 53.0 cents per dozen for the 20-week period was reported for store 1. Store 7 had the low price among the high readings of 44.0 cents per dozen. Store 2 observed its high price five times while store 4, store 7 and the Lansing Market Average observed their high price only once each. The high average retail margin for the high prices was 21.0 cents per dozen which was reported by store 6. The low average margin was the 8.00 cents per dozen, maintained by store 7.

The low price for medium A eggs reported for the 20-week period was 33.00 cents per dozen. That low position was observed by stores 2, 4 and 5. The high reading among the low prices was 43.00 cents per dozen by store 6. Store 6 observed its high price seven times during the period. The Lansing Market Average, and stores 2, 3, 4 and 5

Table 42. Retail High Prices, Low Prices, Times Observed and Margins at Those Prices; High Margins, Low Margins, Times Observed and Prices at Those Margins--20 Week, Medium A

	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
High Price[b]	48.20	53	45	49	48	46	49	44
Times Observed	1	2	5	4	2	1	3	1
Avg. Margin[b]	12.20	17.00	14.60	15.50	12.00	10.00	21.00	8.00
Low Price[b]	36.00	39	33	35	33	33	43	35
Times Observed	1	2	1	1	1	1	7	4
Avg. Margin[b]	10.00	11.00	7.00	9.00	7.00	7.00	12.14	6.75
High Margin[b]	12.86	26	19	23	13	11	23	15
Times Observed	1	1	1	1	1	2	1	1
Prices[b]	39.86	52	45	49	39	37&38	49	41
Low Margin[b]	9.50	10	6	9	6	5	9	5
Times Observed	1	1	2	1	1	2	3	1
Prices[b]	42.50	39	39&37	35	39	38&41	45(3)	35

[a]Lansing Market Average.

[b]Cents Per Dozen.

*Store Number.

observed their high price only once each. An average margin of 12.14 cents per dozen for store 6 was the high average margin for the low prices. The low average margin for the low prices was 6.75 cents per dozen reported by store 7.

The high margin reported for the period was 26.00 cents per dozen for store 1. The low reading among the high margins was the 11.00 cents per dozen reached by store 5. Store 5 observed its high margin two times while the remaining listings observed their margins only once each. Stores 2, 3 and 6 were the only stores to have their high price and high margin occur simultaneously.

The low margin reported for the period was 5.00 cents per dozen which was reported by stores 5 and 7. The high reading among the low margins was 10.00 cents per dozen for store 1. Store 6 observed its low margin three times while store 2 and store 5 observed their low margins two times each. The remaining listings observed their low margins only once each. Stores 1, 3 and 7 had their low prices and low margins occur simultaneously.

Mode Prices

Table 43 presents the two most occurring retail prices for the stores. All the prices listed were odd prices except for the 38.00 cents per dozen of store 5. The most occurring price for the Lansing Market (an accumulated value for this data) was 45.00 cents per dozen which occurred 15.62 percent of the time. The second most occurring price was 39.00 cents per dozen which occurred 13.49 percent of the time. The 45.00 cents per dozen price was also the mode value for store 2 and store 6. The mode value for store 1 was higher than the Lansing Market

while the mode value for the reamining stores was lower than the Lansing Market mode value.

Odd Prices

Table 43A presents the percentage of odd retail prices and the percentage of even price change increments. The Lansing Market (an accumulative value) had 81.34 percent of its retail prices marked at odd levels. Store 6 had the high percentage, 100 percent, while the low percentage was 38.89 percent for store 5. The Lansing Market had 66.67 percent of its price changes use even increments of price change. The high percentage for even increments was 100.00 percent for store 6. The low percentage was 36.36 percent for store 4 with store 5 a close second with 38.46 percent.

Table 43. Two Most Occurring Retail Prices and Frequency of Occurrence--20 Week, Medium A

	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
Price[b]	45	49	45	41	39	38	45	39
% Time[c]	15.62	30.00	25.00	30.00	25.00	15.00	50.00	20.00
Price[b]	39	45	39	49	N.S.	37	43	37
% Time[c]	13.49	25.00	15.00	20.00		15.00	35.00	20.00

[a]Lansing Market (an accumulative value)

[b]Cents Per Dozen.

[c]Percentage--number of occurrences.

*Store Number.

Table 43A. Percentage Odd Prices and Percentage Even Price Change Increments at Retail--20 Week, Medium A

	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Percent							
Prices	81.34	94.74	93.33	95.00	55.56	38.89	100.00	89.47
Change Increments	66.67	76.92	85.71	85.71	36.36	38.46	100.00	66.67

[a]Lansing Market (an accumulative value).

*Store Number.

COMPARISONS AND DISCUSSION

Interstudy Comparisons

Since the two portions of this study occurred when egg prices were at opposite ends of the price cycle, direct comparison of prices between periods would be meaningless. However, certain aspects surrounding the properties of the prices, i.e., price response, price change increments and average margins would be applicable to comparison and discussion.

The average large A retail price for the Lansing Market during the 53-week period was 62.59 cents per dozen. The average large A farm price for the same period was 40.43 cents per dozen. The Marketing and Transportation Situation (MTS #176-179) reported that the ten city average large A retail price and the national average farm price for the same 53-week period was 64.47 cents per dozen and 41.97 cents per dozen respectively.

The Lansing Market Average price was 1.98 cents per dozen below the ten city average. Similarly, the average farm price was 1.54 cents per dozen below the national figure. Although the Lansing area values were below those reported as national averages, the Lansing Market farm-retail margin of 22.16 cents per dozen was very close to the 22.50 cents per dozen for the ten city average.

Comparison of the farm-wholesale margins and retail margins between this study and the national margins was not possible because there were no national average values reported.

Comparison of the average prices for large and medium eggs for the two periods yielded the information in Table 44. During the 53-week period, most of the differences between the two sizes were in the 7 to 8 cents per dozen range. However, during the 20-week period, most of the differences ranged between 4 cents and 5 cents per dozen; one very notable exception being store 5.

Linear regression analyses were performed on the farm, wholesale and retail price levels. The general formula stated that the medium price was dependent upon farm price. The three analyses performed on each set of data from the two periods indicated that the difference in price between the two sizes would be expected to narrow as the large price increased.

All the linear regression analyses indicated the two prices were highly significantly ($P < 0.001$) correlated ($R > .89$). The 53-week data presented in Table 45 illustrates the occurrence.

Spearman (1970) reported that the average difference in price between the two sizes in Atlanta, Georgia for 1966 was 6.0 cents per dozen. The difference increased to 7.0 cents per dozen in 1967. The average price levels for 1966 were 56.0 cents per dozen for large and 50.0 cents per dozen for medium and for 1967 the prices were 45.0 and 38.0 cents per dozen respectively for large and medium. The Lansing linear regression results seem to coincide with what Spearman reported.

On an absolute price basis the 1967 Atlanta difference was directly compared to the 20 week 1972 Lansing difference due to the average price similarity (large A: Atlanta, 45 cents per dozen; Lansing, 47.31 cents per dozen). The Atlanta difference between the large and medium prices of 7.0 cents per dozen was greater than the 5.23 cents per dozen difference of Lansing.

Table 44. Average Differences between Large and Medium Prices for the 53-Week and 20-Week Periods

Price Source	53	20
	Cents Per Dozen	
Farm	7.84	4.75
Wholesale	7.06	4.65
Urner-Barry	6.47	3.65
Lansing[a]	7.68	5.23
Store 1	6.90	5.32
Store 2	7.42	5.32
Store 3	7.59	4.90
Store 4	7.15	5.30
Store 5	7.99	7.77
Store 6	7.55	4.65
Store 7	6.03	4.66

[a]Lansing Market Average.

Table 45. Average Price Differences Per Wholesale Price Level
53 Week, Large-Medium

Price Level[1]	Price Source Whl[a]	Lan[b]	Farm[c]
		Cents Per Dozen	
63-68/59-64	4.40	3.91	4.98
59-62/54-58	3.25	2.14	3.25
54-58/48-53	6.17	7.11	8.00
50-53/43-47	6.78	7.36	6.56
46-49/39-42	9.20	10.55	7.80
42-45/35-38	6.75	7.25	8.58
39-41/31-34	7.67	7.81	8.47
35-38/27-30	7.00	8.75	8.17

[a]Wholesale Price.

[b]Lansing Market Average.

[c]Farm Price.

[1]Large/Medium.

Nybroten (1954) proposed that at retail medium eggs should be priced at 73 to 75 percent of the large price. On the average, his suggested policy was not followed in Lansing. For both periods of the study, the medium price averaged at about 85 to 90 percent of the large price.

Coefficients of variation (ratio of standard deviation to average price) were calculated for each size for each period. To approximate the relationship between the two sizes a ratio of medium to large was calculated (Table 46). Except store 6 during the 20-week period, the medium price was more variable. When the two periods were compared similar values appeared for the farm, wholesale, Urner-Barry, Lansing Market Average and stores 3, 5 and 7. These values indicated that the medium price was relatively (1.3 to 1.5 times) more variable than the large price. The remaining stores, 1, 2, 4 and 6, had ratios in the 1.3 to 1.5 range for the 53-week period, but had different values for the 20-week period.

Spearman (1970) did not present similar coefficients. However, he presented data such that calculations were possible. The medium to large ratio of his 1967 Atlanta data was 1.27. Comparison with results presented here indicates that the relative relationship of the two sizes regarding price variability present in 1967 in Atlanta were also present in the Lansing Market in 1969-1970 and 1972.

Meredith (1971) did not differentiate between "normal" and "special sale" prices in his 1958-1967 New Jersey study. Spearman (1970) reported that in his 1966-1967 Atlanta study, a "special sale" occurred 9.6 percent of the time for medium eggs and 7.6 percent of the time for large eggs. A "special sale" for large eggs occurred

Table 46. Medium to Large Ratios of Coefficients of Variation for the 53-Week and 20-Week Periods

Price Source	53	20
Farm	1.44	1.57
Wholesale	1.32	1.33
Urner-Barry	1.40	1.45
Lansing[a]	1.36	1.47
Store 1	1.38	1.10
Store 2	1.34	1.01
Store 3	1.29	1.35
Store 4	1.19	1.75
Store 5	1.35	1.40
Store 6	1.35	.94
Store 7	1.42	1.27

[a]Lansing Market Average.

every 13 weeks and a "special sale" occurred every 10.4 weeks for mediums. A "special sale" occurred in the Lansing Market every 2.4 weeks for large and every 1.2 weeks for medium during the 53-week period. The 20-week period had a "special sale" on large every 3.3 weeks and on medium every 1.8 weeks.

Spearman (1970) reported that the ratio of medium to large "special sales" was about one to one. The author found a ratio of two to one in the Lansing Market.

Cross comparison of time periods in Lansing indicated a reduction in the number of "special sales" as average price levels declined. This was evident for both sizes, though not as great for medium compared to large.

Retail Margins

Meredith (1971) reported that the level of wholesale market quotations was not a factor which influenced retail margins for the New York retail chain that he studied. Contrary to his findings, linear regression results on the Lansing Market data indicated a changing retail margin as wholesale price increased or decreased. An expanding retail margin as wholesale price increased was reported for the 53-week period for both sizes. However, the 20-week period reported a narrowing retail margin as wholesale price increased for both sizes. Linear regression analyses were performed only on the Lansing Market Average. But all of the stores in the study had changing retail margins over the range of wholesale price levels.

The 53-week average retail margin was 12.27 cents per dozen for large and 11.66 cents per dozen for medium. The retail margins for

the 20-week period were 12.23 cents per dozen for large and 11.68 cents per dozen for medium. The differences were not significant.

Kemp et al. (1954) reported that retail margins increased with the size of eggs sold. Stanulis (1953) reported that Detroit retail margins were most often 10 percent of the retail price. The author found that these relationships did not exist for the Lansing Market.

Meredith (1971) reported that 18 cents per dozen was the average retail margin in New York City for 1958-1967. Rooney and McKeen (1971) reported an average retail margin of 8.6 cents per dozen in southern California for 1967-1971. Both the above stated margins were for large eggs. In a 1956 Detroit study Williams (1958) reported the average retail margin at 8.5 cents per dozen for large and 9.01 cents per dozen for medium.

The results of this study showed that retail margins have stabilized at approximately 12.0 cents per dozen for the two periods reported.

Geographically, about a 10 cent per dozen difference in retail margins existed in the studies cited. The Lansing Market was a near mid-point, 6 cents per dozen below New York and about 4 cents per dozen above California.

The average farm-wholesale margin for the Lansing study was 10.42 cents per dozen for large-medium eggs. The Lansing value determined by this study was slightly under the 1962-1966 12.87 cents per dozen large-medium eggs farm-wholesale margin reported by Rogers and Faber (1970). Rooney and McKeen (1971) used the SWEP "asking price" for AA large and obtained a 1967-1971 average of 13.4 cents per dozen; about 3 cents per dozen over the Lansing data.

Hoyt (1969) reported that the difference between the Urner-Barry price and the west Michigan farm price averaged near 8 cents per dozen on large A eggs for 1966-1967 for the farms he studied. Meredith (1971) reported the same spread to be -.31 cents per dozen on all eggs for New Jersey farms for 1958-1967. The data obtained from this study indicated a spread of 6.34 cents per dozen for large and 7.71 cents per dozen for medium for the 53-week period. The average spreads increased to 8.70 cents per dozen for large and 9.80 cents per dozen for medium for the 20-week period. The difference between the farm price and the Urner-Barry price was lower than those reported by Meredith.

The Marketing and Transportation Situation reported that their ten city national average farm-retail margin expanded from 18.70 cents per dozen in 1947-1949 (MTS 124-135) to 22.60 cents per dozen in 1971 (MTS 184). Rooney and McKeen (1971) reported the same margin in southern California to be 22 cents per dozen for 1967-1971. The Lansing Market Average farm-retail margin for the 53-week period 1969-1970 was 22.24 cents per dozen for large and medium. This expanded slightly to 22.52 cents per dozen for the 20-week period, 1972.

On an overall national picture, there is little difference between areas regarding the farm price position relative to the retail price. All areas are receiving farm prices about 22 to 23 cents per dozen below their corresponding retail price. In Lansing, that margin has remained at that level over the past three years despite increases in the spread between the farm price and the Urner-Barry quote.

Meredith (1971) reported that the Urner-Barry quote changed at an average rate of 1.23 cents per price change for large eggs and 1.24 cents per price change for medium eggs for the 1958-1967 period.

Meredith analyzed the quotation on a daily basis. The author found that on a weekly basis, the average rate was 2.85 cents per price change for large and 3.42 cents per price change for medium for the 53-week period. For the 20-week period, the average rate was 2.53 cents per change for large and 3.42 cents per change for medium.

The wholesale price had similar average change values for the large size for both the 53-week and 20-week periods. However, the average price change values for the medium size for the wholesale price were lower. The farm price had smaller average change values than the wholesale price for the two periods for both sizes.

Meredith (1971) reported that the retail store he studied had an average price change value of 2.43 cents per change for large eggs and 2.52 cents for medium eggs for the 1958-1967 period. The Lansing Market Average changed price at an average rate of 2.25 cents per change for large eggs and 2.86 cents per change for medium eggs for the 53-week period. The 20-week period values were 1.72 cents per change and 2.35 cents per change respectively for large and medium. Neither period averages were similar to Meredith's findings. Prices during the 20-week period were moving within a limited price range of 10 cents compared to the 35 cents for the 53-week period. This may have accounted for the smaller increments of price change during the 20-week period.

The New York chain that Meredith (1971) studied used the 2 cent increment the most often when it changed its large A price. The Lansing data were separated according to price change, either an increase or a decrease. The 53-week period saw the 2 cent increment used the most when the large price was increased and decreased, and when the medium price was increased. The 2 cent and the 4 cent increments were used

an equal number of times to decrease the medium price. The 2 cent increment was the mode increment for increasing and decreasing the medium price and for decreasing the large price during the 20-week period. When 20-week large A prices increased, the 2 cent and the 4 cent increments were used an equal number of times. Overall, the 2 cent increment was the prevalent one, which agrees with the other studies cited.

About 88 percent of the large and medium prices in the Lansing Market study were marked at odd levels during the 53-week period. During the 20-week period, about 82 percent of the prices were odd. These values were lower than the 100 percent odd prices observed by Meredith (1971) for the New York chain during the ten year period, 1958-1967. There has been a marketing concept concerning a consumer psychological advantage to odd prices for inducing purchases. The information presented here would seem to indicate that the influence of the above mentioned marketing concept is declining.

Williams (1958) found that the lowest price was not associated with the smallest margin and conversely the highest price was not associated with the greatest margin. The author found that this relationship existed for the Lansing Market during the periods of study.

Intrastudy Comparisons and Discussions

This was the only study at the time of its publication that observed different supermarket-type retail stores and analyzed their actions against one another. Interest was centered on possible significant differences between stores selling the same product in the same market. As a secondary goal, it was hoped that the study of more than

one store could lead to the determination of a general retail pricing formula that could be applicable and relatively accurate in many situations. Differences between stores were evident in virtually every analysis performed in this study.

The number of "special sales" for each store varied between sizes, between periods and between stores. However, every store had more "special sales" for medium eggs than large eggs, with the exception of store 6 in the 20-week period. Although it varied by store, the market average was two medium "special sales" per one large "special sale."

Table 47 presents the 53-week and 20-week average retail margins for both sizes. The retail margins were similar for both sizes for each period except store 5 for the 20-week period. Cross period comparison indicated that only stores 3 and 7 maintained their similar pricing policies between the two periods. Stores 1 and 6 had a higher margin (20-week period) per unit whereas stores 2, 4 and 5 took the opposite action.

The 3.22 cents per dozen difference between the two sizes for store 5 drew attention to the fact that it was the low price leader on medium eggs.

Overall, each store marked their large and medium eggs at a similar margin above the wholesale price.

The relationships between the stores found in Table 47 were also present in Table 48, where the farm-retail margins are presented. Similar values between sizes were present.

Differences existed between stores regarding their average rates of price change. However, price decreased at a faster rate than it increased for most stores.

Table 47. Average Retail Margins for the 53-Week and 20-Week Periods for Large A and Medium A

	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Dozen							
53-Week								
Large	12.27	12.30	14.27	13.21	13.96	14.43	11.10	8.60
Medium	11.66	12.44	13.89	12.66	13.85	13.48	10.59	9.61
Difference	.61	.14	.38	.55	.11	.95	.51	1.01
20-Week								
Large	12.23	17.80	11.20	12.90	10.25	10.55	14.50	8.40
Medium	11.68	17.13	10.53	12.65	9.60	7.33	14.50	8.39
Difference	.55	.47	.67	.25	.65	3.22	0.0	0.01

[a]Lansing Market Average.

*Store Number.

Table 48. Average Farm-Retail Margins for the 53-Week and 20-Week Periods for Large A and Medium A

	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Dozen							
53 Week								
Large	22.16	23.13	24.58	23.35	24.54	24.17	21.28	20.30
Medium	22.32	22.19	24.16	23.10	23.85	24.32	20.99	18.49
Difference	.16	.94	.42	.25	.69	.15	.29	1.81
20 Week								
Large	22.73	28.30	21.70	23.40	20.75	21.05	25.00	18.90
Medium	22.28	26.73	21.13	23.25	20.20	18.03	23.10	18.99
Difference	.45	1.57	.57	.15	.55	3.02	.10	.09

[a]Lansing Market Average.

*Store Number.

The analysis of net response to wholesale price change performed in this study was not found in any previous literature. The analysis gives an indication of how closely the individual store follows the wholesale price. A 1.00 cent per change value would indicate a one to one net response of the retail price to change in the wholesale price.

Table 49 presents the average response values for both periods and both sizes. The farm price had the most consistent response over the entire study. Its average response of .59 cents per change indicated a definite lag behind the wholesale price of about .4 cents per change each time the wholesale price changed one cent.

The Lansing Market Average indicated that the Lansing Market was quite responsive during the 53-week period for the large price with .91 cents per change. The 20-week period value showed less responsiveness. The 20-week medium price showed more response than the 53-week medium price. The only store to exhibit consistency from the 53-week period to the 20-week period was store 3. Overall, the net response was more consistent for the medium price than the large price.

Most of the stores were more responsive to decreases of the wholesale price for the 53-week large and 20-week large and medium prices. However, during the 53-week period for medium eggs, every retail store was more responsive to increases of the wholesale price.

When prices changed the most commonly used increment was 2 cents per change. Table 50 presents information regarding the use of the 1 cent-2 cent increment range, the 1 cent-5 cent range and increments greater than 10 cents. The use of specific increments or an increment was then related to price response. The wholesale price used the

Table 49. Retail Prices and Farm Price Net Response to Wholesale Price Changes for the 53-Week and 20-Week Periods for Large A and Medium A

		Price Source								
	Whl[b]	Farm	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Cents Per Price Change									
53 Week										
Large	1	.67	.91	.97	.68	1.05	.75	.85	.85	.99
Medium	1	.58	.84	.72	.58	1.07	1.07	.63	.40	.62
20 Week										
Large	1	.55	.75	1.42	.50	1.00	.92	.72	.07	.61
Medium	1	.56	.94	1.15	.61	1.21	1.03	.97	-.09	.75

[a]Lansing Market Average.

[b]Wholesale Price.

*Store Number.

Table 50. Price Change Increment Range Utilization for the 53-Week and 20-Week Periods for Large A and Medium A

	Percent					
	53 Week Large			53 Week Medium		
Range (cents)	1-2	1-5	≥10	1-2	1-5	≥10
Increase	52.84	86.18	0.81	40.38	83.65	2.88
Decrease	35.31	73.54	6.86	34.32	71.50	7.15
	20 Week Large			20 Week Medium		
Range (cents)	1-2	1-5	≥10	1-2	1-5	≥10
Increase	46.24	94.88	0.0	36.14	91.66	0.0
Decrease	43.30	83.80	5.40	36.14	69.42	5.56

1 cent increment the most to advance prices and the 3 cent increment when prices declined. As was indicated, retail prices responded at less than a one to one basis to wholesale price changes. As a result, the range of price change increments expanded as the size of the wholesale price change increments increased. A higher percentage of the increments used were in the 1 cent-2 cent and 1 cent-5 cent ranges for increasing prices than for decreasing prices. Similarly, a higher percentage of the increments used to decrease prices were in the 10 cent or greater range, than were used to increase prices.

The area of high prices, low prices, high margins and low margins illustrated the differences between stores and the relative practice of the store regarding the price paid by the consumer. As an example the high margins observed during the 20-week period for medium eggs were:

Store	1	2	3	4	5	6	7
Margin (cents per dozen)	26	19	23	13	11	23	15

The difference between stores 1 and 5 is about 135 percent. The same differences were present in most aspects of the high prices, high margins, low prices and low margins.

Another area that indicated the great difference between the stores was the most occurring retail price. An example was the 53-week large data:

Store	1	2	3	4	5	6	7
Price (cents per dozen)	79	53	53	83	49	63	49

The difference between the high and the low reading was about 70 percent. This same relative difference was present for the other sizes and the 20-week period.

The percentage of odd prices was important in studying general pricing policy. As was indicated previously, on a total market basis, the percentage of odd prices declined from 1969-1970 to 1972. The 20-week, 1972, level was about 82 percent odd prices for the Lansing Market. Table 51 presents the percentage of odd prices for both periods for both sizes. There was much variation in this reading. Most of the stores had changes in their pricing policy regarding odd prices from the 53-week period to the 20-week period.

When this study began, the U.S.D.A. Market News price was selected as the wholesale price because it was easily accessible and was a wholesale price geographically close to the Lansing Market. Early in the study the validity of that selection was questioned. The Urner-Barry quote was considered to be a more accurate and reliable reading of the market.

The Urner-Barry quote has been the most often used base price for formula pricing; it provided a quick and accurate reading of egg price. However, the concern of this study was whether or not the Urner-Barry quote was an accurate reflection of what actually occurred to the wholesale egg price in the Lansing area market.

Tables 5, 6, 7 and 8 of Appendix I present the U.S.D.A. Market News price, the Urner-Barry quote and the respective price-to-retailers of the five egg handlers for both sizes for both periods by week. Using the average values for each of the four tables, the average difference between the U.S.D.A. price and the Urner-Barry quote was 3.55 cents per dozen for large and 2.96 cents per dozen for medium for the 53-week period. The average difference was 1.80 cents per dozen for large and .80 cents per dozen for medium for the 20-week period. A definite change in average difference occurred between the two periods.

Table 51. The Percentage of Odd Prices for the 53-Week and 20-Week Periods for Large A and Medium A

	Price Source							
	Lan[a]	1*	2*	3*	4*	5*	6*	7*
	Percent							
Large								
53	89.76	88.68	100.00	96.23	77.36	83.02	96.23	86.79
20	85.07	95.00	87.50	95.00	70.00	55.00	100.00	95.00
Medium								
53	85.70	81.13	91.67	96.08	67.39	82.22	91.11	97.87
20	81.34	94.74	93.33	95.00	55.56	38.89	100.00	89.47

[a]Lansing Market Average.

*Store Number.

Comparison of the above two values (U.S.D.A. and Urner-Barry) with the average of the five actual prices-to-retailers (50.13 cents per dozen) gave a U.S.D.A.-Average difference of .19 cents per dozen and an Urner-Barry-Average difference of 3.36 cents per dozen for large for the 53-week period. Similar comparisons of the other three tables all indicated that the U.S.D.A. Market News price was a more realistic reading of the actual wholesale price paid by retailers to the five egg handlers.

Many individuals have believed that the spread between the Urner-Barry quote and the farm price is very important. However, Smith and Christensen (1968) reported that the base quote to farm price spread was irrelevant. To them the important factor was the farm-retail margin.

Here it has been pointed out that the U.S.D.A. price-Urner-Barry quote spread has decreased between the two periods.

During discussions with the five egg handlers, each mentioned retailer pressure to establish wholesale prices nearer the Urner-Barry quote. As a result, in an effort to maintain their required farm-wholesale margins, the egg handlers have established the farm price further away from the Urner-Barry quote.

If the present trend continues into the future, the Urner-Barry quote will become closer to the U.S.D.A. Market News price. The farm price will continue to move away from the Urner-Barry quote. As a result, in order to measure the relative position of the farm price to the overall market, the farm-retail margin will have to be utilized. As the difference between the price-to-retail and the Urner-Barry quote declines, the farm price-Urner-Barry quote spread will become an irrelevant measure. If and when the Urner-Barry quote becomes

aligned with the U.S.D.A. Market News Price and is maintained as such, its comparison with farm price as a market measure will again be relevant. Since price-to-retail is not easily accessible by the public, the quickest and most accurate measure of farm price relevancy will be the farm-retail margin.

SUMMARY

Seven supermarket-type retail stores in the Lansing-East Lansing, Michigan, metropolitan area were visited once each week, usually on Friday, to obtain retail prices of large and medium Grade A eggs in one dozen cartons. The Friday U.S.D.A. Dairy and Poultry Market News inside, or low-side-of-range, price-to-retailers was used as the wholesale price. Five Michigan-Indiana-Ohio egg assembler-handlers, with a combined volume of 60,000 cases per week, allowed the use of their actual price-to-retailers and net farm prices. Friday Urner-Barry quotes were also obtained.

The data were collected for the 53-week period, October 24, 1969 to October 23, 1970 and for the 20-week period January 7, 1972 to May 19, 1972.

Various analyses were performed on the data. Some areas of interest for which results were obtained were the following:

1. Average prices and standard deviations
2. Average retail margins
3. Average farm-wholesale margins
4. Average farm-retail margins
5. Rates of price change
6. Retail price response to wholesale price changes
7. Size of price change increments
8. High prices and margins, low prices and margins

9. Most occurring retail price
10. Average farm price to Urner-Barry quote spread

It was hoped that the results would lead to answers to the following general questions:

1. Were there significant differences in prices between supermarket-type retail stores in the Lansing-East Lansing, Michigan, metropolitan area?
2. Which wholesale price, the Urner-Barry quotation or the U.S.D.A. Market News Quotation, was a more accurate reflection of the assembler-handler selling price?
3. What relationships existed in egg prices between the farm, wholesale, and retail price levels?

Average Prices

There were great differences between the average prices of the seven stores in all parts of the study. An example was the 26 percent difference between the high and the low prices for the 20-week period for medium eggs.

The prices for medium eggs were generally 1.5 times more variable than the prices for large eggs. The absolute differences between large and medium prices declined from 7 to 8 cents per dozen in 1969-1970 to 4 to 5 cents per dozen in 1972.

The number of "special sales" declined from the 53-week period to the 20-week period. However, the relative 2 to 1 ratio of medium to large "special sales" remained the same between the two periods.

Linear Regression Results

Results indicated that the retail margins, farm-wholesale margins and farm-retail margins did not remain constant as the wholesale price changed. All three margins for both sizes were expected to expand as wholesale price advanced during the 53-week period. Most of the margins for the 20-week period had the reverse case occur.

Regression results indicated that as price advanced the difference between the large and medium prices would decline. This was indicated for both periods for both sizes.

The spread between the wholesale price and the Urner-Barry quote was deemed constant over all price levels for large for both periods by the linear regression results. The same spread for mediums for both periods was expected to decline in value as price increased.

All the linear regression results gave a correlation coefficient and the significance of that coefficient for each analysis performed. The coefficients indicated a high correlation ($R > .80$) for all analyses except the 20-week farm medium equals P (wholesale medium) and the 20-week Lansing Market Average medium equals P (farm medium). The significance level of all correlations was $P < 0.01$.

Covariance Results

A three part covariance model was used to test the null hypotheses that fixed costs among stores were equal, that percentage markups above fixed costs were equal and that the combination of the two, retail margins, were equal. Each hypothesis was rejected ($P < 0.01$) for both sizes for both periods.

Margins

Large and medium eggs in the Lansing Market were priced at about 12 cents per dozen over the wholesale price for both periods. There was a great difference between the margins of the stores. The 112 percent difference between the margins of the high and low stores during the 20-week period for large was an example.

The farm-wholesale margin for the two sizes for the two periods was about 10 cents per dozen. The change in the margin as wholesale price changed was less than that of the retail margins.

The farm-retail margin for the two sizes for the two periods was about 22 cents per dozen. Differences existed between stores. However, they were not as profound as the retail margin example cited above.

The spread between the farm price and the Urner-Barry quote for large and medium increased from 7.4 cents per dozen during 1969-1970 to 9.3 cents per dozen during 1972. At the same time, the difference of 3.3 cents per dozen during 1969-1970 between the U.S.D.A. price and the Urner-Barry quote for large and medium declined to 1.5 cents per dozen during the 20-week 1972 period.

Rates of Price Change

The large price of the Lansing Market Average changed at an average rate of 2.0 cents per change. The medium price changed at an average rate of 2.6 cents per change. The average rates were slightly larger during the 53-week period. The rate for decreasing prices was greater than for increasing prices for both sizes for both periods. Marked differences existed between the stores.

The average rate of change for the wholesale price was 2.63 cents per change for large and 2.75 cents per change for medium. The farm price changed at an average rate of 2.1 cents per change for large and 2.3 cents per change for medium. The Urner-Barry quote large size average rate was 2.7 cents per change while 3.4 cents per change was the rate for medium. The rate was greater for decreasing prices compared to increasing prices for the three prices.

Price Response

A 1.00 cent per change reading indicated that the listing responded to wholesale price changes on a one to one basis. The farm price for this study had an average net response of .59 cent per change for the two sizes for the two periods. The Lansing Market Average had a net response of .86 cent per change when the wholesale price changed by one cent.

Most of the stores were more responsive to decreases of the wholesale price for the 20 week large and medium and for the 53 week large. However, all the stores were more responsive to increases of the wholesale price for the 53 week medium. There were marked differences between the stores, more so for the 20-week period.

Price Change Increments

The most common increment of price change for the Lansing Market was 2.0 cents, for both increases and decreases in price. The wholesale price and the farm price used the 1 cent increment for advancing prices and either the 2 cent or 3 cent increments for declining prices. The Urner-Barry quote used the 1 cent increment to advance price and the 3 cent increment to decrease price.

When Lansing Market prices advanced, a higher percentage of the increments used were compacted into the 1 cent to 2 cents and the 1 cent to 5 cents ranges than when prices declined. Similarly, a greater percentage of the increments used to decrease price were in the 10 cents or greater range. The relationship of large to medium was the same as the relationship of increasing to decreasing prices.

High Prices

Marked differences existed between the stores regarding most of the findings of this analysis. In general, the high price of any store did not coincide with the high retail margin of that store. The same relationship was found regarding low prices and low margins. The high and low margins occurred more in the mid-range of retail prices. The most similarity between the stores was in the number of times one of these extremes was observed; usually each was observed a very few times.

Mode Price

The most occurring prices for any store varied considerably between the stores. There was more accord among the stores during the 20-week period regarding mode prices.

Odd Prices

About 88 percent of the large and medium egg prices were marked at odd levels during the 53-week period. This declined to about 82 percent during the 20-week period. Marked differences existed among the stores. An example was the 60 percent difference between the high and low stores for the 20 week medium.

About 70 percent of all retail price changes utilized even price change increments. Again, differences existed between stores.

U.S.D.A.-Urner-Barry-Farm

The average differences between the U.S.D.A. Market News price and the actual five egg handler average selling price was virtually zero for both sizes for both periods. The difference between the U.S.D.A. price and the Urner-Barry quote declined from the 53-week period values of 3.55 cents per dozen for large and 2.96 cents per dozen for medium to the 20-week period values of 1.80 cents and .80 cents per dozen respectively. The farm price-Urner-Barry quote spread increased from about 7.0 cents per dozen in 1969-1970 for large and medium to about 9.0 cents per dozen in 1972. The spread for mediums was greater than the spread for large for both periods.

Farm Price

The egg prices net-to-farm were very similar among the five assembler-handlers in the Michigan-Ohio-Indiana tri-state area.

CONCLUSIONS

From the data collected and analyses performed the following conclusions were drawn:

1. The egg pricing system was highly correlated at all levels; from the farm price to the Urner-Barry quote to the wholesale price and to the retail price.

2. There were significant differences between supermarket-type retail stores selling the same product in the market area studied. Differences existed in all the aspects of egg pricing and prices that were studied.

3. It was evident that the major differences between geographic areas regarding margins in the egg pricing system were within the marketing channel. That is, although farm-wholesale margins and retail margins varied by geographic region, the overall farm-retail margins were similar between the area studied and other geographic regions.

4. The U.S.D.A. Market News price was a more accurate reflection of the actual price paid by retailers to the five egg assembler-handlers studied. However, it is anticipated that the Urner-Barry quote will become a more accurate reflection of the actual price paid by retailers in this area. If the trend observed during this study continues, the U.S.D.A. and Urner-Barry quote will be extremely similar.

5. The difference between the Urner-Barry quote and the farm price is not a relevant measure of farm price position in relation to retail price. The farm-retail margin is a more accurate measure and will continue to be until the relationship between the Urner-Barry quote and the retail price stabilizes at a constant or near constant margin.

6. It was mentioned previously that a secondary goal of this study was to obtain an approximate pricing policy applicable to the Lansing Market area.

Attempts to interview each chain's egg buyer failed. However, audiences with two chains' buyers were obtained--stores 3 and 7 represented those interviews.

Both firms followed no specific formula but priced their eggs on a subjective or intuitive basis at the discretion of the egg buyer. Egg prices for store 3 were an approximate percentage markup over its buying price. The percentage amount was decided by the buyer who suggested a price to member retailers. The independent member retailers, however, decided whether or not to follow the suggested price and marked their eggs accordingly. The egg buyer would strive for 100 percent odd prices.

Egg prices for store 7 were a function of its competitors prices. It was this firm's objective to be the price leader in any market in which it sold.

Thus it sampled other "close price competitors" to determine their "low" price and established its price accordingly. This firm attempted to set the majority of its prices at an odd level.

In performing the accurancy checks mentioned in the preface of the results, the use of specified margins per wholesale price level

was mentioned. Neither of the two egg buyers interviewed gave any indication of such a practice. Obviously, the prediction equation outlined in the preface would be too tedius. The next approach would be a straight percentage "add-on" eluded to by previous literature. A check of the data presented in this study led the author away from such an approach. The approximate percentage applicable at the mid-range of wholesale prices would be "off" at both ends of the price range.

It is true that in trying to equate a pricing formula for a retail market the number of diversified stores increases the difficulty to obtain an accurate formula. However, to get an accurate picture of the total market all stores must be included. From the results obtained the author suggests the following general pricing formula. The overall formula would be one of a "floating" percentage "add-on" markup ranging from 20 percent at high wholesale price levels to 30 percent at low price levels. The split would approximately be as follows:

Wholesale Price Level	Retail Price as a % of Wholesale
60 cents and above	120%
40 to 59 cents	125%
below 40 cents	130%

Odd prices would be expected most of the time.

The author believes that this general model is not applicable to an individual store but must be applied to a market area.

APPENDIX I

Table 1. The Large Size Farm Prices[a] for the Respective Handlers for the 53-Week Sample.*

	Farm Price					
Week	1	2	3	4	5	Avg.
1	40	42	41	43	41	42
2	41	44	44	47	43	43
3	44	48	47	50	44	46
4	47	53	50	53	48	50
5	52	55	54	57	51	54
6	55	56	56	57	54	56
7	56	56	56	57	56	56
8	57	57	56	59	56	57
9	58	57	57	59	58	58
10	58	57	57	59	59	58
11	58	55	56	54	59	57
12	56	53	53	54	58	55
13	54	57	55	58	54	55
14	56	56	57	58	57	57
15	57	51	55	51	57	55
16	53	49	49	49	53	51
17	49	47	49	46	49	49
18	48	43	45	44	47	46
19	45	40	43	42	45	44
20	42	41	41	42	42	42
21	41	42	42	44	40	42
22	42	43	42	43	42	43
23	43	38	40	33	43	41
24	41	31	34	29	41	37
25	31	31	30	30	31	31
26	31	32	31	32	30	32
27	32	32	31	32	31	32
28	32	29	30	29	31	31
29	29	26	25	25	29	28
30	26	26	25	26	25	26
31	26	27	26	27	24	27
32	27	27	27	28	26	27
33	27	27	27	28	26	27
34	27	28	28	29	29	28
35	27	31	29	31	29	29
36	29	34	32	34	31	31
37	31	36	35	37	35	34
38	34	37	38	39	36	36
39	37	38	39	39	37	38
40	38	34	37	37	35	38
41	36	32	34	32	32	35
42	32	29	29	29	28	31
43	29	32	29	32	29	30
44	31	37	34	37	34	34
45	34	40	38	41	37	37
46	37	41	41	42	40	39
47	39	41	41	42	41	40
48	41	40	41	41	41	41
49	41	38	39	39	38	40

Table 1. (Cont'd.)

	Farm Price					
Week	1	2	3	4	5	Avg.
50	39	33	34	33	33	37
51	33	29	31	32	31	32
52	31	29	26	29	28	30
53	29	29	25	29	28	28
Avg.	39.98	39.92	39.83	40.55	40.00	40.05

*October 24, 1969 to October 23, 1970.
[a]Cents per dozen.

Table 2. The Medium Size Farm Prices[a] for the Respective Handlers for the 53-Week Sample.*

	Farm Price					
Week	1	2	3	4	5	Avg.
1	36	37	36	37	35	37
2	36	38	37	39	36	37
3	38	42	40	45	36	40
4	42	49	46	50	41	45
5	47	51	51	54	47	49
6	52	52	52	54	51	52
7	53	52	51	54	51	53
8	54	53	51	54	53	53
9	54	53	51	54	53	53
10	54	53	51	54	54	53
11	54	50	49	52	54	52
12	52	48	45	47	53	50
13	48	52	46	52	48	49
14	50	42	50	52	50	48
15	52	46	49	48	51	50
16	50	44	44	45	49	48
17	46	40	42	42	45	44
18	43	35	39	37	43	40
19	38	31	35	31	38	36
20	34	30	31	32	33	33
21	32	32	32	37	31	32
22	35	34	32	39	34	34
23	38	29	30	28	37	34
24	35	25	28	24	35	31
25	26	25	25	25	26	26
26	26	25	25	27	25	26
27	26	25	25	27	25	26
28	25	20	22	20	25	23
29	22	18	17	16	21	20
30	17	19	16	19	16	18
31	18	20	18	19	17	19
32	18	20	18	20	18	19
33	19	20	18	18	17	19
34	18	20	17	19	18	19
35	18	22	19	22	19	20
36	20	23	21	23	22	21
37	21	25	24	26	24	23
38	23	26	24	27	24	24
39	26	26	25	27	24	26
40	26	23	23	24	23	25
41	24	21	22	21	21	23
42	21	20	19	20	19	20
43	20	23	20	24	20	21
44	22	26	24	27	23	24
45	24	26	25	26	23	25
46	24	26	25	26	23	25
47	24	26	25	27	24	25
48	25	31	29	32	29	28
49	28	31	31	32	30	30

Table 2. (Cont'd.)

	Farm Price					
Week	1	2	3	4	5	Avg.
50	30	27	27	27	26	29
51	27	26	24	24	24	26
52	24	23	18	20	20	23
53	20	23	19	22	21	21
Avg.	32.74	32.15	31.38	32.92	32.17	32.23

*October 24, 1969 to October 23, 1970.
[a]Cents per dozen.

Table 3. The Large Size Farm Prices[a] for the Respective Handlers for the 20-Week Sample.*

Week	1	2	3	4	5	Avg.
1	30	24	26	25	25	28
2	23	22	23	23	23	23
3	23	23	22	23	23	23
4	23	25	24	27	25	24
5	25	24	26	25	25	25
6	24	22	23	23	23	24
7	23	22	22	23	22	23
8	22	23	23	24	23	23
9	22	26	24	27	25	24
10	24	28	27	29	27	26
11	27	29	29	30	29	28
12	28	29	29	30	29	29
13	28	29	28	30	27	29
14	26	25	26	25	24	26
15	23	25	21	21	19	23
16	20	22	21	24	21	21
17	21	25	25	27	25	23
18	25	22	25	24	23	25
19	23	20	22	22	21	22
20	23	20	22	22	22	22
Avg.	24.15	24.25	24.40	25.20	24.05	24.55

*January 7, 1972 to May 19, 1972.
[a]Cents per dozen.

Table 4. The Medium Size Farm Prices[a] for the Respective Handlers for the 20-Week Sample.*

Week	1	2	3	4	5	Avg.
1	27	22	24	22	23	25
2	20	18	18	18	22	19
3	18	19	17	19	18	18
4	18	21	19	22	21	19
5	20	20	20	20	21	20
6	19	18	18	18	17	19
7	18	18	17	19	18	18
8	18	18	18	19	18	18
9	18	19	18	20	19	19
10	19	22	21	25	22	21
11	22	23	25	27	26	23
12	25	23	26	26	26	25
13	25	23	25	26	24	25
14	23	20	20	18	18	22
15	19	20	15	14	14	19
16	15	17	16	19	17	16
17	17	21	21	23	21	19
18	21	19	21	19	19	21
19	15	15	15	15	16	15
20	15	15	15	15	16	15
Avg.	19.60	19.55	19.45	20.20	19.80	19.80

*January 7, 1972 to May 19, 1972.
[a]Cents per dozen.

Table 5. The Large Size Weekly USDA, Urner-Barry, and the Five Individual Prices-to-Retailer[a] for the 53-Week Sample.*

Week	USDA	U/B	A	1	2	3	4	5
1	50	48	+2	50	51	53	51	53
2	53	51	+2	53	54	56	55	56
3	57	55	+2	57	58	60	58	62
4	62	59	+3	61	62	64	63	64
5	64	62	+2	64	65	67	66	67
6	66	62	+4	64	65	67	66	67
7	66	63	+3	65	66	68	66	68
8	66	64	+2	66	67	69	68	69
9	68	64	+4	66	67	69	68	69
10	68	64	+4	66	67	69	67	69
11	68	62	+6	64	65	67	63	67
12	63	60	+3	62	63	65	63	65
13	67	63	+4	65	66	68	67	68
14	67	63	+4	65	66	68	67	68
15	62	56	+6	58	59	61	60	61
16	59	55	+4	57	58	60	57	60
17	59	55	+4	57	58	60	54	57
18	56	50	+6	52	53	55	52	55
19	52	48	+4	50	51	53	50	53
20	51	48	+3	50	51	53	50	53
21	53	50	+3	52	53	55	52	55
22	54	49	+5	51	52	54	51	54
23	53	49	+4	51	52	54	41	54
24	43	37	+6	39	40	42	37	42
25	41	38	+3	40	41	43	38	43
26	42	38	+4	40	41	43	40	43
27	42	39	+3	41	42	44	40	44
28	39	35	+4	37	38	40	37	40
29	35	31	+4	33	34	36	33	36
30	35	32	+3	34	35	37	35	37
31	37	35	+2	35	36	38	35	38
32	38	34	+4	36	37	39	36	39
33	38	34	+4	36	37	39	36	39
34	38	35	+3	37	38	40	36	40
35	39	37	+2	39	40	42	39	42
36	42	40	+2	42	43	45	42	45
37	46	43	+3	45	46	48	45	48
38	47	45	+2	46	48	49	47	50
39	49	45	+4	47	48	50	47	50
40	47	43	+4	45	46	48	45	48
41	42	40	+2	42	43	45	40	43
42	39	35	+4	37	38	40	37	40
43	40	38	+2	40	41	43	40	43
44	45	43	+2	45	46	48	45	48
45	50	47	+3	49	50	52	49	52
46	52	48	+4	50	51	53	50	53
47	52	48	+4	50	51	53	50	53
48	50	47	+3	49	50	52	49	52
49	49	45	+4	47	48	50	47	50

Table 5. (Cont'd.)

Week	USDA	U/B	A	1	2	3	4	5
50	45	39	+6	41	42	44	41	44
51	42	38	+4	40	41	43	40	43
52	40	35	+5	37	38	40	37	40
53	39	35	+4	37	38	40	37	40
Avg.	50.32	46.77	+3.55	48.73	49.74	51.72	48.77	51.68

A - USDA-Urner-Barry Difference.
*October 24, 1969 to October 23, 1970.
[a]Cents per dozen.

Table 6. The Medium Size Weekly USDA, Urner-Barry, and the Five Individual Prices-to-Retailer[a] for the 53-Week Sample.*

Week	USDA	U/B	A	1	2	3	4	5
1	46	43	+3	45	46	47	46	47
2	47	45	+2	47	48	49	48	48
3	51	51	0	53	54	55	54	55
4	57	57	0	59	60	61	61	61
5	60	61	-1	63	64	65	65	65
6	64	61	+3	63	64	65	65	65
7	62	61	+1	63	64	65	65	65
8	63	61	+2	63	64	65	65	65
9	64	61	+3	63	64	65	65	65
10	64	61	+3	63	64	65	65	65
11	64	58	+6	60	61	62	62	62
12	58	54	+4	56	57	58	58	58
13	59	59	0	61	62	63	63	63
14	59	59	0	61	62	63	63	63
15	59	55	+4	57	58	59	59	59
16	56	52	+4	54	55	56	54	56
17	56	52	+4	54	55	56	51	53
18	50	44	+6	46	47	48	46	48
19	44	40	+4	42	43	44	40	44
20	42	39	+3	41	42	43	41	43
21	44	44	0	46	47	48	45	48
22	48	46	+2	48	49	50	47	50
23	48	46	+2	48	49	50	37	50
24	37	33	+4	35	36	37	33	37
25	37	34	+3	36	37	38	33	38
26	38	34	+4	36	37	38	36	38
27	37	32	+5	34	35	36	35	36
28	32	27	+5	29	30	31	31	31
29	27	23	+4	25	26	27	27	27
30	29	26	+3	28	29	30	30	30
31	30	26	+4	28	29	30	30	30
32	31	27	+4	29	30	31	31	31
33	30	25	+5	27	28	29	29	29
34	30	26	+4	28	29	30	30	30
35	31	29	+2	31	32	33	32	33
36	34	30	+4	32	33	34	33	34
37	36	33	+3	35	36	37	35	37
38	37	34	+3	36	37	38	36	38
39	38	34	+4	36	37	38	36	38
40	36	31	+5	33	34	35	33	35
41	32	28	+4	30	31	32	30	32
42	31	27	+4	29	30	31	29	31
43	31	31	0	33	34	35	32	35
44	34	34	0	36	37	38	35	38
45	37	34	+3	36	37	38	35	38
46	38	34	+4	36	37	38	35	38
47	36	35	+1	37	38	39	36	40
48	38	39	-1	41	42	43	41	43
49	41	39	+2	41	42	43	40	43

Table 6. (Cont'd.)

Week	USDA	U/B	A	1	2	3	4	5
50	39	34	+5	36	37	38	35	38
51	36	31	+5	33	34	35	32	35
52	33	27	+6	29	30	31	28	31
53	32	29	+3	31	32	33	30	31
Avg.	43.27	40.30	+2.92	42.30	43.30	44.30	42.49	44.21

A-USDA-Urner-Barry Difference.
*October 24, 1969 to October 23, 1970.
[a]Cents per dozen.

Table 7. The Large Size Weekly USDA, Urner-Barry, and the Five Individual Prices-to-Retailer[a] for the 20-Week Sample.*

Week	USDA	U/B	A	1	2	3	4	5
1	35	33	+2	35	34	37	33	35
2	33	31	+2	33	32	35	31	35
3	33	31	+2	33	32	35	31	35
4	35	34	+1	36	35	38	34	38
5	37	35	+2	37	36	39	33	37
6	33	31	+2	33	32	35	31	35
7	33	31	+2	33	32	35	31	35
8	34	32	+2	34	33	36	32	36
9	36	34	+2	36	35	38	35	39
10	39	37	+2	39	41	38	37	41
11	40	38	+2	40	39	42	38	42
12	40	38	+2	40	39	42	38	42
13	40	38	+2	40	39	42	38	42
14	35	33	+2	35	34	37	33	37
15	31	29	+2	31	29	33	29	33
16	32	31	+1	33	32	35	32	36
17	36	35	+1	37	36	39	35	39
18	34	33	+1	35	33	37	32	36
19	32	30	+2	32	30	34	32	34
20	33	31	+2	33	31	35	31	35
Avg.	35.05	33.25	+1.80	35.25	34.05	37.25	33.30	37.10

A - USDA-Urner-Barry Difference.
*January 7, 1972 to May 19, 1972.
[a]Cents per dozen.

Table 8. The Medium Size Weekly USDA, Urner-Barry, and the Five Individual Prices-to-Retailer[a] for the 20-Week Sample.*

Week	USDA	U/B	A	1	2	3	4	5
1	33	31	+2	33	32	34	30	30
2	29	27	+2	29	28	30	26	30
3	29	28	+1	30	29	31	27	31
4	32	30	+2	32	31	33	30	34
5	33	30	+3	32	31	33	28	32
6	29	27	+2	29	28	30	26	30
7	30	28	+2	30	29	31	27	31
8	29	28	+1	30	29	31	27	31
9	30	29	+1	29	30	32	29	33
10	33	33	0	35	34	35	33	37
11	36	36	0	38	37	39	35	39
12	36	36	0	38	37	39	35	39
13	36	36	0	38	37	39	35	39
14	29	28	+1	30	29	31	27	31
15	26	24	+2	26	25	27	23	27
16	27	28	-1	30	29	31	28	32
17	33	33	0	35	34	34	31	36
18	31	30	+1	32	29	33	28	32
19	27	25	+2	27	24	28	24	28
20	27	25	+2	27	24	28	24	28
Avg.	30.75	29.60	+1.15	31.50	30.30	32.45	28.65	32.50

A - USDA-Urner-Barry Difference
*January 7, 1972 to May 19, 1972.
[a]Cents per dozen.

Table 9. The Weekly Large Size Retail Prices and Retail Margins for the Respective Stores for the 53-Week Sample.*

	1		2		3		4		5		6		7		Lan	
Week	P	M	P	M	P	M	P	M	P	M	P	M	P	M	P	M
1	63	13	67	17	63	13	65	15	68	18	49	-1	59	9	65.25	15.25
2	65	12	69	16	69	16	71	18	72	19	61	8	61	8	65.67	12.67
3	69	12	75	18	71	14	59	2	74	17	69	12	65	8	71.83	14.83
4	67	5	79	17	75	13	80	18	77	15	69	7	71	9	75.00	13.00
5	77	13	79	15	81	17	79	15	79	15	75	11	75	11	77.78	13.78
6	77	11	79	13	81	15	79	13	79	13	75	9	77	11	78.00	12.00
7	79	13	79	13	81	15	83	17	81	15	77	11	77	11	78.71	12.71
8	79	13	83	17	83	17	83	17	83	17	79	13	72	6	80.14	14.14
9	79	11	83	15	85	17	83	15	82	14	77	9	77	9	80.71	12.71
10	79	11	83	15	85	17	83	15	81	13	77	9	77	9	81.00	13.00
11	79	11	79	11	85	17	83	15	83	15	77	9	78	10	80.57	12.57
12	77	14	79	16	79	16	79	16	79	16	77	14	69	6	76.71	13.71
13	77	11	83	17	83	17	85	19	83	17	77	11	76	10	80.42	14.42
14	79	12	79	12	85	18	84	17	83	16	79	12	77	10	80.85	13.85
15	75	11	77	13	80	16	80	16	79	15	74	10	74	10	77.00	13.00
16	69	10	75	16	75	16	75	16	74	15	67	8	67	8	71.57	12.57
17	73	14	69	10	73	14	69	10	71	12	67	8	67	8	69.57	10.57
18	69	13	69	13	69	13	68	12	69	13	63	7	63	7	67.14	11.14
19	65	13	65	13	67	15	65	13	67	15	63	11	61	9	64.57	12.57
20	60	9	67	16	67	16	65	14	65	14	63	12	59	8	63.71	12.71
21	65	12	69	16	65	12	68	15	62	9	65	12	59	6	64.57	11.57
22	59	5	59	5	67	13	63	9	62	8	63	9	48	6	64.00	10.00
23	60	7	59	6	67	14	67	14	67	14	63	10	61	8	65.00	12.00
24	49	4	53	8	57	12	53	8	53	8	63	18	53	8	55.33	10.33
25	53	12	53	12	51	10	54	13	55	14	53	12	47	6	51.43	10.43
26	55	14	53	12	52	11	54	13	55	14	49	8	48	7	52.14	11.14
27	55	13	53	11	53	11	55	13	55	13	53	11	49	7	52.43	10.43
28	45	4	51	10	53	12	51	10	51	10	52	11	49	8	50.29	9.29
29	45	10	39	4	47	12	46	11	47	12	53	18	47	12	47.50	12.50
30	45	10	47	12	45	10	46	11	47	12	47	12	47	12	46.29	11.29
31	47	11	47	11	45	9	48	12	49	13	47	11	43	7	46.86	10.86
32	44	7	47	10	47	10	48	11	49	12	47	10	45	8	46.57	9.57
33	49	11	49	11	47	9	49	11	49	11	49	11	45	7	48.00	10.00
34	44	6	49	11	47	9	49	11	49	11	47	9	45	7	47.14	9.14
35	51	12	53	14	49	10	53	14	53	14	49	10	45	6	50.00	11.00
36	54	12	59	17	53	11	53	11	57	15	55	13	49	7	54.53	12.53
37	57	12	63	18	57	12	47	2	61	16	55	10	53	8	57.50	12.50
38	59	12	63	16	59	12	49	2	61	14	55	8	57	10	57.57	10.57
39	61	12	59	10	61	12	63	14	63	14	59	10	57	8	60.14	11.14
40	59	12	57	10	63	16	59	12	63	16	59	12	57	10	59.29	12.29
41	59	15	55	11	57	13	55	11	57	13	51	7	55	11	55.43	11.43
42	49	10	53	14	51	12	51	12	57	18	51	12	50	11	51.57	12.57
43	29	-11	59	19	55	15	42	2	59	19	51	11	51	11	54.60	14.60
44	49	4	65	20	57	12	49	4	61	16	59	14	51	6	58.40	13.40
45	61	12	67	18	61	12	65	16	65	16	59	10	57	8	62.00	13.00
46	63	11	69	17	65	13	67	15	66	14	63	11	57	5	64.14	12.14
47	63	11	69	17	65	13	67	15	66	14	65	13	61	9	64.86	12.86
48	65	15	69	19	65	15	67	17	66	16	63	13	61	11	65.43	15.43
49	63	14	47	-2	63	14	53	4	57	8	63	14	61	12	61.20	12.20

Table 9. (Cont'd.)

	1		2		3		4		5		6		7		Lan	
Week	P	M	P	M	P	M	P	M	P	M	P	M	P	M	P	M
50	49	4	55	10	53	8	55	10	56	11	55	10	55	10	53.71	8.71
51	53	11	55	13	53	11	54	12	55	13	55	13	49	7	53.14	11.14
52	44	4	53	13	51	11	51	11	45	5	55	15	49	9	51.80	11.80
53	49	10	53	14	49	10	51	12	38	-1	55	16	49	10	51.00	12.00

P - Retail Price (cents per dozen).
M - Retail Margin (cents per dozen).
(Underlined Price Indicates a "Special").
*October 24, 1969 to October 23, 1970.

Table 10. The Weekly Medium Size Retail Prices and Retail Margins for the Respective Stores for the 53-Week Sample.*

	1		2		3		4		5		6		7		Lan	
Week	P	M	P	M	P	M	P	M	P	M	P	M	P	M	P	M
1	59	13	59	13	60	14	59	13	58	12	55	9	53	9	57.57	11.57
2	49	2	65	18	61	14	63	16	62	15	55	8	57	10	60.33	13.33
3	63	12	71	20	63	12	68	17	68	17	59	8	59	8	64.28	13.28
4	63	6	75	18	71	14	76	19	73	16	59	2	65	8	70.33	13.33
5	73	14	77	18	77	18	78	19	75	16	69	10	73	14	74.42	15.42
6	75	12	77	14	79	16	78	15	75	12	73	10	75	12	75.85	12.85
7	77	15	77	15	79	17	79	17	76	14	73	11	75	13	76.42	14.42
8	77	14	79	16	79	16	79	16	77	14	73	10	75	12	76.85	13.85
9	77	13	79	15	79	15	79	15	77	13	73	9	75	11	76.85	12.85
10	77	13	79	15	79	15	79	15	77	13	73	9	75	11	76.85	12.85
11	77	13	75	11	79	15	79	15	73	9	73	9	75	11	75.71	11.71
12	73	15	75	17	73	15	74	16	73	15	73	15	73	15	73.43	15.43
13	73	14	79	20	75	16	78	19	78	19	73	14	73	14	75.42	16.42
14	75	16	75	16	79	20	78	19	79	20	73	14	75	16	75.57	16.57
15	72	13	72	13	75	16	75	16	73	14	69	10	69	10	71.71	12.71
16	68	12	69	13	71	15	71	15	69	13	65	9	57	1	68.83	12.83
17	69	13	67	11	69	13	65	9	64	8	65	9	65	9	66.71	10.71
18	58	7	59	8	63	12	61	10	57	6	59	8	61	10	59.57	8.57
19	50	5	59	14	59	14	55	10	47	2	59	14	43	-2	58.00	13.00
20	53	10	59	16	59	16	54	11	53	10	53	10	51	8	54.43	11.43
21	57	13	61	17	55	11	59	15	57	13	39	-5	51	7	56.50	12.50
22	48	0	59	11	59	11	47	-1	57	9	39	-9	55	7	57.25	9.25
23	49	1	49	1	61	13	63	15	57	9	53	5	51	3	60.33	12.33
24	48	11	49	12	51	14	48	11	43	6	55	16	51	14	48.85	11.85
25	48	11	49	12	48	11	48	11	43	6	47	10	45	8	46.86	9.86
26	48	10	49	11	49	11	48	10	49	11	47	9	45	7	47.71	9.71
27	49	12	43	6	47	10	48	11	39	2	47	10	45	8	47.00	10.00
28	37	5	39	7	43	11	40	8	36	4	47	15	45	13	42.60	10.60
29	37	10	34	7	37	10	37	10	36	9	47	20	37	10	37.71	10.71
30	34	5	39	10	35	6	40	11	31	2	39	10	35	6	36.83	7.83
31	37	7	39	9	39	9	39	9	39	9	29	-1	35	5	38.60	8.60
32	39	8	37	6	39	8	39	8	39	8	39	8	37	6	38.28	7.28
33	39	9	39	9	37	7	39	9	39	9	39	9	37	7	38.28	8.28
34	39	9	39	9	37	7	40	10	39	9	39	9	37	7	38.43	8.43
35	43	12	45	14	39	8	47	16	41	10	39	8	27	-4	42.33	11.33
36	45	11	39	5	43	11	47	13	43	9	45	11	45	11	44.16	10.16
37	39	3	49	13	45	9	47	11	47	11	45	9	43	7	44.86	8.86
38	44	7	53	16	49	12	47	10	47	10	45	8	45	8	47.29	10.29
39	49	11	49	11	49	11	49	11	47	9	48	10	45	7	47.83	9.83
40	49	13	45	9	47	11	45	9	47	11	48	12	45	9	46.43	10.43
41	45	13	45	13	43	11	42	10	53	21	41	9	43	11	44.43	12.43
42	33	2	43	12	39	8	33	2	19	-12	41	10	41	10	40.75	9.75
43	39	8	49	18	49	18	45	14	43	12	41	10	41	10	43.71	12.71
44	39	5	53	19	45	11	46	12	49	15	46	12	41	7	46.00	12.00
45	49	12	53	16	47	10	39	2	49	12	47	10	45	8	48.17	11.17
46	49	11	49	11	47	9	49	11	49	11	48	10	45	7	47.83	9.83
47	49	13	53	17	47	11	48	12	49	13	49	13	47	11	48.29	12.29
48	53	15	53	15	51	13	45	7	54	16	49	11	47	9	51.20	13.20
49	55	14	43	2	55	14	55	14	46	5	49	8	51	10	52.80	11.80

Table 10. (Cont'd.)

	1		2		3		4		5		6		7		Lan	
Week	P	M	P	M	P	M	P	M	P	M	P	M	P	M	P	M
50	47	8	48	9	43	6	39	0	50	11	49	10	44	5	48.00	9.00
51	39	3	48	12	45	9	38	2	48	12	49	13	37	1	47.50	11.50
52	39	6	43	10	43	10	37	4	35	2	49	16	37	4	41.80	8.80
53	41	9	43	11	39	7	32	0	36	4	49	17	37	5	41.60	9.60

P - Retail Price (cents per dozen).
M - Retail Margin (cents per dozen).
(Underlined Price Indicates a "Special").
*October 24, 1969 to October 23, 1970.

Table 11. The Weekly Large Size Retail Prices and Retail Margins for the Respective Stores for the 20-Week Sample.*

Week	1		2		3		4		5		6		7		Lan	
	P	M	P	M	P	M	P	M	P	M	P	M	P	M	P	M
1	55	20	49	14	53	18	45	10	47	12	53	18	45	10	49.50	14.50
2	49	16	49	16	45	12	43	10	46	13	53	20	43	10	46.86	16.86
3	49	16	49	16	45	12	43	10	46	13	53	20	43	10	46.86	16.86
4	53	18	49	14	47	12	47	12	51	16	47	12	43	8	48.14	13.14
5	53	16	45	8	49	12	45	8	44	7	47	10	43	6	46.57	9.57
6	49	16	45	12	45	12	43	10	45	12	49	14	41	8	45.00	12.00
7	49	16	45	12	45	12	41	8	45	12	47	14	41	8	44.71	11.71
8	53	19	49	15	45	11	45	11	47	13	47	13	41	7	46.71	12.71
9	55	19	49	13	47	11	48	12	46	10	47	11	41	5	47.57	11.57
10	57	18	52	13	49	10	49	10	48	9	47	8	45	6	49.57	10.57
11	59	19	49	9	51	11	51	11	51	11	51	11	45	5	51.00	11.00
12	59	19	49	9	53	13	51	11	47	7	51	11	49	9	51.29	11.29
13	59	19	39	-1	53	13	48	8	47	7	43	3	47	7	50.80	10.80
14	49	14	39	4	53	18	44	9	43	8	51	16	43	8	47.12	12.12
15	44	13	35	4	43	12	40	9	41	10	51	20	41	10	43.33	12.33
16	49	17	39	7	44	12	44	12	44	12	51	19	43	11	44.86	12.86
17	55	19	45	9	47	11	47	11	48	12	51	15	47	11	48.57	12.57
18	55	21	39	5	51	17	45	11	42	8	39	5	47	13	48.00	14.00
19	53	21	38	6	47	15	44	12	41	9	49	17	42	10	44.86	12.86
20	53	20	39	6	47	14	43	10	43	10	49	16	39	6	44.71	11.71

P - Retail Price (cents per dozen).
M - Retail Margin (cents per dozen).
(Underlined Price Indicates a "Special").
*January 7, 1972 to May 19, 1972.

Table 12. The Weekly Medium Size Retail Prices and Retail Margins for the Respective Stores for the 20-Week Sample.*

Week	1		2		3		4		5		6		7		Lan	
	P	M	P	M	P	M	P	M	P	M	P	M	P	M	P	M
1	52	19	45	12	49	16	39	6	37	4	49	16	41	8	44.57	12
2	45	16	45	16	41	12	37	8	36	7	49	20	39	10	41.71	13
3	45	16	45	16	39	10	39	10	36	7	49	20	39	10	41.71	13
4	45	13	45	13	43	11	42	10	40	8	43	11	39	7	43.00	11
5	49	16	33	0	45	12	39	6	38	5	43	10	41	8	42.50	10
6	46	17	39	10	41	12	38	9	36	7	43	14	37	8	40.00	11
7	45	15	39	9	41	11	33	3	25	-5	43	13	35	5	40.60	11
8	49	16	41	12	41	12	39	10	38	9	43	14	35	1	40.86	12
9	49	19	43	13	41	11	39	9	37	7	43	13	37	7	41.29	11
10	51	18	39	6	45	12	44	11	43	10	43	10	39	6	43.43	10
11	53	17	39	3	49	13	48	12	46	10	45	9	39	3	48.20	12
12	51	15	45	9	49	13	48	12	41	5	45	9	43	7	46.00	10
13	53	17	38	2	49	13	38	2	39	3	45	9	44	8	47.75	12
14	39	10	38	9	41	12	39	10	35	6	45	16	39	10	39.43	10
15	33	7	33	7	35	9	33	7	33	7	45	19	37	11	36.00	10
16	45	18	37	10	39	12	38	11	38	11	45	18	37	10	39.86	13
17	49	16	43	10	44	11	43	10	42	9	45	12	42	9	44.00	11
18	49	18	37	6	47	16	43	12	37	6	45	14	43	12	43.00	10
19	39	12	26	-1	43	16	36	9	34	7	45	18	35	8	38.67	12
20	45	18	29	2	39	12	36	9	34	7	45	18	35	8	39.00	12

P - Retail Price (cents per dozen).
M - Retail Margin (cents per dozen).
(Underlined Price Indicates a "Special").
*January 7, 1972 to May 19, 1972.

Table 13. Price Change Readings for the Respective Listings--Large Size, 53-Week Sample.†

Week	Whl[a]	Farm	U/B[b]	Lan[c]	Cents Per Change 1*	2*	3*	4*	5*	6*	7*
2	+ 3	+1	+ 3	+ 1	+ 2	+ 2	+ 1	+ 6	+ 4	+10	+ 2
3	+ 4	+3	+ 4	+ 6	+ 3	+ 6	+ 2	-12	+ 2	+10	+ 4
4	+ 5	+4	+ 4	+ 3	- 1	+ 4	+ 4	+21	+ 3	0	+ 6
5	+ 2	+4	+ 3	+ 3	+10	0	+ 6	- 1	+ 2	+ 6	+ 4
6	+ 2	+2	0	0	0	0	0	0	0	0	+ 2
7	0	0	+ 1	+ 1	+ 2	0	0	+ 4	+ 2	+ 2	0
8	0	+1	+ 1	+ 1	0	+ 4	+ 2	0	+ 2	+ 4	- 5
9	+ 2	+1	0	+ 1	0	0	+ 2	0	- 1	+ 2	+ 5
10	0	0	0	0	0	0	+ 2	0	0	0	0
11	0	-1	- 2	0	0	- 4	- 2	0	+ 2	0	+ 1
12	- 5	-2	- 2	- 4	- 2	0	- 7	- 4	- 5	0	- 9
13	+ 4	0	+ 3	+ 3	0	+ 4	+ 5	+ 6	+ 4	0	+ 7
14	0	+2	0	+ 1	+ 2	+ 4	+ 2	- 1	+ 1	+ 2	+ 1
15	- 5	-2	- 7	- 4	- 4	- 2	- 5	- 4	- 4	- 5	- 3
16	- 3	-4	- 3	- 5	- 6	- 2	- 5	- 5	- 6	- 7	- 7
17	0	-2	- 3	- 2	+ 4	- 6	- 2	- 6	- 4	0	0
18	- 3	-3	- 2	- 3	- 4	0	- 4	- 1	0	- 4	- 4
19	- 4	-2	- 2	- 2	- 4	- 4	- 2	- 3	- 3	0	- 2
20	- 1	-2	0	- 1	- 5	+ 2	0	0	- 1	0	- 2
21	+ 2	0	+ 2	+ 1	+ 5	+ 2	- 2	+ 3	- 4	+ 2	0
22	+ 1	+1	- 1	- 1	- 6	-10	+ 2	- 5	+ 1	- 1	-11
23	- 1	-2	-10	+ 1	+ 4	0	0	+ 4	+ 6	0	+13
24	-10	-4	- 4	-10	-14	- 6	-10	-14	-15	- 1	- 8
25	- 2	-6	+ 1	- 4	+ 4	0	- 6	+ 1	+ 1	-15	- 6
26	+ 1	+1	+ 2	+ 1	+ 2	0	+ 1	0	0	+ 1	+ 1
27	0	0	0	0	0	0	+ 1	+ 1	0	- 1	+ 1
28	- 3	-1	- 3	- 2	-10	- 2	0	- 4	- 3	- 4	0
29	- 4	-3	- 4	- 2	0	-12	- 6	- 5	- 4	+ 1	- 2
30	0	-2	+ 1	- 2	0	+12	- 2	0	0	- 6	0
31	+ 2	+1	+ 1	+ 1	+ 2	0	0	+ 2	+ 1	- 2	+ 1
32	+ 1	0	+ 1	0	- 3	0	+ 2	0	0	+ 2	- 3
33	0	0	0	+ 1	+ 5	+ 2	0	+ 1	0	+ 2	0
34	0	+1	0	- 1	- 5	0	0	0	+ 1	- 2	0
35	+ 1	+1	+ 3	+ 3	+ 7	+ 4	+ 2	+ 4	+ 3	0	0
36	+ 3	+2	+ 3	+ 5	+ 6	+ 6	+ 4	0	+ 4	+ 8	+ 4
37	+ 4	+3	+ 3	+ 3	0	+ 4	+ 4	- 6	+ 4	0	+ 4
38	+ 1	+2	+ 2	0	+ 2	0	+ 2	+ 2	+ 1	0	+ 4
39	+ 2	+2	0	+ 2	+ 2	+ 4	+ 2	+14	0	+ 4	0
40	- 2	0	- 2	- 1	- 2	- 2	+ 2	- 4	0	0	0
41	- 5	-3	- 5	- 4	0	- 2	- 6	- 4	- 5	- 8	- 2
42	- 3	-4	- 3	- 3	-10	- 2	- 6	- 4	0	0	- 5
43	+ 1	-1	+ 3	+ 3	-20	+ 6	+ 4	- 9	+ 1	0	+ 1
44	+ 5	+4	+ 5	+ 3	+20	+ 6	+ 2	+ 7	+ 3	+ 8	0
45	+ 5	+3	+ 4	+ 4	+12	+ 2	+ 4	+16	+ 4	0	+ 6
46	+ 2	+2	+ 1	+ 2	+ 2	+ 2	+ 4	+ 2	+ 1	+ 4	0
47	0	+1	0	+ 1	0	0	0	0	- 1	+ 2	+ 4

Table 13. (Cont'd.)

Week	Whl[a]	Farm	U/B[b]	Lan[c]	1*	2*	3*	4*	5*	6*	7*
48	- 2	+1	- 1	0	+ 4	0	0	0	+ 2	- 2	0
49	- 1	-1	- 2	- 4	- 4	-22	- 2	- 6	-10	0	0
50	- 4	+3	- 6	- 7	- 9	+ 8	-10	+ 2	- 7	- 8	- 6
51	- 3	-5	- 1	- 1	- 1	0	0	- 1	+ 6	- 2	- 6
52	- 2	-2	- 3	- 1	- 9	- 2	- 2	- 3	-10	+ 2	0
53	- 1	-2	0	- 1	+ 5	0	- 2	0	- 7	0	0

[a]Wholesale Price
[b]Urner-Barry Quote
[c]Lansing Market Average
*Store Number
Underlined values were eliminated for the analyses.
†October 24, 1969 to October 23, 1970.

Table 14. Price Change Readings for the Respective Listings--Medium Size, 53-Week Sample.†

Week	Whl[a]	Farm	U/B[b]	Lan[c]	Cents Per Change 1*	2*	3*	4*	5*	6*	7*
2	+ 1	0	+ 2	+ 2	-10	+ 6	+ 1	+ 4	+ 4	0	+ 3
3	+ 4	+3	+ 6	+ 4	+14	+ 6	+ 2	+ 5	+ 6	+ 4	+ 2
4	+ 6	+5	+ 6	+ 6	0	+ 4	+ 8	+ 8	+ 5	0	+ 6
5	+ 3	+4	+ 4	+ 4	+10	+ 2	+ 6	+ 2	+ 2	+10	+ 8
6	+ 4	+3	0	+ 2	+ 2	0	+ 2	0	0	+ 4	+ 2
7	- 2	+1	0	0	+ 2	0	0	+ 1	+ 1	0	0
8	+ 1	0	0	+ 1	0	+ 2	0	0	+ 1	0	0
9	+ 1	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0
11	0	-1	- 3	- 1	0	- 4	0	0	- 4	0	0
12	- 6	-2	- 4	- 3	- 4	0	- 6	- 5	0	0	- 1
13	+ 1	-1	+ 5	+ 2	0	+ 4	+ 2	+ 4	+ 5	0	- 1
14	0	-1	0	+ 1	+ 2	- 4	+ 4	0	+ 1	0	+ 2
15	0	+2	- 4	- 4	- 7	- 4	- 5	- 6	-10	- 5	- 8
16	- 3	-2	- 3	- 1	0	- 2	- 3	- 1	0	- 3	-10
17	0	-4	0	- 2	+ 1	- 2	+ 2	- 6	- 5	0	+ 8
18	- 6	-4	- 8	- 7	-11	- 8	-10	- 4	- 7	- 6	- 4
19	- 6	-4	- 4	- 2	- 8	0	- 4	- 6	-10	0	-18
20	- 2	-3	- 1	- 4	+ 3	0	0	- 1	+ 6	- 6	+ 8
21	+ 2	-1	+ 5	+ 3	+ 4	+ 2	+ 4	+ 5	+ 4	-14	0
22	+ 4	+2	+ 2	0	- 9	- 2	+ 4	- 8	0	0	+ 4
23	0	0	0	+ 3	+ 1	-10	+ 2	+16	0	+14	- 4
24	-11	-3	-13	-11	- 1	0	-10	-15	-14	0	0
25	0	-5	+ 1	- 2	0	0	- 2	0	0	- 6	- 6
26	+ 1	0	0	+ 1	0	- 3	- 2	0	+ 4	0	0
27	- 1	0	- 2	0	+ 1	- 3	0	0	- 8	0	0
28	- 5	-3	- 5	- 4	-12	- 4	- 4	- 8	- 3	0	0
29	- 5	-3	- 4	- 7	0	- 5	- 6	- 3	0	0	- 8
30	+ 2	-2	+ 3	- 1	+ 3	+ 5	- 2	+ 3	- 5	- 8	- 2
31	+ 1	+1	0	+ 2	+ 3	0	+ 4	- 1	+ 8	-10	0
32	+ 1	0	+ 1	- 1	+ 2	- 2	0	0	0	+10	+ 2
33	- 1	0	- 2	0	0	+ 2	- 2	0	0	- 1	0
34	0	0	+ 1	0	0	0	0	+ 1	0	+ 1	0
35	+ 1	+1	+ 3	+ 4	+ 4	+ 6	+ 2	+ 7	+ 2	0	-10
36	+ 3	+1	+ 1	+ 2	+ 2	- 6	+ 4	0	+ 2	+ 6	+18
37	+ 2	+2	+ 3	+ 1	- 6	+10	+ 2	0	+ 4	0	- 2
38	+ 1	+1	+ 1	+ 2	+ 7	+ 4	+ 4	0	0	0	+ 2
39	+ 1	+2	0	+ 1	+ 3	- 4	0	+ 2	0	+ 3	0
40	- 2	-1	- 3	- 2	0	- 4	- 2	- 4	0	0	0
41	- 4	-2	- 3	- 2	- 4	0	- 4	- 3	+ 6	- 7	- 2
42	- 1	-3	- 1	- 3	-12	- 2	- 4	- 9	-34	0	- 2
43	0	+1	+ 4	+ 3	+ 6	+ 6	+10	+12	+24	0	0
44	+ 3	+3	+ 3	+ 2	0	+ 4	+ 4	+ 1	+ 6	+ 5	0
45	+ 3	+1	0	+ 2	+10	0	+ 2	- 7	0	+ 1	+ 4
46	+ 1	0	0	0	0	- 4	0	-10	0	+ 1	0
47	- 2	0	+ 1	0	0	+ 4	0	- 1	0	+ 1	+ 2

Table 14. (Cont'd.)

Week	Whl[a]	Farm	U/B[b]	Lan[c]	1*	2*	3*	4*	5*	6*	7*
48	+ 2	+3	+ 4	+ 3	+ 4	0	+ 4	+ 3	+ 5	0	0
49	+ 3	+2	0	+ 2	+ 2	-10	+ 4	+10	8	0	+ 4
50	- 2	-1	- 5	- 5	- 8	+ 5	-10	-16	+ 4	0	- 7
51	- 3	-3	- 3	0	-12	0	0	- 1	- 2	0	- 7
52	- 3	-3	- 4	- 6	0	- 5	- 2	- 1	-13	0	0
53	- 1	-2	+ 2	0	- 2	0	- 4	- 3	+ 1	0	0

[a]Wholesale Price
[b]Urner-Barry Quote
[c]Lansing Market Average
*Store Number
Underlined values were eliminated for the analyses.
†October 24, 1969 to October 23, 1970.

Table 15. Price Change Readings for the Respective Listings--Large Size, 20 Weeks†

Week	Whl[a]	Farm	U/B[b]	Lan[c]	Cents Per Change 1*	2*	3*	4*	5*	6*	7*
2	-2	-5	-2	-2.64	- 6	0	- 8	-2	-1	0	-2
3	0	0	0	0	0	0	0	0	0	0	0
4	+2	+1	+3	+1.28	+ 4	0	+ 2	+4	+5	- 6	0
5	+2	+1	+1	-1.57	0	- 4	+ 2	-2	-7	0	0
6	-4	-1	-4	-1.57	- 4	0	- 4	-2	+1	0	-2
7	0	-1	0	- .29	0	0	0	-2	0	0	0
8	+1	0	+1	+2.00	+ 4	+ 4	0	+4	+2	0	0
9	+2	+1	+2	+ .86	+ 2	0	+ 2	+3	-1	0	0
10	+3	+2	+3	+2.00	+ 2	+ 3	+ 2	+1	+2	0	+4
11	+1	+2	+1	+1.43	+ 2	- 3	+ 2	+2	+3	+4	0
12	0	+1	0	+ .29	0	0	+ 2	0	-4	0	+4
13	0	0	0	- .49	0	-10	0	-3	0	- 8	-2
14	-5	-3	-5	-3.68	-10	0	0	-4	-4	+ 8	-4
15	-4	-3	-4	-3.79	- 5	- 4	-10	-4	-2	0	-2
16	+1	-2	+2	+1.53	+ 5	+ 4	+ 1	+4	+3	0	+2
17	+4	+2	+4	+3.71	+ 6	+ 6	+ 3	+3	+4	0	+4
18	-2	+2	-2	- .57	0	- 6	+ 4	-2	-6	-12	0
19	-2	-3	-3	-3.14	- 2	- 1	- 4	-1	-1	+10	-5
20	+1	0	+1	- .15	0	+ 1	0	-1	+2	0	-3

[a]Wholesale Price
[b]Urner-Barry Quote
[c]Lansing Market Average
*Store Number
Underlined values were eliminated for the analyses.
†January 7, 1972 to May 19, 1972.

Table 16. Price Change Readings for the Respective Listings--Medium Size, 20 Weeks†

Week	Whl[a]	Farm	U/B[b]	Lan[c]	Cents Per Change 1*	2*	3*	4*	5*	6*	7*
2	-4	-6	-4	-2.86	- 7	0	-8	- 2	- 1	0	-2
3	0	-1	-4	0	0	0	-2	+ 2	0	-6	0
4	+3	+1	+2	+1.29	+ 4	0	+4	+ 3	+ 4	-6	0
5	+1	+1	0	- .50	0	-12	+2	- 3	- 2	0	+2
6	-4	-1	-3	-2.50	- 3	+ 6	-4	- 1	- 2	0	-4
7	+1	-1	+1	+ .60	- 1	0	0	- 5	- 9	0	-2
8	-1	0	0	+ .26	+ 4	+ 2	0	+ 6	+13	0	0
9	+1	+1	+1	+ .43	0	+ 2	0	0	- 1	0	+2
10	+3	+2	+4	+2.14	+ 2	- 4	+4	+ 5	+ 6	0	+2
11	+3	+2	+3	+4.77	+ 2	0	+4	+ 4	+ 3	+2	0
12	0	+2	0	-2.20	- 2	+ 6	0	0	- 5	0	+4
13	0	0	0	+1.75	+ 2	- 7	0	-10	- 2	0	+1
14	-7	-3	-8	-8.32	-14	0	-8	+ 1	- 4	0	-5
15	-3	-3	-4	-3.43	- 6	- 5	-6	- 6	- 2	0	-2
16	+1	-3	+4	+3.86	+ 8	+ 4	+4	+ 5	+ 5	0	0
17	+6	+3	+5	+4.14	+ 4	+ 6	+5	+ 5	+ 4	0	+5
18	-2	+2	-3	-1.00	0	- 6	+3	0	- 5	0	+1
19	-4	-6	-5	-4.33	-10	-11	-4	- 7	- 3	0	-8
20	0	0	0	+ .33	+ 6	- 3	-4	0	0	0	0

[a]Wholesale Price
[b]Urner-Barry Quote
[c]Lansing Market Average
*Store Number
Underlined values were eliminated for the analyses.
†January 7, 1972 to May 19, 1972.

APPENDIX II

Table 1. Linear Regression Farm Large = P (Wholesale Large)[b]

	Sum of Squares	d.f.	Mean Square	F
Regression	5308.16	1	5308.16	2203.58[a]
Error	122.85	51	2.41	
Total	5431.02	52		

[a]The results were significant at the P < 0.001 level.
[b]53 Week, Large A.

Table 2. Linear Regression Farm Medium = P (Wholesale Medium)[c]

	Sum of Squares	d.f.	Mean Square	F
Regression	7185.32	1	7185.32	2626.00[a]
Error	139.54	51	2.73	
Total	7324.86	52		

[a]The results were significant at the P < 0.001 level.
[c]53 Week, Medium A.

Table 3. Linear Regression Lansing Market Average Large = P (Wholesale Large)[b]

	Sum of Squares	d.f.	Mean Square	F
Regression	6299.75	1	6299.75	3613.38[a]
Error	88.92	51	1.74	
Total	6388.67	52		

[a]The results were significant at the P < 0.001 level.
[b]53 Week, Large A.

Table 4. Linear Regression Lansing Market Average Large = P (Farm Large)[b]

	Sum of Squares	d.f.	Mean Square	F
Regression	6232.89	1	6232.89	2040.63[a]
Error	155.77	51	3.05	
Total	6388.66	52		

[a]The results were significant at the P < 0.001 level.
[b]53 Week, Large A.

Table 5. Linear Regression Lansing Market Average Medium = P (Wholesale Medium)[c]

	Sum of Squares	d.f.	Mean Square	F
Regression	8899.72	1	8899.72	3272.25[a]
Error	138.70	51	2.72	
Total	9038.43	52		

[a]The results were significant at the P < 0.001 level.
[c]53 Week, Medium A.

Table 6. Linear Regression Lansing Market Average Medium = P (Farm Medium)[c]

	Sum of Squares	d.f.	Mean Square	F
Regression	8866.07	1	8866.07	2623.36[a]
Error	172.36	51	3.38	
Total	9038.43	52		

[a]The results were significant at the P < 0.001 level.
[c]53 Week, Medium A.

Table 7. Linear Regression Wholesale Medium = ((Wholesale Large)[f]

	Sum of Squares	d.f.	Mean Square	F
Regression	6773.45	1	6773.45	840.81[a]
Error	410.85	51	8.05	
Total	7184.30	52		

[a]The results were significant at the P < 0.001 level.

Table 8. Linear Regression Farm Medium = P (Farm Large)[f]

	Sum of Squares	d.f.	Mean Square	F
Regression	6976.73	1	6976.73	1022.05[a]
Error	348.13	51	6.82	
Total	7324.87	52		

[a]The results were significant at the P < 0.001 level.

Table 9. Linear Regression Lansing Market Average Medium = P (Lansing Market Average Large)[f]

	Sum of Squares	d.f.	Mean Square	F
Regression	8542.10	1	8542.10	877.73[a]
Error	496.33	51	9.73	
Total	9038.43	52		

[a]The results were significant at the P < 0.001 level.

[f]53 Week, Large-Medium.

Table 10. Linear Regression Wholesale Medium = P (Urner-Barry Medium)[c]

	Sum of Squares	d.f.	Mean Square	F
Regression	7035.11	1	7035.11	2404.89[a]
Error	149.19	51	2.93	
Total	7184.30	52		

[a]The results were significant at the P < 0.001 level.
[c]53 Week, Medium A.

Table 11. Linear Regression Wholesale Large = P (Urner-Barry Large)[b]

	Sum of Squares	d.f.	Mean Square	F
Regression	5468.47	1	5468.47	3923.90[a]
Error	71.07	51	1.39	
Total	5539.55	52		

[a]The results were significant at the P < 0.001 level.
[b]53 Week, Large A.

Table 12. Linear Regression Farm Large = P (Wholesale Large)[d]

	Sum of Squares	d.f.	Mean Square	F
Regression	75.49	1	75.49	40.60[a]
Error	33.46	18	1.85	
Total	108.95	19		

[a]The results were significant at the P < 0.001 level.
[d]20 Week, Large A.

Table 13. Linear Regression Farm Medium = P (Wholesale Medium)[e]

	Sum of Squares	d.f.	Mean Square	F
Regression	58.74	1	58.74	9.23[a]
Error	114.47	18	6.36	
Total	173.20	19		

[a]The results were significant at the P < 0.001 level.
[e]20 Week, Medium A.

Table 14. Linear Regression Lansing Market Average Large = P (Wholesale Large)[d]

	Sum of Squares	d.f.	Mean Square	F
Regression	82.33	1	82.33	72.93[a]
Error	20.32	18	1.12	
Total	102.65	19		

[a]The results were significant at the P < 0.001 level.
[d]20 Week, Large A.

Table 15. Linear Regression Lansing Market Average Large = P (Farm Large)[d]

	Sum of Squares	d.f.	Mean Square	F
Regression	73.70	1	73.70	45.84[a]
Error	28.94	18	1.60	
Total	102.64	19		

[a]The results were significant at the P < 0.001 level.
[d]20 Week, Large A.

Table 16. Linear Regression Lansing Market Average Medium = P (Wholesale Medium)[e]

	Sum of Squares	d.f.	Mean Square	F
Regression	120.09	1	120.09	37.63[a]
Error	57.45	18	3.19	
Total	177.54	19		

[a]The results were significant at the P < 0.001 level.
[e]20 Week, Medium A.

Table 17. Linear Regression Lansing Market Average Medium = P (Farm Medium)[e]

	Sum of Squares	d.f.	Mean Square	F
Regression	97.13	1	97.13	21.74[a]
Error	80.41	18	4.47	
Total	177.54	19		

[a]The results were significant at the P < 0.001 level.
[e]20 Week, Medium A.

Table 18. Linear Regression Wholesale Medium = P (Wholesale Large)[g]

	Sum of Squares	d.f.	Mean Square	F
Regression	160.34	1	160.34	71.33[a]
Error	40.46	18	2.25	
Total	200.80	19		

[a]The results were significant at the P < 0.001 level.
[g]20 Week, Large-Medium.

Table 19. Linear Regression Farm Medium = P (Farm Large)[g]

	Sum of Squares	d.f.	Mean Square	F
Regression	160.41	1	160.41	225.78[a]
Error	12.79	18	0.71	
Total	173.20	19		

[a]The results were significant at the P < 0.001 level.
[g]20 Week, Large-Medium.

Table 20. Linear Regression Lansing Market Average Medium = P (Lansing Market Average Large)[g]

	Sum of Squares	d.f.	Mean Square	F
Regression	154.73	1	154.73	122.14[a]
Error	22.80	18	1.27	
Total	177.54	19		

[a]The results were significant at the P < 0.001 level.
[g]20 Week, Large - Medium.

Table 21. Linear Regression Wholesale Medium = P (Urner-Barry Medium)[e]

	Sum of Squares	d.f.	Mean Square	F
Regression	156.30	1	156.30	63.23[a]
Error	44.50	18	2.47	
Total	200.80	19		

[a]The results were significant at the P < 0.001 level.
[e]20 Week, Medium A.

Table 22. Linear Regression Wholesale Large = P (Urner-Barry Large)[d]

	Sum of Squares	d.f.	Mean Square	F
Regression	149.75	1	149.75	842.34[a]
Error	3.20	18	0.18	
Total	152.95	19		

[a]The results were significant at the P < 0.001 level.
[d]20 Week, Large A.

Table 23. Analysis of Variance Farm-Retail Margin[b]

Source of Variance	Sum of Squares	d.f.	Mean Square	F
Retail Stores	174.09	6	29.01	15.65*
Price Levels	64.67	7	9.24	4.99*
Error	77.82	42	1.82	
Total	316.58	55		

*The results were significant at the P < 0.01 level.
[b]53 Week, Large A.

Table 24. Analysis of Variance Farm-Retail Margins[c]

Source of Variance	Sum of Squares	d.f.	Mean Square	F
Retail Stores	172.71	6	24.67	5.57*
Price Levels	76.49	7	12.75	10.77*
Error	96.18	42	2.29	
Total	345.38	55		

*The results were significant at the P < 0.01 level.
[c]53 Week, Medium A.

Table 25. Analysis of Variance Average Retail Price[b]

Source of Variance	Sum of Squares	d.f.	Mean Square	F
Retail Stores	171.58	6	28.60	14.97*
Price Levels	5697.41	7	813.92	426.13*
Error	80.34	42	1.91	
Total	5949.33	55		

*The results were significant at the P < 0.01 level.
[b]53 Week, Large A.

Table 26. Analysis of Variance Average Retail Price[c]

Source of Variance	Sum of Squares	d.f.	Mean Square	F
Retail Stores	80.27	6	13.38	6.25*
Price Levels	8180.64	7	1168.66	546.10*
Error	89.84	42	2.14	
Total	8350.75	55		

*The results were significant at the P < 0.01 level.
[c]53 Week, Medium A.

Table 27. Analysis of Variance Wholesale-Retail Margin[b]

Source of Variance	Sum of Squares	d.f.	Mean Square	F
Retail Stores	173.38	6	28.89	15.79*
Price Levels	41.17	7	5.88	3.21*
Error	76.92	42	1.83	
Total	291.47	55		

*The results were significant at the P < 0.01 level.
[b]53 Week, Large A.

Table 28. Analysis of Variance Wholesale-Retail Margin[c]

Source of Variance	Sum of Squares	d.f.	Mean Square	F
Retail Stores	76.49	6	12.75	5.57*
Price Levels	137.82	7	19.68	8.59*
Error	96.18	42	2.29	
Total	310.49	55		

*The results were significant at the P < 0.01 level.
[c]53 Week, Medium A.

Table 29. Analysis of Variance Farm-Retail Margin[e]

Source of Variance	Sum of Squares	d.f.	Mean Square	F
Retail Stores	180.33	6	30.05	8.63*
Price Levels	1.27	2	.63	.18
Error	41.78	12	3.48	
Total	223.38	20		

*The results were significant at the P < 0.01 level.
[e]20 Week, Medium A.

Table 30. Analysis of Variance Farm-Retail Margin[d]

Source of Variance	Sum of Squares	d.f.	Mean Square	F
Retail Stores	184.87	6	30.81	16.97*
Price Levels	.45	2	.23	.12
Error	21.79	12	1.82	
Total	207.11	20		

*The results were significant at the P < 0.01 level.
[d]20 Week, Large A.

Table 31. Analysis of Variance Wholesale-Retail Margin[d]

Source of Variance	Sum of Squares	d.f.	Mean Square	F
Retail Stores	184.86	6	30.81	16.93*
Price Levels	13.97	2	6.99	3.84
Error	21.79	12	1.82	
Total	220.62	20		

*The results were significant at the P < 0.01 level.
[d]20 Week, Large A.

Table 32. Analysis of Variance Wholesale-Retail Margin[e]

Source of Variance	Sum of Squares	d.f.	Mean Square	F
Retail Stores	183.92	6	30.65	9.60*
Price Levels	3.56	2	1.78	.56
Error	38.16	12	3.18	
Total	225.64	20		

*The results were significant at the P < 0.01 level.
[e]20 Week, Medium A.

Table 33. Analysis of Variance Average Retail Price[e]

Source of Variance	Sum of Squares	d.f.	Mean Square	F
Retail Stores	183.87	6	30.65	9.60*
Price Levels	155.28	2	77.64	24.34*
Error	38.25	12	3.19	
Total	377.40	20		

*The results were significant at the P < 0.01 level.
[e]20 Week, Medium A.

Table 34. Analysis of Variance Average Retail Price[d]

Source of Variance	Sum of Squares	d.f.	Mean Square	F
Retail Prices	184.18	6	30.70	16.16*
Price Levels	88.28	2	44.14	23.23*
Error	22.74	12	1.90	
Total	295.20	20		

*The results were significant at the P < 0.01 level.
[d]20 Week, Large A.

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