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BUTTER PRICES, FROM
PRODUCER TO CONSUMER



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BUTTER PRICES, FROM PRODUCER TO CONSUMER.

BY NEWTON H. CLARK.

INTRODUCTION.

This report shows the prices paid the farmer for the raw material of the butter (butter fat) contained in the milk or cream delivered by him at the creamery, and the prices received for butter by the creamery, by the wholesaler, and by the retailer. Creamery butter only is considered and the prices are for butter passing promptly from producer to consumer. In no case are cold-storage prices given or the margins in the cold-storage business. No study was made of the prices of dairy butter, which is of secondary importance in the large butter markets. The data are for the months of June and December in each of the years 1904, 1910, and 1911. June was selected as representing the season of high production and low prices, and December as representing the season of low production and high prices. Of the years selected for study 1904 had lower average prices than any other year since 1901; in 1910 there was a wide range of prices and the average was higher than for any other recent year; in 1911 there was a slight reduction in average prices as compared with 1910.¹

Two questions are dealt with in connection with butter prices: First, the relation between the price of raw material and the retail price of butter in periods of comparatively low and high prices, and second, the cost of distribution or the additions made to the price of butter as it passes from producer to consumer.

As the magnitude of the butter industry in the United States precludes a complete and comprehensive inquiry into the business of that industry in the entire country, data were obtained only from representative creameries of various types and from representative butter dealers in several of the principal markets. The butter-making sections selected for the inquiry were northern Illinois, southern Wisconsin, eastern and northern Iowa, all in the famous

¹ See Table VI, page 58.

Elgin district, and northwestern Missouri. Prices and margins of wholesalers and of retailers were obtained in Chicago, Cincinnati, Cleveland, Philadelphia, and Pittsburgh—markets in which products from various sections of the United States must compete, and which also rule or influence the smaller or remote markets. No attempt is made to present details as to the cost of production of the raw material or to show the various elements entering into the cost of manufacturing and distributing the finished product. The figures are believed to be fairly representative of butter prices and margins in general.

Data were obtained at first hand from the books of the establishments. Owners, managers, and secretaries of the creameries and proprietors and managers of wholesale houses and retail stores dealing in butter willingly gave access to their records and cooperated in the effort to make the data accurate and dependable. The general policy of business concerns, however, to discard account books and other records when they become out of date and are considered no longer valuable or necessary made the task of locating records of prices for the earlier months and years difficult and slow. Especially was this true in retail establishments, in a large majority of which, as soon as bills are paid, the sales records are destroyed to prevent their accumulation and the occupation of space needed for the storage of goods and the transaction of business.

In several instances where prices were obtained for the raw material furnished by the farmer to the creamery, the product of the identical raw material was followed through factory, wholesale house, and retail establishment to the consumer, showing the prices at each step.

SUMMARY.

The farmer in selling his milk or cream to a creamery generally is paid a price per pound for the butter fat delivered, the amount of butter fat being determined by weighing the milk or cream, testing a sample of it to ascertain the per cent of butter fat, and then computing the amount of butter fat in the quantity delivered. The other elements of the milk or cream are seldom considered in the sale.

In most cases it was not possible to trace specific quantities of butter from the farmers who furnished the raw material through various handlings to the consumers, and it was impracticable to follow wholesale quantities to all the various retailers. On the other hand, it was possible, as shown in Table IV, to trace prices and margins on various lots of tub butter sold to retailers in Chicago, Cincinnati, and Philadelphia, and on print butter sold to retailers in Cincinnati, Cleveland, and Pittsburgh back to creameries included in this report. From these details, which covered prices but not quantities sold,

average prices for tub and for print butter, according as sales of either were reported, were computed, by cities. The prices and margins from creamery (f. o. b. shipping station) to retailer shown in the table which follows are simple averages for tub and print butter combined, based on the averages for the various cities, as presented in Table V.

In the absence of details as to creamery margins for the various lots of butter just considered, average creamery margins were computed from figures which were available for 10 representative creameries (Table III). Assuming that these averages represent average creamery margins for the lots sold to retailers and deducting them from the average creamery prices f. o. b. shipping station for those lots, as ascertained by the method described above, approximate figures were obtained showing the average prices paid the farmers for butter fat in each pound of butter delivered at the creamery.

The following table brings together for each period studied the averages obtained according to the methods just explained, presenting in sequence the prices and margins to the various handlers from producer to consumer. The total margins between prices paid to farmers and those paid by consumers are shown in the last line of the table and are believed fairly to represent average conditions.

AVERAGE BUTTER PRICES AND MARGINS FROM FARMER TO CONSUMER, JUNE AND DECEMBER, 1904, 1910, AND 1911.

[The averages from creamery, f. o. b. shipping station, to consumer are derived from Table V; the average creamery margins are derived from Table III; the average price paid to farmers for butter fat in 1 pound of butter is found by subtracting the average creamery margin per pound from the average creamery price per pound.]

Item.	1904		1910		1911	
	June.	December.	June.	December.	June.	December.
Price paid to farmers for butter fat in 1 pound of butter, delivered at creamery	\$0. 1518	\$0. 2326	\$0. 2562	\$0. 2733	\$0. 2086	\$0. 3297
Creamery margin per pound	.0235	.0338	.0204	.0267	.0218	.0289
Creamery price per pound, f. o. b. shipping station	.1753	.2664	.2766	.3000	.2304	.3586
Freight per pound	.0073	.0073	.0073	.0073	.0073	.0073
Cartage per pound	1.0003	1.0003	1.0003	1.0003	1.0003	1.0003
Gross price per pound paid by receiver or wholesaler	.1828	.2740	.2842	.3075	.2380	.3662
Receiver's or wholesaler's margin per pound	.0130	.0155	.0159	.0163	.0157	.0187
Price per pound paid by retailer	.1958	.2895	.3001	.3238	.2537	.3849
Retailer's margin per pound	.0470	.0390	.0441	.0508	.0445	.0492
Price per pound paid by consumer	.2428	.3285	.3442	.3746	.2982	.4341
Total margin between price per pound for butter paid by consumer and price for butter fat therein paid to farmer at creamery	.0910	.0959	.0880	.1013	.0896	.1044

¹ Not including cartage in two cities, not separately reported. Considering only the three cities in which this item was separately reported the average per 100 pounds was 4½ cents in June, 1904, and 4¾ cents in the other periods.

In June, 1904, when the average retail price was 24.28 cents per pound, the margin consumed in manufacturing and packing the butter and distributing it to consumers was 9.10 cents per pound,

leaving the producers 15.18 cents for the raw material. In December of that year, a season when the output was curtailed and the operations of gathering, manufacturing, and distributing were hindered by unfavorable weather conditions, the average retail price was 32.85 cents per pound and the aggregate margin for manufacturing and distributing increased to 9.59 cents, leaving the producers 23.26 cents for the raw material or butter fat. Of this, however, owing to the adverse conditions of the season, they had for market, as may be computed from the figures shown in Table II (pp. 40 and 41) only 45 per cent of the amount they sold in the summer season.

In June, 1910, the price paid by consumers was slightly higher than it was in December, 1904. The high quality of creamery butter had given it wide popularity so that the demand had materially increased and the price maintained an average of 34.42 cents per pound. The total charge for manufacturing, marketing, and distributing was 8.80 cents per pound, which enabled farmers to receive for the raw material 25.62 cents of the 34.42 cents paid by consumers for the manufactured product in the retail markets. In December, 1910, following the usual trend for the winter season, the average retail price reached 37.46 cents per pound. Farmers received 27.33 cents for the fat in one pound of butter, which made a margin of 10.13 cents per pound for the services performed by manufacturers, carriers, and dealers between the producer and the consumer. The increase in the margin as compared with June may be accounted for, in some measure at least, by the fact that, while the expenses of operation remained the same, there was a decrease of about 50 per cent in output in December.

In June, 1911, the average retail price was 29.82 cents per pound, the lowest for any June since 1906. The farmer's price was 20.86 cents, making the aggregate absorbed by maker, carriers, and dealers, 8.96 cents.

In December, 1911, there was more than the ordinary seasonal shrinkage of output. This was due to the unusual severity of the weather during the latter part of the month. Transportation was impeded by storms and snow, the supply of fresh butter in the markets became depleted, and the average price charged consumers reached 43.41 cents per pound. The rise in retail price gave some advantage to the receivers or wholesalers who had butter in stock and they were able to sell their goods at a higher figure, which increased their margin to 1.87 cents per pound, the highest for any month considered in this report. The price received by the farmers was 32.97 cents per pound for the butter produced from material furnished by them, making a total difference of 10.44 cents per pound between consumer's price and farmer's price.

Whether the increase or decrease in price to the farmer means in reality a greater or less profit for him has not been determined and

could be ascertained only by an intricate study of the cost of production of the cream or milk, a subject not considered in this report.

While there were marked variations in the average prices paid to the farmer for butter fat and in those paid by the consumer for butter between June and December the changes in the margins between producers' and consumers' prices were comparatively small. Thus, in December as compared with June there was an increase in the average price paid the farmer for the butter fat in 1 pound of butter of 8.08 cents in 1904, 1.71 cents in 1910, and 12.11 cents in 1911; in the average price per pound paid by the consumer, December showed an increase over June of 8.57 cents in 1904, 3.04 cents in 1910, and 13.59 cents in 1911. The December margin between the prices paid to producer and by consumer exceeded that of June by 0.49 cent in 1904, 1.33 cents in 1910, and 1.48 cents in 1911. Part of the increase in margin went to the creamery, somewhat less to the retailer, and a very small part to the receiver or wholesaler. In no case was the increase in margin very great. The railroad and the teamster received the same rate for hauling at each of the periods studied.

Margin is not used in this report to indicate profit, but is the difference between the cost price and the selling price. A retail dealer may buy a tub of butter at 30 cents a pound and sell it at 35 cents. The margin is 5 cents a pound. If the tub was billed to him at 60 pounds net, he paid \$18 for it, but in giving even or down weight for each parcel, permitting a little to waste by sticking to the tub, sustaining a slight shrinkage from evaporation, or having a tub a trifle heavier than the tare deducted, he may sell only 58 pounds at 35 cents, receiving \$20.30 for his sales. This is 70 cents less than he would have received if his sales had amounted to 60 pounds at 5 cents per pound margin, and the actual profit on the tub is \$2.30 instead of \$3. In this case the 5-cent margin represents a profit of only $3\frac{1}{2}$ cents per pound.

In the data here considered, the only agent between the retailer and the shipper is the wholesaler—in the butter trade generally termed the receiver. Some butter goes through the hands of two or more wholesalers or jobbers. These additional handlers share in the receivers' and retailers' margins, as competition is so keen that margins are reduced to the narrowest range which careful and aggressive business methods can make, consistent with the burdens and risks of the industry. If the butter is put into cold storage, the operators take the chance of making larger profits, smaller profits, or no profits, or of suffering losses, depending on future markets which are affected by many conditions.

It is the custom in the butter trade to refer to margins in terms of cents per pound rather than in percentages of capital invested or of prevailing prices. For instance, in June, 1904, with a retail price of 24.28 cents the retailer's margin was 4.70 cents per pound; in Decem-

ber, 1911, with a retail price of 43.41 cents, or nearly twice that of June, 1904, the retailer's margin was 4.92 cents; the total margin between the price received by farmers and that paid by consumers was 9.10 cents per pound in June, 1904, and 10.44 cents in December, 1911.

If the percentages that the various margins were of retail prices are considered it is found that for the two periods in the earlier year (1904) when prices were low the per cent of margin was much higher in nearly every case than for the corresponding periods in the later years (1910 and 1911) when the prices were high. This is brought out in the following table, showing the per cent of the retail price made by each handler of butter from the producer to the consumer in the different periods studied:

PER CENT OF ITEMS COMPOSING THE AVERAGE RETAIL PRICES OF BUTTER IN JUNE AND DECEMBER, 1904, 1910, AND 1911.

Item.	1904		1910		1911	
	June.	December.	June.	December.	June.	December.
Price received by farmer	62.5	70.8	74.5	72.9	70.0	75.9
Creamery margin	9.7	10.3	5.9	7.1	7.3	6.7
Freight charges	3.0	2.2	2.1	1.9	2.4	1.7
Cartage charges .....	.1	.1	.1	.1	.1	.1
Wholesale receiver's margin	5.3	4.7	4.6	4.4	5.3	4.3
Retail dealer's margin	19.4	11.9	12.8	13.6	14.9	11.3
Price paid by consumer	100.0	100.0	100.0	100.0	100.0	100.0
Total margin between consumer and farmer	37.5	29.2	25.5	27.1	30.0	24.1

Averages of the items for the three Junes and for the three Decembers afford another basis of comparison between the summer season when low prices prevail and the winter season when prices are generally much higher. Such averages are shown in the following table, together with the per cent of increase in December over June for each item:

AVERAGE BUTTER PRICES AND MARGINS FROM FARMER TO CONSUMER FOR THE 3 JUNES AND THE 3 DECEMBERS, 1904, 1910, AND 1911, AND PER CENT OF INCREASE IN DECEMBER OVER JUNE.

Item.	Average for 1904, 1910, and 1911.		Per cent of increase in December over June.
	June.	December.	
Price received by farmer	\$0.2056	\$0.2785	35.4
Creamery margin .....	.0219	.0298	36.1
Creamery price, f. o. b. shipping station .....	.2275	.3083	35.5
Freight charges .....	.0073	.0073	.....
Cartage charges	¹ .0003	¹ .0003	.....
Price paid by wholesale receivers .....	.2350	.3159	34.4
Wholesale receiver's margin .....	.0149	.0169	13.4
Prices paid by retailers .....	.2499	.3328	33.2
Retailer's margin .....	.0452	.0463	2.4
Price paid by consumer .....	.2951	.3791	28.5
Total margin between consumer and farmer .....	.0895	.1006	12.5

¹ Not including cartage in 2 cities, not separately reported.

The following table was made by selecting again for comparison the averages for the three Junes and for the three Decembers in the chosen years, and placing in parallel columns the amounts and percentages of the items composing the average retail prices of butter.

AMOUNT AND PER CENT OF ITEMS COMPOSING THE AVERAGE RETAIL PRICES OF BUTTER IN THE 3 JUNES AND 3 DECEMBERS, 1904, 1910, AND 1911, COMBINED.

Item.	Average for 1904, 1910, and 1911.			
	June.		December.	
	Amount.	Per cent.	Amount.	Per cent.
Price received by farmer	\$0. 2056	69. 7	\$0. 2785	73. 5
Creamery margin .....	.0219	7. 4	.0298	7. 9
Freight charges .....	.0073	2. 5	.0073	1. 9
Cartage charges	¹ . 0003	1. 1	¹ . 0003	1. 1
Wholesale receiver's margin .....	.0149	5. 0	.0169	4. 4
Retailer's margin .....	.0452	15. 3	.0463	12. 2
Price paid by consumer .....	.2951	100. 0	.3791	100. 0
Total margin between consumer and farmer.....	.0895	30. 3	.1006	26. 5

¹ Not including cartage in 2 cities, not separately reported.

The table shows that for the three years combined the average price paid by the consumer in December was 37.91 cents, or 8.40 cents more than the average (29.51 cents) paid in June. Average margins for each handling were lower in June than in December, but represented a higher proportion of the retail prices in June than in December in every case except that of the creamery margin, which in June was 7.4 per cent of the price paid by the consumer, as compared with 7.9 per cent in December. The average price received by the farmer for the butter fat in 1 pound of butter was not only less in June than in December, but also represented a smaller percentage of the price paid by the consumer.

BUTTER CONSTITUENTS.

The amount of butter obtainable from 100 pounds of whole milk averages about 4.4 pounds. The primary constituent of butter is butter fat, and this butter fat is the element in the cream or milk sold by the farmer that is considered in the price he receives, though in some cases the skim milk and the buttermilk are returned to him. Butter fat is the pure oil contained in milk, cream, or butter. When a creamery buys milk or cream on the basis of butter fat the percentage of fat is ascertained by testing a sample, usually by the Babcock method, which may be described as follows:

A measured sample of the milk or cream to be tested is placed in a test bottle, which is a small bottle having for a neck a tube about 4 or 5 inches long, with a graduated scale. There is then introduced a measured quantity of sulphuric acid of standard strength and some

warm water to curdle the contents. A number of bottles containing samples are placed in a centrifugal machine, which is revolved at a high rate of speed. Thus, by chemical action and centrifugal force, the fat is separated from the water and other substances of the milk or cream. When the bottles are removed from the machine the percentage of fat standing at the top may be easily read on the scale.

By simply applying the percentage of fat thus ascertained to the number of pounds of milk or cream delivered it is possible to calculate the number of pounds of butter fat contained therein. To obtain the most equitable results the test should be made for each lot of cream or milk, but in practice it often happens that tests are made only once or twice a week, or once in two weeks for regular patrons, intervening deliveries being computed either exactly or approximately on a preceding test or on an average of several preceding tests.

According to a definition established under authority of Congress by the Secretary of Agriculture¹ butter may contain as little as 82.5 per cent of fat, and a regulation made by the Commissioner of Internal Revenue under the act of May 9, 1902, relating to adulterated butter, and approved by the Secretary of the Treasury, makes it subject to classification as adulterated butter if it contains 16 per cent or more of water.

Bulletin No. 149 of the Bureau of Animal Industry, United States Department of Agriculture, transmitted March 27, 1912, in a comprehensive study of the subject, shows in detail the normal composition of American creamery butter, and records the complete analytical details of 695 general samples of creamery butter obtained from 488 creameries in 14 States, and of 34 samples of creamery butter made and packed for the Navy Department under the supervision of the Dairy Division, under contract to conform to specifications prepared by the division.

The average composition follows:

AVERAGE COMPOSITION OF 695 GENERAL SAMPLES OF BUTTER AND 34 SAMPLES OF NAVY BUTTER.

[From Bulletin No. 149 of the Bureau of Animal Industry, United States Department of Agriculture.]

Number and kind of sample.	Fat.	Water.	Salt.	Curd.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
695 general samples.....	82.41	13.90	2.51	1.18
34 samples of Navy butter.....	84.13	12.21	2.72	.94

Butter (except small quantities of "unsalted" for special trade) is washed with brine so that the small quantity of salt thus introduced shall act as a preservative and develop the flavor.

Butter experts do not agree as to the percentage of water desirable in the best butter. Some contend that 14 or 16 per cent gives it a

¹ See Circular No. 19, issued June 26, 1906, by the United States Department of Agriculture.

satisfactory spreading quality, while others hold that the moisture should be reduced to 10 or 12 per cent to give it firmness of texture, better keeping quality, and increased nutritive value. The curd is composed mostly of casein. This is the constituent which usually causes rancidity, and butter which has not been properly washed and carefully worked to remove the buttermilk may retain a considerable proportion of casein, and as a result have only inferior keeping qualities. On the other hand, butter may be washed and worked so much as to deprive it of its delicacy of flavor. Upon the skill of the butter maker in correctly apportioning the various constituents of butter depends in large measure the value of a creamery's output.

OVERRUN.

As has been shown, the milk or cream furnished by the farmer to the creamery contains a certain proportion of butter fat, which is ascertained by test. This fat is contained in the cream, which is separated from the milk before churning. While theoretically butter should consist of little else than fat, in practice this degree of perfection is never attained. In addition to the butter fat the butter obtained from the cream by churning retains a certain amount of water, casein or curd, milk sugar, and other substances, and a small percentage of salt is added. The amount of these constituents over and above the butter fat in the butter is called the overrun. Stated in another way, the overrun is the difference between the weight of pure butter fat in the cream, as shown by test, and the weight of the butter actually produced therefrom. The per cent of overrun, according to commercial usage, is the per cent which the weight of the constituents other than butter fat is of the weight of the fat in a given quantity of butter.

To aid in understanding this subject the following concrete example is given: A farmer delivers to a creamery 1,000 pounds of cream having an average test of 31 per cent of fat. The creamery thus gets 1,000 pounds of material, 310 pounds of which is butter fat. From this material 365 pounds of commercial butter is produced by churning. The difference between this amount and the 310 pounds of butter fat, namely, 55 pounds, constitutes the overrun and consists of the water, casein or curd, milk sugar, salt, and other substances remaining with the butter fat after the butter has been salted and drained. In other words, these figures show that in every 100 pounds of the butter produced there were about 85 pounds of pure fat and 15 pounds of water and other substances. But while the amount of overrun was thus 15 parts in every 100 parts of the finished butter, this must not be confused with the percentage of overrun, which, as has been indicated, is the per cent that the 15 pounds of constituents other than butter fat is of the 85 pounds of fat, or 17.6 per cent.

This illustration is within the range of actual experience in butter making, as the percentage of overrun varies from 7 to 25 per cent, or even higher, and probably has fallen below 7 per cent in some creameries.

In the earlier years of the creameries little or no attention was given to overrun. After churning, the butter was drained in the churn until the buttermilk stopped running from the vent, or until the butter maker thought it sufficiently drained. After rinsing with brine to make salted butter, or with clear water for the unsalted product, it was drained again in like manner. The butter was then worked to a satisfactory "body," or "texture," or degree of dryness, and packed in tubs for market. Sometimes it may have contained as low as 7 per cent, and again it may have carried as high as 25 per cent of water.

As butter making became a commercial enterprise it became apparent that a given amount of butter fat could be made to produce an increased weight of butter by adding more water, and if there were no appreciable difference in the appearance, the flavor, or the body of such butter it could be sold for the same price as butter containing less water, thus increasing the profit.

Owners and managers of creameries and farmers urged butter makers to increase the overrun—that is, the amount of water. Dairy schools made experiments and investigations to devise the best methods by which it could be accomplished and trained butter makers so that they could make almost any overrun desired, and dairy periodicals gave wide currency to discussions of the question.

In the Eighteenth Annual Report of the State Dairy Commissioner of Iowa (1904), page 41, the following statement is made:

Reports to this office show that the overrun varies as much as 10 per cent from one month to another in some of our creameries. The difference in prices paid, which results from this variation in the overrun will certainly create dissatisfaction among the patrons. If the overrun can be made about the same every day the prices will be more uniform and satisfactory.

The same commissioner, in his Nineteenth Annual Report (1905), page 12, on the subject of overrun, has the following:

Under present conditions of sharp and varied competition among creameries it is necessary to the successful operation of a creamery to make the most possible butter out of a given quantity of fat—to get the largest possible legitimate overrun. In the larger creameries a good deal of attention is given to this matter because it is closely connected with the question of profits. In the small creameries comparatively little attention is given to the matter except in a few instances. Our creameries average about 120,000 pounds of butter per year. The usual overrun used to be stated universally as one-sixth, or about 16 per cent. When the month's work and payment were figured up and the overrun of butter over butter fat was com-

puted, any deviation from a 16 per cent overrun, whether it was more or less than this amount, was invariably charged to inaccuracy in testing. While the fact was recognized that the amount of water and salt and casein in butter were variable quantities, it was scarcely suspected that skill in butter making could change any of these except, of course, the salt which might be added in almost any amount. The dairy department at Ames [Iowa State College], by a series of experiments and investigations showed that not only could a skillful butter maker make his overrun almost anything he desired, but that certain butter makers in successful creameries were already doing it; that a 16 per cent overrun could easily and legitimately be increased to 20 per cent or even 25 per cent overrun. That is, the skillful butter maker can make butter having in it only 80 per cent of butter fat just as easily and as certainly as he can make butter containing 86 per cent of butter fat. In the one case he would have a 25 per cent overrun and in the other he would have the usual overrun of about 16 per cent. And the butter containing but 80 per cent of butter fat serves the purpose of the consumer, meets all the requirements of any market for flavor or body or qualities of any kind, violates no law, either State or National, and traverses no regulations of any kind or character. And yet, with all these effects so perfectly understood, so often put in print, and so thoroughly discussed, very few butter makers know what their overrun is except from the books of the creamery at the end of the month, and very few creamery managers seem to care whether their butter maker makes a proper overrun or not; he gets no more nor no less wages on account of his skill or lack of it in this particular. In a few cases the assistant dairy commissioners have found butter makers claiming that they were getting habitually 20 or 22 per cent overrun when tests of their butter showed but 12 or 14 per cent.

The average creamery [in Iowa] makes about 120,000 pounds of butter a year, not counting in this the centralizing plants. At the average price for last year [1905] this butter sells for nearly \$30,000. A difference of only 5 per cent in the overrun would amount to more than \$110 a month for this average creamery, nearly twice the butter maker's salary. If his butter was so poor in quality as to lose this sum he would be promptly and properly discharged, but there is many a creamery in this State whose income could be easily increased in this particular an amount equal to that here mentioned by a proper increase in the overrun. The larger central plants, with which the smaller plants compete, do get this large overrun, and competition makes it necessary that the smaller ones who meet this competition shall get as good an overrun as their larger competitors or go out of business because of lack of ability to meet the competition. A difference of only 5 per cent in the overrun makes, at last year's prices, a cent and a quarter on the pound of butter fat, a difference of that much in the price the creamery can pay the farmer for his butter fat—three-quarters of a million of dollars for the creamery patrons of the State.

* * * * * * *

The question of overrun is of the greatest importance from the standpoint of values and should receive more attention at the hands of butter makers and creamery operators.

Eagerness to enlarge the output of butter by increasing the overrun became general and led to the inclusion of abnormal quantities of water. A number of States have enacted legislation defining butter and specifying the minimum percentage of fat it must contain or the maximum amount of water it may contain. Some States permit a product containing as low as 80 per cent of fat, and some have established the standard fixed under authority of Congress, by the Secretary of Agriculture, requiring 82.5 per cent of fat in butter.¹

The centralizers and other large establishments were first to study the subject of overrun and thus earlier than the other and smaller establishments they learned how to obtain a large and regular amount of overrun. Later the subject was given more general study and the smaller factories reached a higher and more uniform mark of overrun. This is illustrated by the following table which shows, first, the percentage of overrun in each period covered by this investigation for the large centralizer, appearing as creamery No. 16 in Table I, and second, the average percentage of overrun for 10 smaller creameries for which the figures are reported in that table. It should be borne in mind that these figures are based on data taken from the books of the establishments and are not the results of actual tests of the butter.

PER CENT OF OVERRUN IN A LARGE CENTRALIZER AND AVERAGE PER CENT OF OVERRUN IN 10 SMALLER CREAMERIES, JUNE AND DECEMBER, 1904, 1910, AND 1911.

Creamery.	Per cent of overrun.					
	1904		1910		1911	
	June.	December.	June.	December.	June.	December.
Creamery No. 16 (centralizer).....	21.8	22.5	24.4	23.8	24.4	23.2
Average for 10 smaller creameries.....	12.6	13.5	20.9	21.8	20.4	20.1

As shown in the above table the large centralizer had a high percentage of overrun even as far back as 1904, while the smaller creameries had a comparatively low percentage of overrun in 1904 but increased it materially in later years.

CREAMERIES.

The creamery is the medium between the farmer and the market. It benefits the average farmer by bringing him better returns for the raw material than the homemade product commands, at the same

¹ According to a summary of legal standards for dairy products recently prepared by the Bureau of Animal Industry of the United States Department of Agriculture (Circular 218—revised to Nov. 1, 1913) the minimum percentage of fat required in butter by the States which have enacted legislation on the subject is as follows: Eighty per cent in California, Colorado, Iowa, Kansas, New Hampshire, Ohio, South Dakota, and Utah; 81.5 per cent in Oklahoma; 82.5 per cent in Florida, Georgia, Idaho, Illinois, Indiana, Kentucky, Missouri, Montana, Nevada, North Carolina, Virginia, Wisconsin, and Wyoming; and 83 per cent in the District of Columbia.

time relieving him of the work of making the butter and the necessity of seeking a market. To the consumer it provides butter, for the table, of a better and more uniform quality than the farm-made article.

An interesting account of the development of the dairy industry in the central West is given in the biennial report of the dairy and food commissioner of Wisconsin for the period ending June 30, 1910, pages 9 and 10, as follows:

It is well-nigh impossible to picture clearly to the imagination of the present generation the condition of the dairy industry of Wisconsin at its beginning. The cow was the ordinary native; the dairy barn was a straw stack; the dairy house, creamery, or cheese factory was the farm kitchen, cellar, or well; the butter maker or cheese maker was the pioneer farmer's wife; the market was the local grocery store, and that often many miles away and glutted; the means of transportation was by foot, or perchance by ox teams; price, 5 to 10 cents a pound for butter, pay taken in brown sugar at 25 cents a pound, and other groceries at corresponding prices. The cows freshened in March or April, ran at large and were dried off in November and December. There was no winter dairying. From my own personal knowledge and experience in Wisconsin I am prepared to assert that the foregoing picture is not overdrawn.

Contrast present conditions in Wisconsin with those at the beginning of the industry! Where there were at that time no cheese factories, no creameries, no skimming stations, no condenseries, there are now (1910) known to be in Wisconsin 1,928 cheese factories, 1,005 creameries, 88 skimming stations, and 19 condenseries. The manufacture of butter has been transferred from the farm to the modern Wisconsin creamery. The manufacture of cheese has been transferred from the pioneer farm to the modern Wisconsin cheese factory. The old straw stack as a means of protecting the cow from the cold and the storms of winter has been replaced by the modern dairy barn, which more and more is being well lighted and ventilated, and in which the old rigid stanchion so promotive of filth and discomfort of the cow is being replaced by the modern stall, promotive of cleanliness and comfort. The old-time native, scrub, no-purpose cow, poor and plastered on both flanks and hips with filth, with hair protruding hedgehog fashion, back filled with grubs—a thing repulsive to behold—is being superseded by clean, well-kept, high-grade, or pure-bred, special-purpose cows of the dairy breeds, not only profitable to the owner, but beautiful and attractive to every beholder.

The grocery or general store as a market for butter and cheese has been replaced by the great markets of Elgin, Chicago, New York, and other great cities. The cellar as a place of storage has been replaced by the modern refrigerator plant. Instead of the footman or the ox team bearing with slow pace the farm butter to the grocery store market, we now have as means of transportation for dairy products the modern railway with its refrigerator cars. The milking machine is fast superseding the tedious process of hand milking. Instead of the open shallow pan for raising cream by gravity, we have the

modern cream separator; instead of the old dasher churn, we have the modern combined churn and butter worker run by steam power. Instead of the method of empiricism for manufacturing dairy products on the farm, we have skillful butter makers and cheese makers, manufacturing butter and cheese in accordance with scientific principles in the creameries and cheese factories, which are equipped with all modern appliances for the attainment of perfection in the manufacture of cheese and creamery butter. * * * The dairy statistics (of Wisconsin) for the year 1909, showing an aggregate revenue of \$79,000,000, indicate the present stupendous proportions of the industry and stagger the imagination.

The major part of the butter handled in large markets is made in creameries. These vary in size and capacity and differ in type, and are known as locals or centralizers according to the territory covered. Locals draw supplies of cream or milk or both from near-by farms, usually within hauling distance by teams. Centralizers draw material from a large area, and receive a large portion of their material by railroad from localities as far as 150 miles or more distant. The material received by centralizers is practically all cream rather than milk, and transportation charges are prepaid by the shipper. In the plan of ownership and operation, creameries may be either cooperative or individual.

Cooperative creameries are owned jointly by the farmers of the surrounding community with sometimes a few shares held by local merchants or others. The farmers furnish the raw material in the form of milk or cream. A secretary and manager has charge of the affairs of the association, and there is a butter maker and such other help as is needed. The secretary deals with the farmers, keeps the plant in running order, disposes of the product, collects the moneys due the association, pays the expenses of operation, and divides the balance of the proceeds among the farmers who supply the raw material.

The output of butter is shipped to market weekly or oftener. Usually a draft for 60 per cent or 75 per cent of the value of the consignment at the current market price is sent with the bill of lading through a bank. Settlements are made on the basis of the market price the day the butter arrives at destination, and remittances for balances are made promptly. A record is kept of the number of pounds of butter fat furnished by each farmer. From the total amount of money received for the output for a month the expenses of maintaining and operating the plant and a sum for a contingent fund are deducted and the balance is paid to the farmers. This balance is divided by the number of pounds of butter fat used, and the result determines the price per pound to be paid. The final returns from sales are usually received by the 10th or 15th of the month, and patrons of cooperative creameries receive their pay any

time from the 12th to the 20th of the month for the butter fat furnished during the preceding month.

An individual creamery is one owned by an individual, a partnership, or a company. It may be conducted on the plan of buying the raw material (milk and cream) outright and making it into butter, the increase in value going as profit to the owner; or the raw material may be made into butter and sold for the farmers at a specific charge or toll for the service performed by the creamery.

Farmers furnishing milk and cream to individual creameries are paid weekly, fortnightly, semimonthly, or monthly. When payments are made weekly the accounts are usually computed on the price of butter on the next Monday after the material was furnished. Checks are forwarded Tuesday, Wednesday, or Thursday, or until all returns are made. When payments are made fortnightly, semimonthly, or monthly the accounts are usually computed on the average price of butter during the period covered by the deliveries of the material, and in each case checks are sent within three or four days after the termination of the period. For butter fat delivered at the creamery the full contract or agreement price is paid, while for that gathered by haulers a charge is deducted for hauling. This charge varies. Sometimes it is as high as $2\frac{1}{2}$ cents a pound, and sometimes as low as a fraction of 1 cent a pound for butter fat. In some cases the basis is the price paid at the farm. Under this practice farmers delivering at the factory receive a higher price than those from whom haulers gather the cream.

Under a joint partnership between an owner and an operator the operator may conduct the business on one of the plans described above and divide the net profits of the business with the owner according to the terms of their agreement.

Centralizers draw from a wide territory and naturally come into competition with many local factories, both cooperative and individual. To get the material, prices offered must be as high and terms as attractive as those of competitors. So the centralizer prices for butter fat, as well as the local creamery prices, are based on the market price of butter and are fixed to meet competition. Centralizers get cream from many places remote from local creameries, where competition may be less active. Centralizers, however, are competing more and more with each other as the number of such plants increases. Their prices generally hold to a uniform level for a week and settlements are made at the prices on the day the cream arrives at the creamery. Checks are sent to farmers the next day after delivery of the cream in the case of establishments which pay daily, and early in the week for the deliveries of the previous week in the case of establishments which pay weekly.

In cooperative creameries the price paid for raw material depends upon the net returns from the sale of the butter. In individual and stock company creameries the price is generally fixed by agreement or contract to pay for butter fat the price of butter currently quoted on a selected market, such as Elgin or New York, or an agreed number of points above or below the current butter quotations on the market selected. In creameries making a specific charge per pound for making butter the price received by the farmer is on the basis of the number of pounds of butter made from the material furnished. The whole body of milk or cream is taken and pay given for the number of pounds of fat contained.

The farmer generally sells his products to the buyers who pay the highest prices. Competing with local creameries for milk and cream are not only centralizer creameries but also milk condenseries, and, in sections which have direct and prompt shipping connections with large cities, milk dealers. Nearly everywhere there is competition in buying milk from producers and in many localities competition is so active that prices are maintained at a high level.

In some sections the price paid farmers for milk by the milk condenseries and milk dealers at times has reached \$1.90 to \$2 per 100 pounds. The average amount of butter obtainable from 100 pounds of whole milk is, as previously stated, approximately 4.4 pounds. At \$1.90 per hundred for milk the cost of the butter content is approximately 43.18 cents per pound, and at \$2 per hundred for milk the cost of the butter content is about 45.45 cents per pound. If to these prices be added the cost of manufacturing and distributing, which is approximately 10 cents per pound, the butter would reach the consumer at 53 cents to 56 cents per pound—a price practically prohibitive to the average household. The demand for butter decreases rapidly when the retail price rises to 40 cents a pound or higher and consumers resort to the use of substitutes. Creameries located in districts where the price of the raw material rises so high that profit on their business means a retail price of from 45 to 55 cents a pound for butter must go out of business.

COLLECTION OF CREAM AND MILK.

Prices for material usually are paid on the basis of material delivered at the creamery. To some creameries the farmers haul their milk or cream. Once, twice, or three times a week the farmer brings in milk or cream, a sample is tested, the content of fat is computed, and the farmer is credited with the number of pounds brought in and is allowed to take a certain portion of skim milk or buttermilk.

Other creameries employ haulers to gather the material. Routes are assigned to these haulers, who go over them two or three times a week gathering milk or cream from farm to farm. Each farmer's material is weighed and a sample is taken in a small bottle. Upon arrival at the creamery the samples are tested, each farmer's butter fat is computed, and a record is made of the amount of butter fat in the cream or milk which he furnishes. Patrons of these creameries sometimes arrange to have skim milk and buttermilk returned to the farm, sometimes the creamery disposes of these by-products on its own account, and sometimes they are allowed to run to waste. Centralizers do not return the buttermilk to shippers of cream, but sell or utilize it in some way, or throw it away.

In the beginning of the creamery industry cream was measured by the "inch." Milk was poured into cans of a standard diameter and allowed to remain long enough for the cream to separate by gravity. The cans had a slit in the side covered with glass, a sort of "window," through which could be seen the thickness of the layer of cream. This was measured on a graduated scale along the side of the glass-covered slit and paid for by the inch. In some cases milk was poured into shallow pans and put aside for 24 or 36 hours, long enough for the cream to rise to the top. The cream was then skimmed with a hand skimmer and put into the standard can to be measured and paid for at so much per inch of depth. In the Elgin district, for 10 years or more, a large part of the milk and cream used for making butter has been sold on the basis of butter fat contained, but in some places whole milk is sold by the gallon or by the 100 pounds.

Many milk-producing farms are now equipped with modern hand centrifugal cream separators, by which the cream is separated from the milk more satisfactorily than by the old method of gravity and the skimming ladle. On such farms the cream is separated from the milk and is hauled to the creamery or railroad station by the farmer or prepared for delivery to a hauler who is employed by the creamery or by the patrons on the cream route to gather the cream from the farmers. Other farmers haul or send whole milk to the creamery, where it is separated by power separators, and usually the skim milk is returned to the farmers, who feed it to hogs and calves. The usual custom is to pay the farmer for the number of pounds of butter fat furnished, but in some instances he receives pay on the basis of the proportionate number of pounds of butter made from the material supplied. In the creameries where milk is paid for by the gallon or by the 100 pounds the farmer may or may not get back the skim milk, depending on his agreement with the creamery.

SEASONAL VARIATION IN PRODUCTION, AND EFFECT OF COLD STORAGE.

The average output of butter for a given territory for the winter months of December, January, and February is usually much lower than the average output of the same territory for the months of May, June, and July. The other months show a gradual movement from the low point of production to the high point, or from the high to the low point, as the case may be. Nearly all creamery butter goes into the channels of trade through the agency of wholesale dealers or distributors. Dealers who obtain the product from the creameries are generally known as receivers. Many of them have seasonal or annual contracts or agreements to take the entire output of certain creameries on a sliding scale of prices based on the quotations of a selected standard market, such as Elgin or New York. They strive to engage the output of as many high-grade creameries as possible and keen competition exists between them. They undertake to get in touch with enough buyers, largely retail dealers, to find a steady outlet for all their receipts, and here also there is a wide-awake rivalry in trade.

Care in handling butter is necessary to prevent its rapid and serious deterioration. The quality and quantity of butter are affected by the quality and quantity of raw material produced. The raw material in turn depends on weather conditions, the crops, and the prices of feed. The care exercised in handling and in transportation affects the raw material as well as the manufactured product. Refrigerator cars carry butter from the creameries to the markets in all parts of the country, where it is delivered to the consumer in practically as good condition as the product sold to the trade in the districts where the creameries are located.

In the summer months when production is large and butter plentiful, considerable quantities are put in cold storage, to be placed on the market in winter, when the supply of fresh goods is small and prices are usually higher. This helps to absorb the large output in the season when production exceeds current consumption and to maintain the prices at a level to stimulate production. In the season when production falls short of current consumption the storage warehouse supplies part of the goods to meet the demands.

Butter manufacturers, wholesalers, jobbers, and speculators store butter to hold it for better prices at some later date, and retailers handle storage goods as well as fresh stock. While the prices shown in this report relate to fresh creamery butter, they are, of course, largely influenced by the volume of business passing through the refrigerator warehouses in the various trade and storage centers. The prices of fresh butter range a few cents higher than the prices of storage goods, and when the price of one class goes up or down the price of the other rises or falls accordingly.

Dealers have found that prices are not always higher when butter comes out of storage than when it goes in. A notable experience for dealers storing butter was recorded in the season of 1910 and 1911. In some of the western markets an unusual amount of butter was stored in June, July, and August, 1910, and large quantities of it were held until January, February, and March, 1911.

Below are given the quotations on the Elgin board for those months. These prices formed the basis on which settlements were largely made in the transactions illustrated.

ELGIN BOARD PRICES OF BUTTER FOR JUNE, JULY, AND AUGUST, 1910, AND FOR JANUARY, FEBRUARY, AND MARCH, 1911.

[Quotations from the Elgin Dairy Report.]

Date, storing season.	Price per pound.	Date, selling season.	Price per pound.
	<i>Cents</i>		<i>Cents.</i>
1910.		1911.	
June 6.....	27	Jan. 9.....	29
June 13.....	27	Jan. 16.....	27
June 20.....	27	Jan. 23.....	25
June 27.....	27½	Jan. 30.....	25
July 2.....	27½	Feb. 6.....	26
July 11.....	28	Feb. 13.....	26½
July 18.....	28	Feb. 20.....	26½
July 25.....	27	Feb. 27.....	25½
Aug. 1.....	28	Mar. 6.....	26
Aug. 8.....	29	Mar. 13.....	26
Aug. 15.....	29	Mar. 20.....	25
Aug. 22.....	30	Mar. 27.....	24
Aug. 29.....	30	Apr. 3.....	21
Average.....	28.08	Average.....	25.58

In the above table it is seen that during the storing season the quotations ranged from 27 cents a pound in June to 30 cents a pound in the latter part of August, 1910. In the selling season prices declined from 29 cents a pound during the week beginning January 9 to 21 cents a pound on April 3, 1911. This shows a maximum loss of 9 cents per pound in the published prices between the highest quotation for the storing season and the lowest price reached in the selling season. A simple average of the quotations for the storing season shows 28.08 cents per pound, and for the selling season 25.58 cents per pound, an average difference through a three months' selling season of 2.5 cents per pound against the dealer in storage goods. If to the cost price be added the carrying charges for brokerage, storage, insurance, cartage, and interest on money invested, it is easy to see how disastrous was the experience to the dealers storing butter in 1910-11, and this experience may happen in any season.

MOVEMENT OF WHOLESALE PRICES IN DIFFERENT MARKETS.

Butter markets in the various large cities keep in close relationship and almost invariably move up or down together. To illustrate the sympathetic movement of important markets, there is shown below a table of quotations of the wholesale prices of fancy

creamery butter in Elgin, New York, Chicago, Philadelphia, and Boston for each Monday in the months of January and February, 1910, a period covering a sudden and extensive drop in prices.

WHOLESALE PRICES OF FANCY CREAMERY BUTTER IN ELGIN, NEW YORK, CHICAGO, PHILADELPHIA, AND BOSTON FOR EACH MONDAY IN JANUARY AND FEBRUARY, 1910.

[Quotations from the Elgin Dairy Report.]

1910	Elgin.	New York.	Chicago.	Philadel- phia.	Boston.
Jan. 3.....	\$0.36	\$0.36	\$0.36	\$0.38	\$0.34½
Jan. 10.....	.36	.36	.34	.38	.34½
Jan. 17.....	.36	.36	.34	.36	.34½
Jan. 24.....	.30	.31	.31	.33	.33
Jan. 31.....	.31	.32	.30	.32	.32½
Feb. 7.....	.29	.30½	.28	.30½	.31
Feb. 14.....	.28	.28½	.26	.29	.30
Feb. 21.....	.30	.32	.30	.32	.31
Feb. 28.....	.31	.33	.30	.33	.31½

The first decline appeared in Chicago on Monday, January 10, the extent of it being 2 cents per pound. The next Monday, January 17, showed a 2-cent reduction in Philadelphia. Following that, the prices again broke during the week, and the next Monday, January 24, showed over the previous Monday a net decline per pound of 6 cents in Elgin, 5 cents in New York, 1½ cents in Boston, and an additional loss of 3 cents per pound in Chicago and in Philadelphia. A still further depreciation followed, until February 14, when the lowest Monday prices of the decline were reached—namely, 28 cents in Elgin, 28½ cents in New York, 26 cents in Chicago, 29 cents in Philadelphia, and 30 cents in Boston; a total loss from January 3 of 8 cents in Elgin, 7½ cents in New York, 10 cents in Chicago, 9 cents in Philadelphia, and 4½ cents in Boston. The prices on the several markets reached their lowest level for that period of depression simultaneously, and then began to rise all along the line.

Market quotations can not record all the transactions of the market. When the market is active, the demand great, and competition among buyers keen, the actual purchases are generally made at prices slightly higher than the market quotations. Buyers frequently resort to the payment of premiums to attract the best goods and obtain large quantities. On the other hand, when the market is overstocked, the arrivals of fresh goods appear to be sufficient to supply the current demand, and everybody who has butter to sell is so eager to dispose of it that many sales are made below the market quotations.

BUTTER PRICES AND MARGINS FOR 16 CREAMERIES.

Table I, which follows, is compiled from data taken from the records of 16 creameries and shows the number of pounds of butter fat bought and of butter made therefrom, the per cent of overrun, and the average creamery prices and margins for each of the establishments in the

months of June and December, 1904, 1910, and 1911. The table is followed by a detailed description of the plan of operation of each creamery and the methods of handling the material on which the prices are based.

Under the head of average price paid for butter fat the price per pound paid by creameries to the farmers is first given and following this is shown the average price of the fat in 1 pound of butter, computed on the basis of the per cent of overrun, as given in the third figure column. The overrun, as previously explained, is the amount of constituents other than butter fat in a given weight of butter, these constituents consisting mainly of water, casein or curd, and milk sugar, which are not considered in the price, and the percentage of overrun is the per cent which the weight of these constituents is of the weight of the butter fat. The small quantity of salt in the butter affects the price so slightly that it has not been separated from the other items which compose the creamery margin. In the next to last column is shown the price per pound received by the creamery for butter delivered f. o. b. at the shipping station. The difference between this price and the price paid for the fat in 1 pound of butter is the creamery margin, which is shown in the last column.

For individual creameries this creamery margin constitutes the source from which the expenses of operating the plant are paid and from which the profits may accrue. For cooperative creameries the creamery margin shows for the period indicated the difference between the price received for butter f. o. b. shipping station and the price paid to the farmers for butter fat delivered at the creamery. Individual plants which utilize by-products and resell milk and cream and other materials, such as ice and coal, may increase their income by such incidental means, and thereby be able to pay a higher rate for butter fat, thus reducing the creamery margin, or where competition is not active this income may be turned into profits, thus increasing the creamery margin. Cooperative creameries which follow similar methods may derive considerable revenue from incidental sources, and when that income is applied to the payment of the operating expenses of the plant there is available a larger amount of the receipts to be distributed among the farmers, making for them a higher price for butter fat and thereby narrowing the creamery margin.

There is considerable variation in the methods of both individual and cooperative creameries in respect to the handling of by-products and the reselling of materials. In either class of creameries where whole milk is received the farmers generally are allowed to take back the skim milk and buttermilk, or may be paid on the basis of leaving the by-products at the creamery, where they are handled for whatever profit may be obtained. In creameries where cream is received the farmers may get back their portion of the buttermilk, or

it may be allowed to run to waste or the creamery may make arrangements to sell it to advantage. Creameries generally are giving more attention to by-products than they did in the earlier days of creamery operations. Some have recently begun experiments in making and marketing cottage cheese. Another custom followed by some co-operative establishments which may affect the creamery margin is that of setting aside a surplus, or "sinking fund," when the returns are high and drawing on that surplus to equalize prices for butter fat when returns are low and might cause dissatisfaction among the patrons. The surplus may be carried along for several months and then be largely reduced in a single month by the payment for butter fat of a "banner price," which would be higher than the returns for the month would justify. In some establishments there is maintained a regular scale of prices for butter fat, such as "Elgin, even," "2 cents above New York for Western Extras," or a like standard for a certain number of payments, say five months, then at the next payment the surplus is distributed among the patrons as a dividend.

So few of the creameries considered in this report had preserved details relating to sales of by-products and resales of incidental materials that it is impracticable to incorporate those items into the tabulations, although in some establishments such transactions had considerable influence on the creamery margin.

TABLE I.—POUNDS OF BUTTER FAT BOUGHT AND OF BUTTER MADE THEREFROM, AVERAGE OVERRUN, AND AVERAGE CREAMERY PRICES AND MARGINS FOR EACH OF 16 CREAMERIES, BY PERIODS, JUNE AND DECEMBER, 1904, 1910, AND 1911.

Creamery No. 1 (individual).—Whole milk delivered at creamery, patrons getting back skim milk and butter-milk.

Month and year.	Pounds of butter fat bought.	Pounds of butter made therefrom.	Average per cent of overrun.	Average price paid for butter fat delivered at creamery.		Average price per pound, f. o. b. received by creamery for butter.	Average creamery margin per pound.
				Per pound.	In one pound of butter.		
June, 1904.....	(¹)	7, 134	(¹)	(¹)	\$0. 1450	² \$0. 1750	\$0. 0300
December, 1904.....	(¹)	3, 118	(¹)	(¹)	. 2375	³ . 2688	. 0313
June, 1910.....	(¹)	8, 003	(¹)	(¹)	. 2413	³ . 2729	. 0316
December, 1910.....	(¹)	4, 908	(¹)	(¹)	. 2675	³ . 2983	. 0308
June, 1911.....	(¹)	7, 410	(¹)	(¹)	. 1950	³ . 2287	. 0337
December, 1911.....	(¹)	3, 300	(¹)	(¹)	. 3250	³ . 3554	. 0304

Creamery No. 2 (individual).—Whole milk delivered at creamery, patrons getting back skim milk and butter-milk.

June, 1904.....	(¹)	11, 948	(¹)	(¹)	\$0. 1441	³ \$0. 1761	\$0. 0320
December, 1904.....	(¹)	8, 066	(¹)	(¹)	. 2306	³ . 2690	. 0384
June, 1910.....	(¹)	7, 526	(¹)	(¹)	. 2365	³ . 2713	. 0348
December, 1910.....	(¹)	4, 579	(¹)	(¹)	. 2639	³ . 2980	. 0341
June, 1911.....	(¹)	7, 061	(¹)	(¹)	. 1942	³ . 2288	. 0296
December, 1911.....	(¹)	3, 361	(¹)	(¹)	. 3209	³ . 3560	. 0351

¹ Not reported.

² Wrapped in 1-pound prints.

³ In various packages.

TABLE 1.—POUNDS OF BUTTER FAT BOUGHT AND OF BUTTER MADE THEREFROM, AVERAGE OVERRUN, AND AVERAGE CREAMERY PRICES AND MARGINS FOR EACH OF 16 CREAMERIES, BY PERIODS, JUNE AND DECEMBER, 1904, 1910, AND 1911—Contd.

Creamery No. 3 (individual).—Whole milk delivered at creamery, patrons getting back skim milk and buttermilk.

Month and year.	Pounds of butter fat bought.	Pounds of butter made therefrom.	Average per cent of overrun.	Average price paid for butter fat delivered at creamery.		Average price per pound, f. o. b. received by creamery for butter.	Average creamery margin per pound.
				Per pound.	In one pound of butter.		
June, 1904.....	(1)	(1)	13.0	\$0.1775	\$0.1576	2 \$0.1726	\$0.0150
December, 1904.....	(1)	(1)	19.0	.3000	.2527	2 .2680	.0153
June, 1910.....	(1)	(1)	15.8	.2950	.2571	2 .2715	.0144
December, 1910.....	(1)	(1)	18.0	.3300	.2800	2 .2986	.0186
June, 1911.....	(1)	(1)	17.4	.2500	.2129	2 .2244	.0115
December, 1911.....	(1)	(1)	18.0	.4025	.3411	2 .3560	.0149

Creamery No. 4 (individual).—Whole milk delivered at creamery, patrons getting back skim milk and buttermilk.

June, 1904.....	(1)	(1)	(1)	(1)	\$0.149	3 \$0.245	4 \$0.096
December, 1904.....	(1)	(1)	(1)	(1)	.242	3 .337	4 .095
June, 1910.....	(1)	(1)	(1)	(1)	.255	3 .350	4 .095
December, 1910.....	(1)	(1)	(1)	(1)	.290	3 .378	4 .088
June, 1911.....	(1)	(1)	(1)	(1)	.205	3 .305	4 .100
December, 1911.....	(1)	(1)	(1)	(1)	.330	3 .420	4 .090

Creamery No. 5 (individual).—Cream delivered at creamery, patrons getting back buttermilk.

June 1 to 15, 1904.....	26,684	31,270	17.2	\$0.1698	\$0.1449	5 \$0.1769	\$0.0320
June 16 to 30, 1904.....	27,510	32,023	16.4	.1699	.1460	5 .1765	.0305
Dec. 1 to 15, 1904.....	8,622	10,672	23.8	.2835	.2290	5 .2640	.0350
Dec. 16 to 31, 1904.....	9,818	10,877	10.8	.2626	.2370	5 .2734	.0364
June 1 to 15, 1910.....	24,731	29,029	17.4	.2924	.2490	5 .2743	.0253
June 16 to 30, 1910.....	23,115	26,060	12.7	.2876	.2552	5 .2803	.0251
Dec. 1 to 15, 1910.....	11,092	13,334	20.3	.3116	.2590	5 .3017	.0427
Dec. 16 to 31, 1910.....	11,952	14,385	20.4	.3167	.2632	5 .2947	.0315
June 1 to 15, 1911.....	27,615	34,770	25.9	.2306	.1832	5 .2273	.0441
June 16 to 30, 1911.....	29,141	36,952	26.8	.2410	.1901	5 .2390	.0489
Dec. 1 to 15, 1911.....	13,123	15,178	15.7	.3717	.3214	5 .3648	.0434
Dec. 16 to 31, 1911.....	11,855	14,447	21.9	.4018	.3297	5 .3677	.0380

Creamery No. 6 (individual).—Cream and milk delivered at creamery, patrons getting back skim milk and buttermilk.

June, 1904.....	23,302	26,467	13.6	\$0.1630	\$0.1435	6 \$0.1810	\$0.0375
December, 1904.....	12,408	14,333	15.5	.2640	.2286	6 .2750	.0464
June, 1910.....	53,030	64,029	20.7	.3000	.2486	6 .2780	.0294
December, 1910.....	23,264	28,192	21.4	.3230	.2661	6 .3030	.0369
June, 1911.....	49,629	60,387	21.7	.2390	.1964	6 .2280	.0316
December, 1911.....	18,824	23,407	24.0	.3900	.3145	6 .3580	.0435

¹ Not reported.

² Wrapped in 1-pound prints.

³ In various packages.

⁴ In 60-pound tubs.

⁵ Prints in cartons delivered to consumer.

⁶ Margin between price received by farmer and price paid by consumer.

TABLE I.—POUNDS OF BUTTER FAT BOUGHT AND OF BUTTER MADE THEREFROM, AVERAGE OVERRUN, AND AVERAGE CREAMERY PRICES AND MARGINS FOR EACH OF 16 CREAMERIES, BY PERIODS, JUNE AND DECEMBER, 1904, 1910, AND 1911—Contd.

Creamery No. 7 (individual).—Cream gathered by haulers, buttermilk sold by creamery.

Month and year.	Pounds of butter fat bought.	Butter made therefrom (lbs.)	Average percent of overrun.	Average price paid for butter fat delivered at creamery.						Average price per pound f. o. b. received by creamery for butter. ¹	Average creamery margin per pound.
				Per pound.			In one pound of butter.				
				To farmer.	Bonus to hauler.	Total.	To farmer.	Bonus to hauler.	Total.		
June, 1904.....	20,113	21,912	8.9	\$0.1617	\$0.0023	\$0.1640	\$0.1484	\$0.0021	\$0.1505	\$0.1750	\$0.0245
December, 1904.	5,655	6,191	9.5	2.2508	2.0088	2.2596	2.2290	2.0080	2.2370	2.2650	2.0280
				2.2539	3.0097	3.2636	3.2319	3.0089	3.2408	4.2650	4.0242	4.2650	4.0242
June, 1910.....	7,039	7,779	10.5	7.2715	7.0116	7.2831	7.2457	7.0105	7.2562	7.2700	7.0138
				8.2712	8.0103	8.2815	8.2454	8.0093	8.2547	9.2700	9.0153	10.2750	10.0203
December, 1910.	2,983	3,412	14.4	2.2897	2.0143	2.3040	2.2532	2.0128	2.2660	11.2900	11.0240
				3.2996	3.0166	3.3162	3.2619	3.0145	3.2764	12.3000	12.0340	13.3000	13.0236
June, 1911.....	11,084	12,651	14.1	7.2097	7.0072	7.2169	7.1838	7.0063	7.1901	7.2200	7.0299
				8.2195	8.0074	8.2269	8.1924	8.0065	8.1989	13.2200	13.0211	14.2300	14.0311
December, 1911.	3,854	4,168	8.2	2.3437	2.0090	2.3527	2.3177	2.0083	2.3260	2.3500	2.0240
				3.3445	3.0073	3.3518	3.3184	3.0067	3.3251	15.3500	15.0249	16.3600	16.0349

Creamery No. 8 (individual).—Cream gathered by haulers, buttermilk sold by creamery.

June, 1904.....	13,159	13,654	4.5	7 \$0.1410	7 \$0.0113	7 \$0.1523	7 \$0.1349	7 \$0.0108	7 \$0.1457	7 \$0.1750	7 \$0.0293
December, 1904.	3,573	3,856	7.9	8.1409	8.0109	8.1518	8.1348	8.0104	8.1452	8.1750	8.0298
				2.2302	2.0136	2.2438	2.2133	2.0126	2.2259	2.2650	2.0391	4.2650	4.0305
June, 1910.....	14,687	16,744	14.0	3.2352	3.0178	3.2530	3.2180	3.0165	3.2345	5.2700	5.0355
				7.2634	7.0166	7.2800	7.2311	7.0146	7.2457	6.2800	6.0455	7.2700	7.0243
December, 1910.	3,459	4,065	17.5	8.2649	8.0240	8.2889	8.2324	8.0211	8.2535	9.2700	9.0244
				2.2876	2.0109	2.2985	2.2447	2.0092	2.2539	10.2750	10.0294	11.2900	11.0361
June, 1911.....	13,439	15,178	12.9	3.2902	3.0088	3.2990	3.2470	3.0075	3.2545	12.3000	12.0461
				7.2173	7.0119	7.2292	7.1923	7.0105	7.2028	3.3000	3.0455	7.2200	7.0172
December, 1911.	2,963	3,196	7.8	8.2254	8.0131	8.2385	8.1996	8.0116	8.2112	13.2200	13.0088
				2.3361	2.0198	2.3559	2.3117	2.0184	2.3301	14.2300	14.0188	15.3500	15.0199
				3.3444	3.0219	3.3663	3.3195	3.0203	3.3398	16.3600	16.0202

¹ In 60-pound tubs.

² Dec. 1 to 15.

³ Dec. 16 to 31.

⁴ Dec. 16 to 22.

⁵ Dec. 24 to 29.

⁶ Dec. 31.

⁷ June 1 to 15.

⁸ June 16 to 30.

⁹ June 16 to 25.

¹⁰ June 27 to 31.

¹¹ Dec. 1 to 10.

¹² Dec. 12 to 14.

¹³ June 16 and 17.

¹⁴ June 19 to 30.

¹⁵ Dec. 16 to 21.

¹⁶ Dec. 23 to 30.

TABLE I.—POUNDS OF BUTTER FAT BOUGHT AND OF BUTTER MADE THEREFROM, AVERAGE OVERRUN, AND AVERAGE CREAMERY PRICES AND MARGINS FOR EACH OF 16 CREAMERIES, BY PERIODS, JUNE AND DECEMBER, 1904, 1910, AND 1911—Contd.

Creamery No. 9 (cooperative).—Whole milk delivered at creamery, patrons getting back skim milk and buttermilk.

Month and year.	Pounds of butter fat bought.	Pounds of butter made therefrom.	Average per cent of overrun.	Average price paid for butter fat delivered at creamery.		Average price per pound f. o. b. received by creamery for butter.	Average creamery margin per pound.
				Per pound.	In one pound of butter.		
June, 1904.....	32,876	39,077	18.9	\$0.19	\$0.1598	¹ \$0.1713	\$0.0115
December, 1904.....	16,278	19,133	17.6	.29	.2467	1.2651	.0184
June, 1910.....	38,440	47,994	24.9	.35	.2802	1.2882	.0080
December, 1910.....	21,225	25,620	20.5	.34	.2813	1.2965	.0152
June, 1911.....	38,527	45,477	18.8	.27	.2287	1.2406	.0119
December, 1911.....	17,210	20,259	17.6	.40	.3398	1.3675	.0277

Creamery No. 10 (cooperative).—Cream delivered at creamery, buttermilk sold by the association.

June 1 to 15, 1904.....	(²)	(²)	(²)	\$0.18	(²)	³ \$0.1750	(²)
June 16 to 30, 1904.....	(²)	(²)	(²)	.17	(²)	³ .1760	(²)
Dec. 1 to 15, 1904.....	(²)	(²)	(²)	.27	(²)	³ .2650	(²)
Dec. 16 to 31, 1904.....	(²)	(²)	(²)	.28	(²)	³ .2700	(²)
June 1 to 15, 1910.....	(²)	(²)	(²)	⁴ .31	(²)	³ .2750	(²)
June 16 to 30, 1910.....	(²)	(²)	(²)	⁴ .31	(²)	³ .2779	(²)
Dec. 1 to 15, 1910.....	(²)	(²)	(²)	⁴ .35	(²)	³ .2989	(²)
Dec. 16 to 31, 1910.....	(²)	(²)	(²)	⁴ .35	(²)	³ .3025	(²)
June 1 to 15, 1911.....	(²)	(²)	(²)	⁴ .26	(²)	³ .2303	(²)
June 16 to 30, 1911.....	(²)	(²)	(²)	⁴ .27	(²)	³ .2364	(²)
Dec. 1 to 15, 1911.....	(²)	(²)	(²)	⁴ .38	(²)	³ .3544	(²)
Dec. 16 to 30, 1911.....	(²)	(²)	(²)	⁴ .42	(²)	³ .3625	(²)

Creamery No. 11 (cooperative).—Milk and cream delivered at creamery, patrons getting back skim milk and buttermilk.

June, 1904:								
Hand-separator cream.....	11,393	12,170	10.3	{	\$0.1553	\$0.1454	⁵ \$0.1672	\$0.0218
Whole milk.....	5,936	6,813							10.5	{	.1595	.1480	^{5}.1712	.0232
December, 1904:								
Hand-separator cream.....	4,951	5,236	10.5	{	.2602	.2460	⁶ .2614	.0154
Whole milk.....	2,140	2,365							23.0	{	.2215	.2215	^{6}.2565	.0350
June, 1910: Hand-separator cream.....	24,342	29,955	23.0	{	.3173	.2579	⁶ .2733	.0154
December, 1910: Hand-separator cream.....	12,000	14,506	20.9	{	.3180	.2631	⁶ .2849	.0218
June, 1911: Hand-separator cream.....	26,234	31,825	21.3	{	.2683	.2211	⁶ .2353	.0142
December, 1911: Hand-separator cream.....	10,490	12,138	15.7	{	.3986	.3445	⁶ .3674	.0229

Creamery No. 12 (cooperative).—Milk and cream delivered at creamery, patrons getting back skim milk and buttermilk.

Two weeks ending—							
June 20, 1904.....	6,844	8,111	18.5	⁷ \$0.18	\$0.1519	⁸ \$0.1683	\$0.0164
July 4, 1904.....	6,947	8,108	16.7	⁷ .18	.1542	1.1651	.0109
Dec. 19, 1904.....	2,165	2,546	17.6	⁷ .25	.2126	1.2474	.0348
Jan. 2, 1905.....	2,196	2,526	15.0	⁷ .27	.2348	1.2673	.0325
June 13, 1910.....	18,930	22,951	21.2	⁸ .32	.2640	1.2793	.0153
June 27, 1910.....	18,948	23,239	22.6	⁸ .33	.2692	1.2848	.0156
Dec. 12, 1910.....	8,340	10,427	25.0	⁸ .37	.3000	1.3073	.0073
Dec. 26, 1910.....	8,167	10,164	24.5	⁸ .35	.2811	1.2989	.0178
June 12, 1911.....	18,513	22,670	22.5	⁸ .26	.2122	1.2285	.0163
June 26, 1911.....	18,264	21,947	20.2	⁸ .27	.2246	1.2358	.0112
Dec. 11, 1911.....	6,819	8,226	20.6	⁸ .40	.3317	1.3525	.0208
Dec. 25, 1911.....	7,130	8,563	20.1	⁸ .42	.3497	1.3678	.0181

¹ In 60-pound tubs.

² Not reported.

³ In 63-pound tubs.

⁴ Nonstockholders were paid 1 cent less per pound than the price shown.

⁵ In tubs.

⁶ In boxes, packed solid.

⁷ For butter fat in whole milk.

⁸ For butter fat in hand-separator cream.

TABLE I.—POUNDS OF BUTTER FAT BOUGHT AND OF BUTTER MADE THEREFROM, AVERAGE OVERRUN, AND AVERAGE CREAMERY PRICES AND MARGINS FOR EACH OF 16 CREAMERIES, BY PERIODS, JUNE AND DECEMBER, 1904, 1910, AND 1911—Concl'd.

Creamery No. 13 (cooperative).—Cream gathered by haulers paid by creamery, buttermilk sold by creamery.

Month and year.	Pounds of butter fat bought.	Pounds of butter made therefrom.	Average per cent of overrun.	Average price paid for butter fat delivered at creamery.		Average price per pound f. o. b. received by creamery for butter.	Average creamery margin per pound.
				Per pound.	In one pound of butter.		
June, 1904.....	(1)	90,008	(1)	(2)	\$0.1589	3 \$0.1742	\$0.0133
December, 1904.....	(1)	35,771	(1)	(2)	.2587	3 .2651	.0064
June, 1910.....	74,070	87,852	18.5	\$0.3150	.2658	3 .2731	.0073
December, 1910.....	36,355	43,393	19.0	.3500	.2941	3 .3005	.0064
June, 1911.....	74,247	87,543	18.0	.2600	.2203	3 .2326	.0123
December, 1911.....	28,278	33,637	19.0	.4200	.3529	3 .3530	.0001

Creamery No. 14 (cooperative).—Cream gathered by haulers paid by creamery, buttermilk sold by creamery.

June, 1904.....	13,711	16,382	19.5	4 \$0.15	4 \$0.1255	5 \$0.1618	6 \$0.0363
December, 1904.....	5,325	6,413	20.4	4 .22	4 .1826	5 .2537	6 .0711
June, 1910.....	25,542	30,730	20.3	4 .28	4 .2327	5 .2649	6 .0322
December, 1910.....	12,816	15,839	23.6	4 .31	4 .2508	5 .2887	6 .0379
June, 1911.....	26,774	32,065	19.8	4 .23	4 .1920	5 .2225	6 .0305
December, 1911.....	12,172	14,990	23.2	4 .38	4 .3085	5 .3534	6 .0449

Creamery No. 15 (cooperative).—Cream gathered by haulers paid by creamery, buttermilk sold by creamery.

June, 1904.....	83,501	90,116	7.9	\$0.1704	\$0.1579	5 \$0.1713	\$0.0134
December, 1904.....	38,556	42,638	10.6	.2707	.2448	5 .2659	.0211
June, 1910.....	78,417	97,126	23.9	.3146	.2539	6 .2794	.0255
December, 1910.....	47,451	58,762	23.8	.3266	.2638	6 .2830	.0192
June, 1911.....	78,606	92,855	18.1	.2600	.2202	6 .2330	.0128
December, 1911.....	33,465	41,073	22.7	.4000	.3260	6 .3547	.0287

Creamery No. 16 (centralizer).—Cream received by rail, buttermilk utilized by creamery.

June, 1904.....	249,904	304,474	21.8	\$0.1645	\$0.1351	7 \$0.1677	7 \$0.0326
December, 1904.....	124,929	152,963	22.5	.2545	.2078	7 .2628	7 .0550
June, 1910.....	260,763	324,487	24.4	.2670	.2146	7 .2704	7 .0558
December, 1910.....	65,814	81,470	23.8	.2957	.2389	7 .3003	7 .0614
June, 1911.....	160,825	199,854	24.4	.2068	.1662	7 .2268	7 .0606
December, 1911.....	90,457	111,429	23.2	.3332	.2705	7 .3453	7 .0748

¹ Not reported.² Cream bought by the inch.³ Prints.⁴ Price paid farmer after deducting cost of gathering cream, not separately reported.⁵ In 60-pound prints.⁶ Including cost of gathering cream, not separately reported.⁷ Prints in cartons sold direct to retailers, which explains the large margin.

Creamery No. 1 is a small factory owned by an individual and operated on the plan of charging farmers a certain price per pound for making and selling butter. No records were kept of the number of pounds of butter fat used, as farmers were paid on the basis of the number of pounds of butter made and sold. Nor had the records of overrun been preserved, but the manager stated that the overrun averaged from 18 to 20 per cent. The price paid the farmer during the whole time was the net price per pound of butter received at the shipping station less the creamery margin, and represents the price of butter fat in one pound of butter.

There was a measure of cooperation in some of the work. Farmers took turns in hauling the butter to the shipping station, 5 miles away, without cost to the creamery. They also hauled coal and put up ice in the winter, the only expense to the creamery being the cost of "beer and lunch" while doing the work. The output was wrapped in 1-pound prints, boxed, and shipped on Thursday, to arrive in Cincinnati or Pittsburgh the following Monday. It was paid for f. o. b. shipping station at the Elgin quotation the day of arrival at destination. Remittances came promptly and the farmers received their pay about the 10th of the month for milk delivered during the preceding month. This creamery is one of three or four operated by one man.

Creamery No. 2 is one of a dozen or more operated by a firm of wholesale provision manufacturers and dealers. It is operated on the same plan as No. 1 inasmuch as there is a certain charge per pound for making and selling the butter. This output was handled in various kinds of packages, consisting of tubs and boxes of various sizes, packed solid, and prints in boxes of different sizes. It was shipped on Thursday to reach market on Monday, billed f. o. b. shipping station, at the following scale: For 60-pound tubs, Elgin quotation day of arrival at destination; for 30-pound tubs, one-half cent above Elgin; for 5-pound boxes, packed solid, and 1-pound prints in boxes, 1 cent above Elgin. Creamery sales were made on 60 to 90 days' time, but farmers were paid by the 10th or 12th of the month for the butter fat furnished during the preceding month, which virtually amounts to the firm buying the butter from the farmers at the end of the month at the average market price for the month and selling it on time.

Creamery No. 3 is owned and operated by a firm which controls several creameries and deals extensively in butter and cheese. It is in a locality where there is considerable competition for milk and the price of butter fat is bid up to a level that brings the price for the fat in 1 pound of butter considerably higher than that shown in creameries Nos. 1 and 2. As the price of butter f. o. b. is approximately uniform for these creameries, No. 3 paying the highest price to the farmer, must manufacture and sell its output on a closer margin than either No. 1 or No. 2, its competitors in the butter market. These three concerns are competitors in the butter market, as transportation facilities and refrigerator cars enable all of them to supply goods to the butter markets throughout the North, East, and South. But they are not competitors for the raw material. They are somewhat widely separated and each gathers milk and cream from nearby farmers only.

A general idea of the variation in prices and margins in these three creameries is given in the following table, which presents

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simple averages of prices and margins in each plant for the six monthly periods covered:

AVERAGE PRICES OF FAT IN 1 POUND OF BUTTER, AVERAGE PRICES PER POUND OF BUTTER F. O. B. SHIPPING STATION, AND AVERAGE CREAMERY MARGINS FOR THE SIX PERIODS IN EACH OF THREE SELECTED CREAMERIES.

Creamery.	Average price of fat in 1 pound of butter.	Average price per pound of butter f. o. b. shipping station.	Average creamery margin.
No. 1.....	\$0.2352	\$0.2665	\$0.0313
No. 2.....	.2307	.2657	.0350
No. 3.....	.2502	.2652	.0150

The above illustration shows that the prices per pound of butter fat vary more widely than do the prices received for butter by the creameries. Creameries Nos. 1 and 2 had less competition with milk dealers than No. 3. The butter output of the three creameries brought very nearly a uniform price notwithstanding the fact that the output of No. 1 was cut into 1-pound prints and wrapped in parchment paper, part of the output of No. 2 was cut into prints and wrapped, part packed in small tubs and part in 60-pound tubs, while the entire product of No. 3 was marketed in 60-pound tubs.

Creamery No. 4 belongs to an individual. Whole milk is brought to the creamery by the farmers, who get back skim milk and butter-milk. Payments for raw material are made on the basis of butter made. The records of butter fat and overrun had not been preserved and the number of pounds of butter made and sold could not be ascertained.

The product is marketed on an unusual plan. It is shipped to various cities and delivered at residences of consumers, by agents of the creamery, where there are enough customers to justify a delivery agency, and by express companies where the customers are fewer.

Prices paid by this creamery to farmers for raw material may be justly compared with prices paid by other creameries for raw material, as they are on the same basis in buying milk. But prices received for butter should be compared with the prices received by retailers of butter, for this creamery sells directly to consumer, and therefore competes with local retail trade. The margins of difference between the buying prices and selling prices should not be compared with like margins of other creameries. The margins of other creameries represent the differences between the price paid farmers for the fat in a pound of butter and the price per pound received by the creamery for butter at shipping station, while the margins for No. 4 represent the difference between the price paid farmers for the fat

in a pound of butter and the price per pound received by the creamery for butter delivered at the residence of the consumer. In short, the margins for Creamery No. 4 show in a single amount the total difference between the price paid the farmer for the raw material in a pound of butter and the price paid by the consumer for a pound of butter delivered at his door. The manufacture and distribution are entirely under the control of the owner of the plant. He assumes responsibility for all the operations, pays all charges, and retains for his profit whatever he can save of the margin between prices paid farmers and prices received from consumers.

Creamery No. 5 is owned by a firm which operates a dozen or more factories making butter. In the factory for which data were obtained considerable quantities of ice cream are made, but the data relate only to the butter making. The combination butter making and ice cream making has little effect on the prices. Nearly all the butter fat made into butter in this factory is delivered at the creamery in cream separated on the farm and hauled by the farmers. They may take their portion of buttermilk, and in the few cases of farmers delivering whole milk the factory separates the cream and the farmer gets back the skim milk and his portion of buttermilk. This creamery makes a certain charge per pound for making butter and also deducts fees to pay for the services of a secretary. The charge for making may vary with the price of the monthly output. The product is shipped in packages of various styles and sizes which sell at varying prices. The prices f. o. b. shipping station are the average prices of butter in all kinds of packages used for the periods of time shown.

Creamery No. 6 is owned by a corporation. The butter fat is delivered at the creamery. Some is delivered in cream and some in milk by farmers, who get back skim milk and buttermilk. A small part comes by rail in separated cream. The buttermilk from the cream received by rail is sold or used by the creamery. The output is cut into 1-pound prints and wrapped in parchment paper. Farmers are paid early in the month for butter fat supplied during the preceding month. Butter is sold on 30 to 90 days' time.

Creameries Nos. 7 and 8 are owned and operated by a company which operates a number of creameries. The two creameries here shown are operated on a uniform plan. The cream is separated from the milk on the farm and is gathered and brought to the creamery by haulers under contract or agreement with the company. The company stipulates to pay a hauler a minimum sum per trip or per week for hauling cream. A charge of 2 cents per pound, or more or less according to contract, is made against the farmer to pay for hauling. If the sum of the charges to farmers on the hauler's route

equals or exceeds the minimum pay for hauling agreed upon, the hauler receives the total amount, but if it falls below the minimum the company makes up the difference between the sum of the charges against the farmers and the minimum pay for the hauler. This difference is designated as a bonus. The price of butter fat paid by the company, therefore, is higher than the price received by the farmer.

The tables show the prices per pound paid for butter fat delivered at the creamery, the bonus per pound paid haulers, and the total prices per pound paid by the company for butter fat and for the fat in 1 pound of butter. The total price paid by the creamery for the fat in 1 pound of butter is made the basis for computing the creamery margin since that is the price paid for the material delivered at the creamery ready for the manufacture.

Farmers are paid for butter fat weekly by check, which is sent early in the week for material furnished during the preceding week. Payment for butter shipped by the company is made on the basis of the market the day of arrival at destination, and remittances by buyers are sent varying from the day of arrival to 30 days or more later.

Creamery No. 9 is a cooperative association. It is managed by a careful, capable secretary and manager. The data furnished were complete and clear, and the results obtained could be classed as almost ideal. Such good results are not obtained by all cooperative creameries, but under careful supervision, with trained and efficient butter makers using modern methods and having up-to-date appliances, these good results can be obtained. A great number of creameries—cooperative, individual, and centralizer—are turning out large quantities of high-grade product at a narrow margin of cost.

The patrons (farmers) of this creamery deliver the whole milk at the factory. The skim milk and buttermilk are taken back by the farmer. About one-eighth of the output is sold in local markets and seven-eighths shipped to eastern markets where it sells at a premium of from 1 to 2½ cents above the market quotations for western extras.

The overrun was uniformly large, which means that a large amount of butter was produced as compared with the amount of butter fat used. The output was large and of such a high grade that it commanded a premium over the prevailing market prices. As patrons of a cooperative establishment the farmers supplying milk to this creamery were paid the total proceeds from sales after deducting the expenses of operation, and therefore received a good price for their butter fat. As a result the price of butter fat in a pound of butter approached very closely the price per pound of the finished product, thus making the creamery margin low.

In 1904 this creamery received an average of 17.13 cents per pound net for its June output. The expenses of the factory amounted to 1.15 cents per pound. Deducting this amount from the net price per pound received for sales, there remains 15.98 cents to pay farmers for the butter fat in each pound of butter made, which represented 19 cents per pound for butter fat. For June, 1910, the high overrun and the large output with an economical expense account brought the cost of making down to 0.80 cent per pound, enabling the farmers to get in the aggregate for the material, unmade, within 80 cents per 100 pounds of the total net returns from the market sales. For December, 1911, the output was smaller than for June, 1910, by about 58 per cent, and the overrun was much lower. Some extra expenses were incurred and the deductions for operating and maintaining the plant amounted to 2.77 cents per pound, or \$2.77 per 100 on a market price considerably higher than for June, 1910.

Creamery No. 10 is a cooperative plant. Farmers delivered cream at the factory and the buttermilk was sold by the creamery. The only figures available back as far as June, 1904, were the prices paid for butter fat and the net prices received for butter. As these, however, are the principal items considered by dealers, the figures are given. The farmer or producer usually talks of butter fat; the dealer and consumer talk of butter. This creamery is conducted on the general plan of cooperative creameries. A draft for part payment accompanies the shipping bill through a bank to the consignee, and balances come promptly on the basis of the market the day of arrival of butter at destination. Farmers are paid monthly on or about the 15th of the month. For the periods shown in 1910 and 1911 patrons who were not stockholders received 1 cent per pound less for their butter fat than the prices given in the table.

Creamery No. 11 is a cooperative plant. In 1904 the farmers delivered both whole milk and cream. The prices paid for butter fat in whole milk differed slightly from the prices paid for fat in hand-separator cream. In 1910 and 1911 only hand-separator cream was used. In 1904 this creamery was comparatively new, the plan of operation was not so well systematized as it became later, and the creamery margin or cost of making shows some fluctuations. In 1910 and 1911 the methods of operation were better understood, the output had materially increased, and the cost of making became more nearly uniform. In each of the later years this margin of cost was low in June when the output was large, and somewhat higher in December when the output was smaller. The plan of selling the product and settling with the patrons is similar to that of other cooperative creameries.

Creamery No. 12 is a cooperative creamery. In 1904 whole milk was delivered to the factory by the farmers who took back the skim milk and buttermilk. By 1910 the methods had changed, and farmers separated the cream by hand separators on the farms and hauled the cream to the factory, getting back their proportion of buttermilk after each churning. Accounts were totalized and settlements made with farmers fortnightly on the usual plan of cooperative creameries.

The large creamery margin or high cost of manufacturing shown for the product of December, 1904, resulted from the low overrun and small output. The small margin or low cost of making, shown for the two weeks ending December 12, 1910, resulted from the unusual overrun of 25 per cent, the larger output than for December, 1904, and the fact that there was an unusually small outlay of the funds for expenses of operation and maintenance. Sometimes the manager of a cooperative creamery may bring a balance forward from a preceding period and pay it out with funds accruing in the period to which it is brought, or even overpay the farmers for the time just ended. In such a case and in cases where unusual expenses have been paid or the payment of usual expenses has been postponed, the prices and margins are abnormally affected. The product was marketed and proceeds distributed to farmers according to the usual plans of cooperative creameries.

Creamery No. 13 is cooperative. The cream was gathered by haulers paid by the creamery, and the buttermilk was sold for the benefit of the general account of the association. In 1904, the cream was bought by the "inch." Settlements with farmers were made on the basis of the number of pounds of butter made from the cream churned, and each farmer was paid for the number of pounds of butter produced from the cream furnished by him. By 1910, the Babcock test¹ had been adopted, and after that farmers were paid for the number of pounds of butter fat in the cream supplied.

Payments for hauling are included in prices paid for butter fat and consequently in the prices paid for the fat in one pound of butter. The buttermilk was sold at an attractive figure, and some cream also was sold for the account of the association. There was some other income from incidental sales of other items, such as ice, salt, coal, old equipment, and miscellaneous supplies, and from interest at the bank. By including the pay for gathering the cream in the prices paid for butter fat, and by using the income from the sale of the raw materials and by-products and from incidental sources the secretary was able to pay the farmers so high a price for butter fat that the creamery margins are very low. In December, 1911, the

¹ See description on p. 11.

amount paid to farmers was practically equal to the net amount received for the butter f. o. b. shipping station. During 1911 the cash balance in care of the treasurer was considerably reduced. The output was marketed and proceeds distributed to farmers by the usual methods of cooperative creameries.

Creamery No. 14 is a cooperative organization. The cream is gathered by haulers employed by the management of the creamery, and the buttermilk is sold for the general account. Settlements are made monthly. All but a small percentage of the output is shipped in 60-pound tubs to eastern markets. A small percentage is sold to local dealers and consumers. The records of this establishment did not show separately the payments for gathering the cream and the payments of the expenses of operating the factory. Therefore, in the creamery margin is included all the cost from gathering the raw material at the farms to delivering the butter at the shipping station.

In December, 1904, with an output of 6,413 pounds, the total expense ran up to 7.11 cents per pound, while in June, 1910, an output of 30,730 pounds was produced for a toll of 3.22 cents per pound, and in June, 1911, a still larger output of 32,065 pounds was turned out at a cost of 3.05 cents per pound for the services performed by the creamery. The usual methods of cooperative creameries were followed in marketing the product and distributing the proceeds to patrons furnishing the raw material.

Creamery No. 15 is cooperative. Cream was gathered by haulers paid from the general funds of the association. The buttermilk was sold for the account of the general fund. Approximately 90 per cent of the output was shipped to eastern markets. The other 10 per cent was sold to patrons, other local consumers, and local dealers.

In this creamery two methods were used in determining prices to be paid for butter fat. According to the first method, which was in use in the years 1904 and 1910, the amount paid monthly for butter fat at the farm was first ascertained by deducting from the gross receipts of the creamery the expenses of maintenance and operation and the amount paid haulers for gathering cream. From this was calculated to the nearest even cent the price per pound paid to farmers for their butter fat at the farm. The total price per pound paid by the creamery was found by adding to the price paid the farmer the average price per pound for gathering the cream.

According to the second method, used in the year 1911, the amount paid monthly for butter fat at the creamery was first ascertained by deducting from the gross receipts the expenses of maintenance and operation. From this was calculated to the nearest even cent the price per pound paid for the butter fat at the creamery.

The price per pound paid the farmer at the farm was found by deducting the average amount per pound paid haulers from the price paid at the creamery.

The following table shows the operation of the two methods in the periods covered:

PRICES PAID FOR BUTTER FAT AND FOR GATHERING CREAM IN CREAMERY NO. 15, JUNE AND DECEMBER, 1904, 1910, AND 1911.

Month and year.	Average price paid for butter fat.						Average price per pound f. o. b. received by creamery for butter.	Average creamery margin per pound.
	Per pound.			In one pound of butter.				
	To farmer.	To haulers.	Total at creamery	To farmer.	To haulers.	Total at creamery.		
June, 1904.....	\$0.1600	\$0.0104	\$0.1704	\$0.1483	\$0.0096	\$0.1579	\$0.1713	\$0.0134
December, 1904.....	.2600	.0107	.2707	.2351	.0097	.2448	.2659	.0211
June, 1910.....	.3000	.0146	.3146	.2421	.0118	.2539	.2794	.0255
December, 1910.....	.3100	.0166	.3266	.2504	.0134	.2638	.2830	.0192
June, 1911.....	.2462	.0138	.2600	.2085	.0117	.2202	.2330	.0128
December, 1911.....	.3789	.0211	.4000	.3088	.0172	.3260	.3547	.0287

In this table the even prices paid to farmers for butter fat at the farm are shown for June and December, 1904 and 1910. In June, 1904, for example, the farmers received an even 16 cents per pound for their butter fat. By adding to this the price per pound of butter fat paid for gathering the cream (1.04 cents) the price paid for butter fat at the creamery is ascertained—namely, 17.04 cents. In June and December, 1911, even prices were paid at the creamery. Thus in June, 1911, 26 cents per pound was paid for butter fat at the creamery. By subtracting from this the price paid for gathering the cream (1.38 cents), the price paid to the farmer at the farm is found—namely, 24.62 cents.

In stating farmers' accounts under the first method the even quotations were used and payments were made on those prices. In making up farmers' accounts under the second method the even quotations on butter fat at the creamery were used but before payments were made the charges for hauling were deducted from the amount resulting from the computations on the even quotations.

The table also shows, for the butter fat in 1 pound of butter, the average prices paid to the farmers and to the haulers for gathering the cream, together with the total at the creamery. The difference between the prices received by the creamery for the butter f. o. b. and the prices received by the patrons of this creamery for butter fat is made up of the cost of making and marketing the product represented in this creamery by the creamery margin plus the price paid for gathering the cream. This is shown in the following table, drawn from the detailed table, presented above:

CHARGES FOR GATHERING MATERIAL AND MAKING AND MARKETING THE PRODUCT OF CREAMERY NO. 15, JUNE AND DECEMBER, 1904, 1910, AND 1911.

Item.	1904		1910		1911	
	June.	Decem-ber.	June.	Decem-ber.	June.	Decem-ber.
Price paid for gathering fat in 1 pound of butter.....	\$0.0096	\$0.0097	\$0.0118	\$0.0134	\$0.0117	\$0.0172
Creamery margin per pound.....	.0134	.0211	.0255	.0192	.0128	.0287
Total.....	.0230	.0308	.0373	.0326	.0245	.0459

As will be seen from this table the total cost of gathering the material and making and marketing the product varied from a minimum of 2.30 cents per pound in June, 1904, to a maximum of 4.59 cents in December, 1911.

Creamery No. 16 is a centralizer. The cream supply is shipped by rail by patrons living from 10 to 150 miles or more away from the factory. Prices shown in the table are the prices paid by the company for the material at the creamery station. The farmers prepay the transportation charges and their net returns are the proceeds of the creamery price less the shipping charges. This plant receives cream from a large number of shippers, and the shipping distances are so varied that it is impracticable to calculate the cost of transportation. The creamery officials estimated that the average cost of shipping was from 1 to 1½ cents per pound of butter fat.

The output is cut into 1-pound prints, wrapped in parchment paper, inclosed in double-waxed cartons, and packed in cases carrying 20, 30, 40, 50, or 60 pounds each.

The creamery margins appear somewhat exorbitant, but they include all expenses from the time the butter fat is bought from the farmer until the product is sold to the dealer. This establishment sells largely to retailers, either direct or through its own jobbers, and therefore for a large part of the output the creamery margin represents the increase in price from the producer (farmer), through the hands of the manufacturer and distributor (creamery) to the retailer. For that portion of the output sold direct to retailers, the increase added to the creamery price to make the consumer's price consists of transportation and handling charges and the retailer's margin. The figures represent the aggregate business and average prices for the months given.

Naturally the centralizers draw cream from localities where there is little competition because the supply is so limited that a local factory could not exist. They also bid for raw materials where competition is keenest. Their product competes with products from all other sources. Their large volume of business enables them to keep in touch with widely-distributed markets. They employ highly-skilled

butter makers who get the largest output and best qualities of product obtainable from the raw materials used. The uniformly large overrun indicated in the table shows that there is little waste, and little variation from the highest possible results.

This establishment shows an almost uniform increase in the creamery margins in all the figures given since June 1, 1904, due, as stated by the manager, to increased knowledge gained from experience, and to some extent to the utilization of the by-products (buttermilk, etc.), which were formerly wasted.

The figures for 1910 and 1911 almost uniformly show lower prices for butter fat and lower prices for the output of butter than is shown by the other creameries, and this notwithstanding the fact that the centralizer prints, wraps, and packs its product in cartons while other creameries sell in tubs; boxes, packed solid; prints, wrapped; and prints, wrapped and packed in cartons.

Centralizers, like other establishments, buy at the lowest prices that will attract the raw material and sell at the highest prices that will permit an outlet for the product, and being confronted with competition at both ends of the transaction they must do business within the range of margins established by supply and demand, and competition in trade, or abandon the field to other agencies.

Table II, which follows, brings together under each month the data for the several creameries shown in Table I:

TABLE II.—POUNDS OF BUTTER FAT BOUGHT AND OF BUTTER MADE THEREFROM, AVERAGE OVERRUN, AND AVERAGE CREAMERY PRICES AND MARGINS FOR EACH PERIOD, JUNE AND DECEMBER, 1904, 1910, AND 1911, BY CREAMERIES.

June, 1904.

Creamery number.	Pounds of butter fat bought.	Pounds of butter made therefrom.	Average per cent of overrun.	Average price paid for butter fat delivered at creamery.		Average price per pound f. o. b. received by creamery for butter.	Average creamery margin per pound.
				Per pound.	In one pound of butter.		
1.....	(¹)	7,134	(¹)	(¹)	\$0.1450	\$0.1750	\$0.0300
2.....	(¹)	11,948	(¹)	(¹)	.1441	.1761	.0320
3.....	(¹)	(¹)	13.0	\$0.1775	.1576	.1726	.0150
4.....	(¹)	(¹)	(¹)	(¹)	.1490	2.2450	2.0960
5.....	54,194	63,293	16.8	.1699	.1455	.1767	.0312
6.....	23,302	26,467	13.6	.1630	.1435	.1810	.0375
7.....	20,113	21,912	8.9	.1640	.1505	.1750	.0245
8.....	13,059	13,654	4.5	.1521	.1455	.1750	.0295
9.....	32,876	39,077	18.9	.1900	.1598	.1713	.0115
10.....	(¹)	(¹)	(¹)	.1750	(¹)	.1755	(¹)
11.....	17,329	18,983	10.3	.1574	.1467	.1692	.0225
12.....	13,791	16,219	17.6	.1800	.1531	.1667	.0136
13.....	(¹)	90,008	(¹)	(³)	.1589	.1742	.0133
14.....	13,711	16,382	19.5	4.1500	4.1255	.1618	5.0363
15.....	33,501	90,116	7.9	.1704	.1579	.1713	.0134
16.....	249,904	304,474	21.8	.1645	.1351	6.1677	6.0326

¹ Not reported.

² Sold direct to consumer.

³ Cream bought by the inch.

⁴ Price paid farmer after deducting cost of gathering cream, not separately reported.

⁵ Including cost of gathering cream, not separately reported.

⁶ Sold direct to retailers.

TABLE II.—POUNDS OF BUTTER FAT BOUGHT AND OF BUTTER MADE THEREFROM, AVERAGE OVERRUN, AND AVERAGE CREAMERY PRICES AND MARGINS FOR EACH PERIOD, JUNE AND DECEMBER, 1904, 1910, AND 1911, BY CREAMERIES—Continued.

December, 1904.

Creamery number.	Pounds of butter fat bought.	Pounds of butter made therefrom.	Average per cent of overrun.	Average price paid for butter fat delivered at creamery.		Average price per pound f. o. b. received by creamery for butter.	Average creamery margin per pound.
				Per pound.	In one pound of butter.		
1	(1)	3,118	(1)	(1)	\$0.2375	\$0.2688	\$0.0313
2	(1)	8,066	(1)	(1)	.2306	.2690	.0384
3	(1)	(1)	19.0	\$0.3000	.2527	.2680	.0153
4	(1)	(1)	(1)	(1)	.2420	2.3370	2.0950
5	18,440	21,549	17.3	.2730	.2330	.2687	.0357
6	12,408	14,333	15.5	.2640	.2286	.2750	.0464
7	5,655	6,191	9.5	.2616	.2389	.2700	.0311
8	3,573	3,856	7.9	.2484	.2302	.2700	.0398
9	16,278	19,133	17.6	.2900	.2467	.2651	.0184
10	(1)	(1)	(1)	.2750	(1)	.2675	(1)
11	7,091	7,601	10.5	.2576	.2338	.2590	.0252
12	4,361	5,072	16.3	.2600	.2237	.2574	.0337
13	(1)	35,771	(1)	(2)	.2587	.2651	.0064
14	5,325	6,413	20.4	4.2200	4.1826	.2537	5.0711
15	38,556	42,638	10.6	.2707	.2448	.2659	.0211
16	124,929	152,963	22.5	.2545	.2078	6.2628	6.0550

June, 1910.

1	(1)	8,003	(1)	(1)	\$0.2413	\$0.2729	\$0.0316
2	(1)	7,526	(1)	(1)	.2365	.2713	.0348
3	(1)	(1)	15.8	\$0.2950	.2571	.2715	.0144
4	(1)	(1)	(1)	(1)	.2550	2.3500	2.0950
5	47,846	55,089	15.1	.2900	.2521	.2773	.0252
6	53,030	64,029	20.7	.3000	.2486	.2780	.0294
7	7,039	7,779	10.5	.2823	.2555	.2717	.0162
8	14,687	16,744	14.0	.2844	.2496	.2717	.0221
9	38,440	47,994	24.9	.3500	.2802	.2882	.0080
10	(1)	(1)	(1)	.3100	(1)	.2765	(1)
11	24,342	29,955	23.0	.3173	.2579	.2733	.0154
12	37,878	46,190	21.9	.3250	.2666	.2821	.0155
13	74,070	87,852	18.5	.3150	.2658	.2731	.0073
14	25,542	30,730	20.3	4.2800	4.2327	.2649	5.0322
15	78,417	97,126	23.9	.3146	.2559	.2794	.0255
16	260,763	324,487	24.4	.2670	.2146	6.2704	6.0558

December, 1910.

1	(1)	4,908	(1)	(1)	\$0.2675	\$0.2983	\$0.0308
2	(1)	4,579	(1)	(1)	.2639	.2980	.0341
3	(1)	(1)	18.0	\$0.3300	.2800	.2986	.0186
4	(1)	(1)	(1)	(1)	.2900	2.3780	2.0880
5	23,044	27,719	20.4	.3142	.2611	.2982	.0371
6	23,264	28,192	21.4	.3230	.2661	.3030	.0369
7	2,983	3,412	14.4	.3101	.2712	.2966	.0254
8	3,459	4,065	17.5	.2988	.2542	.2967	.0425
9	21,225	25,620	20.5	.3400	.2813	.2965	.0152
10	(1)	(1)	(1)	.3500	(1)	.3007	(1)
11	12,000	14,506	20.9	.3180	.2631	.2849	.0218
12	16,507	20,591	24.7	.3600	.2906	.3031	.0125
13	36,355	43,393	19.0	.3500	.2941	.3005	.0064
14	12,816	15,839	23.6	4.3100	4.2508	.2887	5.0379
15	47,451	58,762	23.8	.3266	.2638	.2830	.0192
16	65,814	81,470	23.8	.2957	.2389	6.3003	6.0614

¹ Not reported.

² Sold direct to consumer.

³ Cream bought by the inch.

⁴ Price paid farmer after deducting cost of gathering cream, not separately reported.

⁵ Including cost of gathering cream, not separately reported.

⁶ Sold direct to retailers.

TABLE II.—POUNDS OF BUTTER FAT BOUGHT AND OF BUTTER MADE THEREFROM, AVERAGE OVERRUN, AND AVERAGE CREAMERY PRICES AND MARGINS FOR EACH PERIOD, JUNE AND DECEMBER, 1904, 1910, AND 1911, BY CREAMERIES—Concluded.

June, 1911.

Creamery number.	Pounds of butter fat bought.	Pounds of butter made therefrom.	Average per cent of overrun.	Average price paid for butter fat delivered at creamery.		Average price per pound f. o. b. received by creamery for butter.	Average creamery margin per pound.
				Per pound.	In one pound of butter.		
1.....	(1)	7,410	(1)	(1)	\$0.1950	\$0.2287	\$0.0337
2.....	(1)	7,061	(1)	(1)	.1942	.2238	.0296
3.....	(1)	(1)	17.4	\$0.2500	.2129	.2244	.0115
4.....	(1)	(1)	(1)	(1)	.2050	2.3050	2.1090
5.....	56,756	71,722	26.3	.2358	.1867	.2332	.0465
6.....	49,629	60,387	21.7	.2390	.1964	.2280	.0316
7.....	11,084	12,651	14.1	.2219	.1945	.2233	.0288
8.....	13,439	15,178	12.9	.2338	.2070	.2233	.0163
9.....	38,527	45,477	18.8	.2700	.2287	.2406	.0119
10.....	(1)	(1)	(1)	.2650	(1)	.2334	(1)
11.....	26,234	31,825	21.3	.2683	.2211	.2353	.0142
12.....	36,777	44,617	21.3	.2650	.2184	.2322	.0138
13.....	74,247	87,543	18.0	.2600	.2203	.2326	.0123
14.....	26,774	32,065	19.8	3.2300	3.1920	.2225	4.0305
15.....	78,606	92,855	18.1	.2600	.2202	.2330	.0128
16.....	160,825	199,854	24.4	.2068	.1662	5.2268	5.0606

December, 1911.

1.....	(1)	3,300	(1)	(1)	\$0.3250	\$0.3554	\$0.0304
2.....	(1)	3,361	(1)	(1)	.3209	.3560	.0351
3.....	(1)	(1)	18.0	\$0.4025	.3411	.3560	.0149
4.....	(1)	(1)	(1)	(1)	.3300	2.4200	2.0900
5.....	24,978	29,625	18.8	.3868	.3256	.3663	.0407
6.....	18,824	23,407	24.0	.3900	.3145	.3580	.0435
7.....	3,854	4,168	8.2	.3523	.3256	.3533	.0277
8.....	2,963	3,196	7.8	.3611	.3350	.3533	.0183
9.....	17,210	20,259	17.6	.4000	.3398	.3675	.0277
10.....	(1)	(1)	(1)	.4000	(1)	.3585	(1)
11.....	10,490	12,138	15.7	.3986	.3445	.3674	.0229
12.....	13,949	16,789	20.3	.4100	.3407	.3602	.0195
13.....	28,278	33,637	19.0	.4200	.3529	.3530	.0001
14.....	12,172	14,990	23.2	3.3800	3.3085	.3534	4.0449
15.....	33,465	41,073	22.7	.4000	.3260	.3547	.0287
16.....	90,457	111,429	23.2	.3332	.2705	5.3453	5.0748

¹ Not reported.² Sold direct to consumer.³ Price paid farmer after deducting cost of gathering cream, not separately reported.⁴ Including cost of gathering cream, not separately reported.⁵ Sold direct to retailers.

A few of the creameries kept no record of some of the items presented in the tables and a small number handled their commodities on a plan differing from the usual custom. Of the latter class, Creamery No. 4 sold the output direct to consumers for all the months, and No. 16 sold largely to retailers in June and December, 1910 and 1911. All the others followed the prevailing plan of selling to wholesalers or commission houses. No. 13 bought cream by the inch in June and December, 1904, while in the other months it bought cream or milk by the pound of butter fat contained; all the other creameries bought on the basis of butter fat for all the months considered.

Creameries numbered 1, 2, 4, and 13 settled accounts of farmers who supplied butter fat on the basis of the amount of butter made

and sold, which indicates the price of the fat in 1 pound of butter. No. 10 reported the price of butter fat per pound, but furnished no records of overrun, amount of fat bought, or amount of butter made and sold, hence there was no basis on which to calculate for this plant the price of fat in 1 pound of butter.

The average creamery margin per pound is shown in the last column of the table. This, as has been explained, is the difference between the price paid by the creamery for the butter fat in a pound of butter and the price received by the creamery for a pound of butter. In the cooperative creameries (Nos. 9 to 15, inclusive) the margin represents the cost of making and selling the butter, including the salaries and wages of officials and employees, and all expenses of operating the factory. For other than cooperative creameries the margin covers the cost of making, the expense of running the factory, and the profit to the owners and operators of the establishment.

The table shows considerable variation in prices and margins, which may be accounted for, in some measure, by differences in operating expenses, overrun, competition, and distance from market. As certain data were not available for some of the creameries and averages for the various periods based on other than identical creameries are not strictly comparable, only those creameries reporting all the items for each period were considered in computing average prices of butter fat and butter, and average creamery margins.

For 10 creameries (Nos. 3, 5, 6, 7, 8, 9, 11, 12, 14, and 15) prices of butter fat and of butter were reported and for 9 of these creameries figures showing the total quantity of butter fat bought and of butter made therefrom were obtained, which furnished a basis for the calculation of the average percentage of overrun. Creamery No. 3 did not report the pounds of butter fat bought or of butter made, but reported the average percentage of overrun for each of the periods.

In Table III, which follows, is presented a summary of the data for the 10 creameries. These creameries are normal plants whose operations have extended over a number of years, and their size is indicated by the amount of output. They represent the prevailing type of creameries in the country, 5 being what are termed individual creameries—that is, those conducted by private individuals, companies, or corporations, and 5 cooperative creameries. For comparative purposes the two types are grouped separately. The prices and margins shown are believed to be fairly representative of prices and margins in the various sections in which the creameries are located. The output shown is for single creameries only and can not be taken as indicating the relative size of the output in the various sections. Hence simple averages of prices and margins are presented for the groups and for the 10 creameries combined, without taking into consideration the size of their output.

TABLE III.—AVERAGE CREAMERY PRICES AND MARGINS FOR 10 CREAMERIES FROM WHICH COMPLETE REPORTS WERE OBTAINED, BY CLASS OF CREAMERY, JUNE AND DECEMBER, 1904, 1910, AND 1911.

Class of creamery and period.	Pounds of butter fat bought.	Pounds of butter made therefrom.	Average per cent of overrun.	Average price paid for butter fat delivered at creamery.		Average price per pound f. o. b. received by creamery for butter.	Average creamery margin per pound
				Per pound.	In one pound of butter.		
JUNE, 1904.							
Individual creameries:							
No. 3.....	(¹)	(¹)	13.0	\$0.1775	\$0.1576	\$0.1726	\$0.0150
No. 5.....	54,194	63,293	16.8	.1699	.1455	.1767	.0312
No. 6.....	23,302	26,467	13.6	.1630	.1435	.1810	.0375
No. 7.....	20,113	21,912	8.9	.1640	.1505	.1750	.0245
No. 8.....	13,059	13,654	4.5	.1521	.1455	.1750	.0295
Average.....				.1653	.1485	.1761	.0275
Cooperative creameries:							
No. 9.....	32,876	39,077	18.9	.1900	.1598	.1713	.0115
No. 11.....	17,329	18,983	10.3	.1574	.1467	.1692	.0225
No. 12.....	13,791	16,219	17.6	.1900	.1531	.1667	.0136
No. 14.....	13,711	16,382	19.5	² .1500	² .1255	.1618	³ .0363
No. 15.....	83,501	90,116	7.9	.1704	.1579	.1713	.0134
Average.....				.1696	.1486	.1681	.0195
Average (10 creameries)...				.1674	.1486	.1721	.0235
DECEMBER, 1904.							
Individual creameries:							
No. 3.....	(¹)	(¹)	19.0	.3000	.2527	.2680	.0153
No. 5.....	18,440	21,549	17.3	.2730	.2330	.2687	.0357
No. 6.....	12,408	14,333	15.5	.2640	.2286	.2750	.0464
No. 7.....	5,655	6,191	9.5	.2616	.2389	.2700	.0311
No. 8.....	3,573	3,856	7.9	.2484	.2302	.2700	.0398
Average.....				.2694	.2367	.2703	.0337
Cooperative creameries:							
No. 9.....	16,278	19,133	17.6	.2900	.2467	.2651	.0184
No. 11.....	7,091	7,601	10.5	.2576	.2338	.2590	.0252
No. 12.....	4,361	5,072	16.3	.2600	.2237	.2574	.0337
No. 14.....	5,325	6,413	20.4	² .2200	² .1826	.2537	³ .0711
No. 15.....	38,556	42,638	10.6	.2707	.2448	.2659	.0211
Average.....				.2597	.2263	.2602	.0339
Average (10 creameries)...				.2645	.2315	.2653	.0338
JUNE, 1910.							
Individual creameries:							
No. 3.....	(¹)	(¹)	15.8	.2950	.2571	.2715	.0144
No. 5.....	47,846	55,089	15.1	.2900	.2521	.2773	.0252
No. 6.....	53,030	64,029	20.7	.3000	.2486	.2780	.0294
No. 7.....	7,039	7,779	10.5	.2823	.2555	.2717	.0162
No. 8.....	14,687	16,744	14.0	.2844	.2496	.2717	.0221
Average.....				.2903	.2526	.2740	.0215
Cooperative creameries:							
No. 9.....	38,440	47,994	24.9	.3500	.2802	.2882	.0080
No. 11.....	24,342	29,955	23.0	.3173	.2579	.2733	.0154
No. 12.....	37,878	46,190	21.9	.3250	.2666	.2821	.0155
No. 14.....	25,542	30,730	20.3	² .2800	² .2327	.2649	³ .0322
No. 15.....	78,417	97,126	23.9	.3146	.2539	.2794	.0255
Average.....				.3174	.2583	.2776	.0193
Average (10 creameries)...				.3039	.2554	.2758	.0204

¹ Not reported.² Price paid farmer after deducting cost of gathering cream, not separately reported.³ Including cost of gathering cream, not separately reported.

TABLE III.—AVERAGE CREAMERY PRICES AND MARGINS FOR 10 CREAMERIES FROM WHICH COMPLETE REPORTS WERE OBTAINED, BY CLASS OF CREAMERY, JUNE AND DECEMBER, 1904, 1910, AND 1911—Concluded.

Class of creamery and period.	Pounds of butter fat bought.	Pounds of butter made therefrom.	Average per cent of overrun.	Average price paid for butter fat delivered at creamery.		Average price per pound f. o. b. received by creamery for butter.	Average creamery margin per pound.
				Per pound.	In one pound of butter.		
DECEMBER, 1910.							
Individual creameries:							
No. 3.....	(1)	(1)	18.0	\$0.3300	\$0.2800	\$0.2986	\$0.0186
No. 5.....	23,044	27,719	20.4	.3142	.2611	.2982	.0371
No. 6.....	23,264	28,192	21.4	.3230	.2661	.3030	.0369
No. 7.....	2,983	3,412	14.4	.3101	.2712	.2966	.0254
No. 8.....	3,459	4,065	17.5	.2988	.2542	.2967	.0425
Average.....				.3152	.2665	.2986	.0321
Cooperative creameries:							
No. 9.....	21,225	25,620	20.5	.3400	.2813	.2965	.0152
No. 11.....	12,000	14,506	20.9	.3180	.2631	.2849	.0218
No. 12.....	16,507	20,591	24.7	.3600	.2906	.3031	.0125
No. 14.....	12,816	15,839	23.6	2 .3100	2 .2508	2 .2887	2 .0379
No. 15.....	47,451	58,762	23.8	.3266	.2638	.2830	.0192
Average.....				.3309	.2699	.2912	.0213
Average (10 creameries).....				.3231	.2682	.2949	.0267
JUNE, 1911.							
Individual creameries:							
No. 3.....	(1)	(1)	17.4	.2500	.2129	.2244	.0115
No. 5.....	56,756	71,722	26.3	.2358	.1867	.2332	.0465
No. 6.....	49,629	60,387	21.7	.2390	.1964	.2280	.0316
No. 7.....	11,034	12,651	14.1	.2219	.1945	.2233	.0288
No. 8.....	13,439	15,178	12.9	.2338	.2070	.2233	.0163
Average.....				.2361	.1995	.2264	.0269
Cooperative creameries:							
No. 9.....	38,527	45,477	18.8	.2700	.2287	.2406	.0119
No. 11.....	26,234	31,825	21.3	.2683	.2211	.2353	.0142
No. 12.....	36,777	44,617	21.3	.2650	.2184	.2322	.0138
No. 14.....	26,774	32,065	19.8	2 .2300	2 .1920	2 .2225	2 .0305
No. 15.....	78,606	92,855	18.1	.2690	.2202	.2330	.0128
Average.....				.2587	.2162	.2327	.0167
Average (10 creameries).....				.2474	.2078	.2296	.0218
DECEMBER, 1911.							
Individual creameries:							
No. 3.....	(1)	(1)	18.0	.4025	.3411	.3560	.0149
No. 5.....	24,978	29,625	18.8	.3868	.3256	.3663	.0407
No. 6.....	18,824	23,407	24.0	.3900	.3145	.3580	.0435
No. 7.....	3,854	4,168	8.2	.3523	.3256	.3533	.0277
No. 8.....	2,963	3,196	7.8	.3611	.3350	.3533	.0183
Average.....				.3785	.3284	.3574	.0290
Cooperative creameries:							
No. 9.....	17,210	20,259	17.6	.4000	.3398	.3675	.0277
No. 11.....	10,490	12,138	15.7	.3986	.3445	.3674	.0229
No. 12.....	13,949	16,789	20.3	.4100	.3407	.3602	.0195
No. 14.....	12,172	14,990	23.2	2 .3800	2 .3085	2 .3534	2 .0449
No. 15.....	33,465	41,073	22.7	.4000	.3260	.3547	.0287
Average.....				.3977	.3319	.3606	.0287
Average (10 creameries).....				.3881	.3301	.3590	.0289

1 Not reported.
 2 Price paid farmer after deducting cost of gathering cream, not separately reported.
 3 Including cost of gathering cream, not separately reported.

An analysis of the figures for one of the periods may be of assistance in understanding the table. In June, 1904, for instance, the average price received by the 10 creameries for butter was 17.21 cents, which is theoretically the price the farmers would have received if they had made the butter at home of as good quality as the creameries produced, had found as good a market for it as the creameries found, and had hauled it to the railroad station to start it to its destination. By dealing with the creamery they were relieved of the work and care of making the butter, the anxiety about the quality, the trouble of finding a market, and the labor of hauling to the shipping station. The creamery took the butter fat, made it into butter, and found a market for it at a charge of 2.35 cents per pound, or 13.7 per cent on the selling price of the product, yielding farmers 14.86 cents for the fat in one pound of butter, or 14.86 cents per pound for unmade butter, which was at the rate of 16.74 cents per pound for butter fat.

An interesting fact brought out by this table is that while the prices of butter fat and of butter have increased in later years the average creamery margin was lower for each month in 1910 and 1911 than for the corresponding month in 1904. This margin varied from a maximum of 3.38 cents in December, 1904, to a minimum of 2.02 cents in June, 1910. In every year the December margin exceeded that for June, due mainly to the decrease in volume of business during the winter months.

The table shows that in each creamery the amount of butter fat bought and of butter made in December was much less than the amount reported for June in each of the years, in some instances being less than one-half. A marked increase in overrun in the several creameries is indicated for 1910 and 1911 as compared with 1904. In buying butter fat and selling butter competition is generally so keen that the prices are held to a considerable degree of uniformity, but there is considerable variation in the overrun obtained and in expenses of operation. These items have such an influence that the creamery margins vary widely, whether they mean the expense of making, as in the cooperative factories, or the amount apportioned between the expenses of making and the profit and loss, as in the individual or centralizer creameries. Upon these margins and the ability of the management to make them narrow enough to come within the difference between the prices of butter fat and the prices of butter established by supply and demand depend the success of the creamery.

PRICES AND MARGINS ON VARIOUS LOTS OF BUTTER FROM CREAMERY TO RETAILER.

While it was possible, as shown in the above table, to ascertain for specific quantities of butter the average price paid the farmer for the butter fat contained in each pound of butter, the margin received by the creamery for making and marketing the butter, and the price received by the creamery for the butter, it was not possible to trace all these quantities through the various handlings from the creamery to the retailer. On the other hand data were obtained from retail dealers in several cities which made it possible to trace back to the creameries the prices, margins, and other charges on various lots of butter bought by the retailers. These data are shown in Tables IV and V which present the information in detail and in summary form, respectively.

The lots covered consisted of tub butter handled by retailers in Chicago and Philadelphia, print butter handled by retailers in Cleveland and Pittsburgh, and both tub and print butter handled in Cincinnati, and were bought from creameries included in the preceding tables. It was not practicable to get data for the same days in the month for the various cities nor to show the quantities handled, but price records were obtained of lots handled at periods sufficiently distributed throughout the month to represent average conditions. While average creamery prices based on figures thus obtained can not be expected to correspond exactly with averages based on the entire fortnightly, semimonthly, or monthly output of butter in all kinds of packages for a number of creameries, as shown in preceding tables, they do not vary greatly from such averages, as may be seen by a comparison of the summaries in Tables III and V.

Table IV, which follows, shows in order the price per pound f. o. b. shipping station, charges for freight and for cartage, gross price paid by the wholesaler or receiver, the latter's margin and his price to the retailer, the retailer's margin, the price paid by the consumer, and the total margin between the creamery and the consumer, for each lot of butter reported, together with averages for tub and for print butter lots in the several periods in the specified cities.

TABLE IV.—PRICES AND MARGINS FROM CREAMERY TO CONSUMER ON VARIOUS LOTS OF TUB AND PRINT BUTTER HANDLED BY RETAILERS IN SELECTED CITIES, JUNE AND DECEMBER, 1904, 1910, AND 1911.

CHICAGO.

	Price per pound f. o. b. shipping station.	Charges per pound for—		Gross price per pound paid by wholesale receiver.	Re-ceiver's margin per pound.	Price per pound to re-tailers.	Re-tailer's margin per pound.	Price per pound to con-sumers.	Total margin from shipper to con-sumer.
		Freight.	Cartage.						
JUNE, 1904.									
Tub butter:									
Lot No. 1.....	\$0.1650	\$0.0030	\$0.0006	\$0.1686	\$0.0164	\$0.1850	\$0.0450	\$0.2300	\$0.0650
Lot No. 2.....	.1650	.0030	.0006	.1686	.0164	.1850	.0450	.2300	.0650
Lot No. 3.....	.1650	.0030	.0006	.1686	.0164	.1850	.0450	.2300	.0650
Lot No. 4.....	.1650	.0030	.0006	.1686	.0164	.1850	.0450	.2300	.0650
Average.....	.1650	.0030	.0006	.1686	.0164	.1850	.0450	.2300	.0650
DECEMBER, 1904.									
Tub butter:									
Lot No. 1.....	.2450	.0030	.0006	.2486	.0164	.2650	.0350	.3000	.0550
Lot No. 2.....	.2600	.0030	.0006	.2636	.0114	.2750	.0450	.3200	.0600
Lot No. 3.....	.2600	.0030	.0006	.2636	.0164	.2800	.0500	.3300	.0700
Lot No. 4.....	.2700	.0030	.0006	.2736	.0164	.2900	.0500	.3400	.0700
Average.....	.2588	.0030	.0006	.2624	.0151	.2775	.0450	.3225	.0637
JUNE, 1910.									
Tub butter:									
Lot No. 1.....	.2750	.0030	.0006	.2786	.0164	.2950	.0450	.3400	.0650
Lot No. 2.....	.2650	.0030	.0006	.2686	.0164	.2850	.0350	.3200	.0550
Lot No. 3.....	.2650	.0030	.0006	.2686	.0164	.2850	.0350	.3200	.0550
Lot No. 4.....	.2700	.0030	.0006	.2736	.0164	.2900	.0300	.3200	.0550
Average.....	.2688	.0030	.0006	.2724	.0164	.2888	.0362	.3250	.0562
DECEMBER, 1910.									
Tub butter:									
Lot No. 1.....	.2850	.0030	.0006	.2886	.0164	.3050	.0550	.3600	.0750
Lot No. 2.....	.2850	.0030	.0006	.2886	.0264	.3150	.0450	.3600	.0750
Lot No. 3.....	.2950	.0030	.0006	.2986	.0164	.3150	.0450	.3600	.0650
Lot No. 4.....	.2950	.0030	.0006	.2986	.0164	.3150	.0450	.3600	.0650
Average.....	.2900	.0030	.0006	.2936	.0189	.3125	.0475	.3600	.0700
JUNE, 1911.									
Tub butter:									
Lot No. 1.....	.2250	.0030	.0006	.2286	.0164	.2450	.0350	.2800	.0550
Lot No. 2.....	.2125	.0030	.0006	.2161	.0139	.2300	.0400	.2700	.0575
Lot No. 3.....	.2150	.0030	.0006	.2186	.0164	.2350	.0350	.2700	.0550
Lot No. 4.....	.2250	.0030	.0006	.2286	.0164	.2450	.0350	.2800	.0550
Average.....	.2194	.0030	.0006	.2230	.0158	.2388	.0362	.2750	.0556
DECEMBER, 1911.									
Tub butter:									
Lot No. 1.....	.3450	.0030	.0006	.3486	.0164	.3650	.0350	.4000	.0550
Lot No. 2.....	.3550	.0030	.0006	.3586	.0164	.3750	.0450	.4200	.0650
Lot No. 3.....	.3450	.0030	.0006	.3486	.0164	.3650	.0350	.4000	.0550
Lot No. 4.....	.3550	.0030	.0006	.3586	.0164	.3750	.0450	.4200	.0650
Average.....	.3500	.0030	.0006	.3536	.0164	.3700	.0400	.4100	.0600

TABLE IV.—PRICES AND MARGINS FROM CREAMERY TO CONSUMER ON VARIOUS LOTS OF TUB AND PRINT BUTTER HANDLED BY RETAILERS IN SELECTED CITIES, JUNE AND DECEMBER, 1904, 1910, AND 1911—Continued.

CINCINNATI.

	Price per pound f. o. b. shipping station.	Charges per pound for—		Gross price per pound paid by wholesale receiver.	Re-ceiver's margin per pound.	Price per pound to re-tailers.	Re-tailer's margin per pound.	Price per pound to con-sumers.	Total margin from shipper to con-sumer.
		Freight.	Cartage.						
JUNE, 1904.									
Tub butter:									
Lot No. 1.....	\$0.1750	\$0.0059	\$0.0004	\$0.1813	\$0.0137	\$0.1950	\$0.0550	\$0.2500	\$0.0750
Lot No. 2.....	.1750	.0059	.0004	.1813	.0137	.1950	.0550	.2500	.0750
Lot No. 3.....	.1750	.0059	.0004	.1813	.0137	.1950	.0350	.2300	.0550
Average.....	.1750	.0059	.0004	.1813	.0137	.1950	.0483	.2433	.0683
Print butter: 1 lot.....	.1825	.0056	.0003	.1884	.0116	.2000	.0500	.2500	.0675
DECEMBER, 1904.									
Tub butter:									
Lot No. 1.....	.2650	.0059	.0005	.2714	.0136	.2850	.0350	.3200	.0550
Lot No. 2.....	.2700	.0059	.0005	.2764	.0136	.2900	.0400	.3300	.0600
Lot No. 3.....	.2650	.0059	.0005	.2714	.0136	.2850	.0350	.3200	.0550
Lot No. 4.....	.2700	.0059	.0005	.2764	.0136	.2900	.0400	.3300	.0600
Lot No. 5.....	.2650	.0059	.0005	.2714	.0136	.2850	.0450	.3300	.0650
Average.....	.2670	.0059	.0005	.2734	.0136	.2870	.0390	.3260	.0590
Print butter:									
Lot No. 1.....	.2725	.0056	.0003	.2784	.0116	.2900	.0300	.3200	.0475
Lot No. 2.....	.2775	.0056	.0003	.2834	.0116	.2950	.0250	.3200	.0425
Lot No. 3.....	.2875	.0056	.0003	.2934	.0116	.3050	.0350	.3400	.0525
Average.....	.2792	.0056	.0003	.2851	.0116	.2967	.0300	.3267	.0475
JUNE, 1910.									
Tub butter:									
Lot No. 1.....	.2700	.0059	.0005	.2764	.0186	.2950	.0550	.3500	.0800
Lot No. 2.....	.2750	.0059	.0005	.2814	.0186	.3000	.0500	.3500	.0750
Lot No. 3.....	.2750	.0059	.0005	.2814	.0186	.3000	.0400	.3400	.0650
Lot No. 4.....	.2700	.0059	.0005	.2764	.0186	.2950	.0550	.3500	.0800
Lot No. 5.....	.2750	.0059	.0005	.2814	.0186	.3000	.0500	.3500	.0750
Average.....	.2730	.0059	.0005	.2794	.0186	.2980	.0500	.3480	.0750
Print butter, in cartons:									
Lot No. 1.....	.2825	.0056	.0003	.2884	.0166	.3050	.0450	.3500	.0675
Lot No. 2.....	.2875	.0056	.0003	.2934	.0166	.3100	.0400	.3500	.0625
Average.....	.2850	.0056	.0003	.2909	.0166	.3075	.0425	.3500	.0650
DECEMBER, 1910.									
Tub butter:									
Lot No. 1.....	.3000	.0059	.0005	.3064	.0186	.3250	.0550	.3800	.0800
Lot No. 2.....	.3000	.0059	.0005	.3064	.0186	.3250	.0550	.3800	.0800
Lot No. 3.....	.2900	.0059	.0005	.2964	.0186	.3150	.0650	.3800	.0900
Lot No. 4.....	.3000	.0059	.0005	.3064	.0186	.3250	.0550	.3800	.0800
Lot No. 5.....	.3000	.0059	.0005	.3064	.0186	.3250	.0550	.3800	.0800
Average.....	.2980	.0059	.0005	.3044	.0186	.3230	.0570	.3800	.0820
Print butter, 1 lot, in cartons.	.3000	.0056	.0003	.3059	.0166	.3225	.0575	.3800	.0800

TABLE IV.—PRICES AND MARGINS FROM CREAMERY TO CONSUMER ON VARIOUS LOTS OF TUB AND PRINT BUTTER HANDLED BY RETAILERS IN SELECTED CITIES, JUNE AND DECEMBER, 1904, 1910, AND 1911—Continued.

CINCINNATI—Concluded.

	Price per pound f. o. b. shipping station.	Charges per pound for—		Gross price per pound paid by wholesale receiver.	Receiver's margin per pound.	Price per pound to retailers.	Retailer's margin per pound.	Price per pound to consumers.	Total margin from shipper to consumer.
		Freight.	Cartage.						
JUNE, 1911.									
Tub butter:									
Lot No. 1.....	\$0.2200	\$0.0059	\$0.0005	\$0.2264	\$0.0186	\$0.2450	\$0.0550	\$9.3000	\$0.0800
Lot No. 2.....	.2300	.0059	.0005	.2364	.0186	.2550	.0550	.3100	.0800
Lot No. 3.....	.2300	.0059	.0005	.2364	.0186	.2550	.0450	.3000	.0700
Lot No. 4.....	.2150	.0059	.0005	.2214	.0186	.2400	.0600	.3000	.0850
Lot No. 5.....	.2200	.0059	.0005	.2264	.0186	.2450	.0550	.3000	.0800
Lot No. 6.....	.2300	.0059	.0005	.2364	.0186	.2550	.0450	.3000	.0700
Average.....	.2242	.0059	.0005	.2306	.0186	.2492	.0525	.3017	.0775
Print butter, in cartons:									
Lot No. 1.....	.2425	.0056	.0003	.2484	.0166	.2650	.0350	.3000	.0575
Lot No. 2.....	.2425	.0056	.0003	.2484	.0166	.2650	.0350	.3000	.0575
Average.....	.2425	.0056	.0003	.2484	.0166	.2650	.0350	.3000	.0575
DECEMBER, 1911.									
Tub butter:									
Lot No. 1.....	.3500	.0059	.0005	.3564	.0186	.3750	.0550	.4300	.0800
Lot No. 2.....	.3600	.0059	.0005	.3664	.0186	.3850	.0550	.4400	.0800
Lot No. 3.....	.3500	.0059	.0005	.3564	.0186	.3750	.0550	.4300	.0800
Lot No. 4.....	.3500	.0059	.0005	.3564	.0186	.3750	.0550	.4300	.0800
Lot No. 5.....	.3600	.0059	.0005	.3664	.0186	.3850	.0550	.4500	.0900
Lot No. 6.....	.3600	.0059	.0005	.3664	.0186	.3850	.0550	.4500	.0900
Average.....	.3550	.0059	.0005	.3614	.0186	.3800	.0583	.4383	.0833
Print butter, in cartons:									
Lot No. 1.....	.3625	.0056	.0003	.3684	.0166	.3850	.0550	.4400	.0775
Lot No. 2.....	.3725	.0056	.0003	.3784	.0166	.3950	.0550	.4500	.0775
Average.....	.3675	.0056	.0003	.3734	.0166	.3900	.0550	.4450	.0775

PHILADELPHIA.

JUNE, 1904.									
Tub butter:									
Lot No. 1.....	\$0.1700	\$0.0114	(1)	\$0.1814	\$0.0136	\$0.1950	\$0.0550	\$0.2500	\$0.0800
Lot No. 2.....	.1700	.0114	(1)	.1814	.0136	.1950	.0550	.2500	.0800
Lot No. 3.....	.1700	.0114	(1)	.1814	.0136	.1950	.0550	.2500	.0800
Lot No. 4.....	.1700	.0114	(1)	.1814	.0136	.1950	.0550	.2500	.0800
Average.....	.1700	.0114	(1)	.1814	.0136	.1950	.0550	.2500	.0800
DECEMBER, 1904.									
Tub butter:									
Lot No. 1.....	.2450	.0114	(1)	.2564	.0286	.2850	.0450	.3300	.0850
Lot No. 2.....	.2450	.0114	(1)	.2564	.0286	.2850	.0450	.3300	.0850
Lot No. 3.....	.2600	.0114	(1)	.2714	.0286	.2950	.0550	.3500	.0900
Lot No. 4.....	.2650	.0114	(1)	.2764	.0286	.3050	.0450	.3500	.0850
Average.....	.2538	.0114	(1)	.2652	.0273	.2925	.0475	.3400	.0862
JUNE, 1910.									
Tub butter:									
Lot No. 1.....	.2775	.0114	(1)	.2889	.0111	.3000	.0400	.3400	.0625
Lot No. 2.....	.2750	.0114	(1)	.2864	.0136	.3000	.0400	.3400	.0650
Lot No. 3.....	.2750	.0114	(1)	.2864	.0136	.3000	.0500	.3500	.0750
Lot No. 4.....	.2750	.0114	(1)	.2864	.0136	.3000	.0500	.3500	.0750
Average.....	.2756	.0114	(1)	.2870	.0130	.3000	.0450	.3450	.0694

1 Hauled by receiver's teams.

TABLE IV.—PRICES AND MARGINS FROM CREAMERY TO CONSUMER ON VARIOUS LOTS OF TUB AND PRINT BUTTER HANDLED BY RETAILERS IN SELECTED CITIES, JUNE AND DECEMBER, 1904, 1910, AND 1911—Continued.

PHILADELPHIA—Concluded.

	Price per pound f. o. b. shipping station.	Charges per pound for—		Gross price per pound paid by wholesale receiver.	Re-ceiver's margin per pound.	Price per pound to re-tailers.	Re-tailer's margin per pound.	Price per pound to con-sumers.	Total margin from shipper to con-sumer.
		Freight.	Cartage.						
DECEMBER, 1910.									
Tub butter:									
Lot No. 1.....	\$0.2950	\$0.0114	(¹)	\$0.3064	\$0.0186	\$0.3250	\$0.0550	\$0.3800	\$0.0850
Lot No. 2.....	.3025	.0114	(¹)	.3139	.0161	.3300	.0400	.3700	.0675
Lot No. 3.....	.3025	.0114	(¹)	.3139	.0161	.3300	.0400	.3700	.0675
Lot No. 4.....	.3025	.0114	(¹)	.3139	.0111	.3250	.0450	.3700	.0675
Average.....	.3006	.0114	(¹)	.3120	.0155	.3275	.0450	.3725	.0719
JUNE, 1911.									
Tub butter:									
Lot No. 1.....	.2175	.0114	(¹)	.2289	.0211	.2500	.0500	.3000	.0825
Lot No. 2.....	.2275	.0114	(¹)	.2389	.0161	.2550	.0550	.3100	.0825
Lot No. 3.....	.2350	.0114	(¹)	.2464	.0086	.2550	.0550	.3100	.0750
Lot No. 4.....	.2375	.0114	(¹)	.2489	.0111	.2600	.0600	.3200	.0825
Average.....	.2294	.0114	(¹)	.2408	.0142	.2550	.0550	.3100	.0806
DECEMBER, 1911.									
Tub butter:									
Lot No. 1.....	.3525	.0114	(¹)	.3639	.0186	.3825	.0475	.4300	.0775
Lot No. 2.....	.3525	.0114	(¹)	.3639	.0361	.4000	.0500	.4500	.0975
Lot No. 3.....	.3525	.0114	(¹)	.3639	.0361	.4000	.0500	.4500	.0975
Lot No. 4.....	.3625	.0114	(¹)	.3739	.0111	.3850	.0650	.4500	.0875
Average.....	.3550	.0114	(¹)	.3664	.0255	.3919	.0531	.4450	.0900

¹ Hauled by receiver's teams.

CLEVELAND.

JUNE, 1904.									
Print butter:									
Lot No. 1.....	\$0.1742	\$0.0089	\$0.0005	\$0.1836	\$0.0114	\$0.1950	\$0.0250	\$0.2200	\$0.0458
Lot No. 2.....	.1742	.0089	.0005	.1836	.0114	.1950	.0350	.2300	.0558
Lot No. 3.....	.1742	.0089	.0005	.1836	.0114	.1950	.0250	.2200	.0458
Lot No. 4.....	.1742	.0089	.0005	.1836	.0114	.1950	.0350	.2300	.0558
Lot No. 5.....	.1742	.0089	.0005	.1836	.0114	.1950	.0350	.2300	.0558
Lot No. 6.....	.1742	.0089	.0005	.1836	.0114	.1950	.0450	.2400	.0658
Lot No. 7.....	.1742	.0089	.0005	.1836	.0114	.1950	.0350	.2300	.0558
Lot No. 8.....	.1742	.0089	.0005	.1836	.0114	.1950	.0250	.2200	.0458
Average.....	.1742	.0089	.0005	.1836	.0114	.1950	.0325	.2275	.0533
DECEMBER, 1904.									
Print butter:									
Lot No. 1.....	.2614	.0089	.0005	.2708	.0142	.2850	.0350	.3200	.0586
Lot No. 2.....	.2661	.0089	.0005	.2755	.0145	.2900	.0400	.3300	.0639
Lot No. 3.....	.2614	.0089	.0005	.2708	.0142	.2850	.0150	.3000	.0386
Lot No. 4.....	.2661	.0089	.0005	.2755	.0145	.2900	.0300	.3200	.0539
Lot No. 5.....	.2614	.0089	.0005	.2708	.0142	.2850	.0250	.3100	.0486
Lot No. 6.....	.2614	.0089	.0005	.2708	.0142	.2850	.0350	.3200	.0586
Average.....	.2630	.0089	.0005	.2724	.0143	.2867	.0300	.3167	.0537

TABLE IV.—PRICES AND MARGINS FROM CREAMERY TO CONSUMER ON VARIOUS LOTS OF TUB AND PRINT BUTTER HANDLED BY RETAILERS IN SELECTED CITIES, JUNE AND DECEMBER, 1904, 1910, AND 1911—Continued.

CLEVELAND—Continued.

	Price per pound f. o. b. shipping station.	Charges per pound for—		Gross price per pound paid by wholesale receiver.	Re-ceiver's margin per pound.	Price per pound to re-tailers.	Re-tailer's margin per pound.	Price per pound to con-sumers.	Total margin from shipper to con-sumer.
		Freight.	Cartage.						
JUNE, 1910.									
Print butter:									
Lot No. 1.....	\$0.2709	\$0.0089	\$0.0005	\$0.2803	\$0.0197	\$0.3000	\$0.0400	\$0.3400	\$0.0691
Lot No. 2.....	.2756	.0089	.0005	.2850	.0200	.3050	.0450	.3500	.0744
Lot No. 3 ¹.....	.2709	.0089	.0005	.2803	.0197	.3000	.0500	.3500	.0791
Lot No. 4 ¹.....	.2756	.0089	.0005	.2850	.0200	.3050	.0450	.3500	.0744
Lot No. 5.....	.2709	.0089	.0005	.2803	.0197	.3000	.0300	.3300	.0591
Lot No. 6.....	.2756	.0089	.0005	.2850	.0200	.3050	.0250	.3300	.0544
Lot No. 7.....	.2709	.0089	.0005	.2803	.0197	.3000	.0400	.3400	.0691
Lot No. 8.....	.2709	.0089	.0005	.2803	.0197	.3000	.0500	.3500	.0791
Lot No. 9.....	.2756	.0089	.0005	.2850	.0200	.3050	.0450	.3500	.0744
Lot No. 10.....	.2756	.0089	.0005	.2850	.0200	.3050	.0450	.3500	.0744
Lot No. 11.....	.2709	.0089	.0005	.2803	.0197	.3000	.0300	.3300	.0591
Lot No. 12.....	.2709	.0089	.0005	.2803	.0197	.3000	.0500	.3500	.0791
Lot No. 13.....	.2756	.0089	.0005	.2850	.0200	.3050	.0350	.3400	.0644
Lot No. 14.....	.2709	.0089	.0005	.2803	.0197	.3000	.0400	.3400	.0691
Lot No. 15.....	.2756	.0089	.0005	.2850	.0200	.3050	.0450	.3500	.0744
Lot No. 16 ².....	.2709	.0089	.0005	.2803	.0197	.3000	.0500	.3500	.0791
Lot No. 17 ².....	.2756	.0089	.0005	.2850	.0200	.3050	.0550	.3600	.0844
Lot No. 18.....	.2756	.0089	.0005	.2850	.0200	.3050	.0450	.3500	.0744
Lot No. 19.....	.2809	.0089	.0005	.2903	.0197	.3100	.0300	.3400	.0591
Average.....	.2737	.0089	.0005	.2831	.0198	.3029	.0418	.3447	.0710
DECEMBER, 1910									
Print butter:									
Lot No. 1.....	.2994	.0089	.0005	.3088	.0162	.3250	.0350	.3600	.0606
Lot No. 2.....	.3075	.0089	.0005	.3169	.0181	.3350	.0350	.3700	.0625
Lot No. 3.....	.2994	.0089	.0005	.3088	.0162	.3250	.0450	.3700	.0706
Lot No. 4.....	.3075	.0089	.0005	.3169	.0181	.3350	.0450	.3800	.0725
Lot No. 5.....	.3075	.0089	.0005	.3169	.0162	.3250	.0450	.3700	.0706
Lot No. 6.....	.3075	.0089	.0005	.3169	.0181	.3350	.0450	.3800	.0725
Lot No. 7.....	.2994	.0089	.0005	.3088	.0162	.3250	.0450	.3700	.0706
Lot No. 8.....	.3075	.0089	.0005	.3169	.0181	.3350	.0450	.3800	.0725
Lot No. 9.....	.2994	.0089	.0005	.3088	.0162	.3250	.0450	.3700	.0706
Lot No. 10.....	.3075	.0089	.0005	.3169	.0181	.3350	.0350	.3700	.0625
Lot No. 11.....	.3075	.0089	.0005	.3169	.0181	.3350	.0350	.3700	.0625
Lot No. 12 ¹.....	.2994	.0089	.0005	.3088	.0162	.3250	.0550	.3800	.0806
Lot No. 13 ¹.....	.3075	.0089	.0005	.3169	.0181	.3350	.0550	.3900	.0825
Lot No. 14 ¹.....	.2994	.0089	.0005	.3088	.0162	.3250	.0650	.3900	.0906
Lot No. 15 ¹.....	.3075	.0089	.0005	.3169	.0181	.3350	.0550	.3900	.0825
Lot No. 16 ¹.....	.2994	.0089	.0005	.3088	.0162	.3250	.0550	.3800	.0806
Lot No. 17 ¹.....	.3075	.0089	.0005	.3169	.0181	.3350	.0550	.3900	.0825
Lot No. 18 ².....	.2994	.0089	.0005	.3088	.0162	.3250	.0550	.3800	.0806
Lot No. 19 ².....	.3075	.0089	.0005	.3169	.0181	.3350	.0550	.3900	.0825
Average.....	.3037	.0089	.0005	.3131	.0172	.3303	.0476	.3779	.0742
JUNE, 1911.									
Print butter:									
Lot No. 1.....	.2376	.0089	.0005	.2470	.0180	.2650	.0450	.3100	.0724
Lot No. 2.....	.2234	.0089	.0005	.2328	.0172	.2500	.0400	.2900	.0666
Lot No. 3.....	.2281	.0089	.0005	.2375	.0175	.2550	.0350	.2900	.0619
Lot No. 4.....	.2376	.0089	.0005	.2470	.0180	.2650	.0450	.3100	.0724
Lot No. 5.....	.2376	.0089	.0005	.2470	.0180	.2650	.0350	.3000	.0624
Lot No. 6.....	.2234	.0089	.0005	.2328	.0172	.2500	.0300	.2800	.0566
Lot No. 7.....	.2281	.0089	.0005	.2375	.0175	.2550	.0250	.2800	.0519
Lot No. 8.....	.2376	.0089	.0005	.2470	.0180	.2650	.0350	.3000	.0624
Lot No. 9.....	.2234	.0089	.0005	.2328	.0172	.2500	.0400	.2900	.0666
Lot No. 10.....	.2281	.0089	.0005	.2375	.0175	.2550	.0450	.3000	.0719
Lot No. 11.....	.2376	.0089	.0005	.2470	.0180	.2650	.0450	.3100	.0724
Lot No. 12.....	.2376	.0089	.0005	.2470	.0180	.2650	.0350	.3000	.0624
Lot No. 13.....	.2234	.0089	.0005	.2328	.0172	.2500	.0400	.2900	.0666
Lot No. 14.....	.2281	.0089	.0005	.2375	.0175	.2550	.0450	.3000	.0719

¹ Retailer inclosed wrapped prints in cartons costing \$3.50 per 1,000.² Retailer inclosed wrapped prints in cartons costing \$3 per 1,000.

TABLE IV.—PRICES AND MARGINS FROM CREAMERY TO CONSUMER ON VARIOUS LOTS OF TUB AND PRINT BUTTER HANDLED BY RETAILERS IN SELECTED CITIES, JUNE AND DECEMBER, 1904, 1910, AND 1911—Continued.

CLEVELAND—Concluded.

	Price per pound f. o. b. shipping station.	Charges per pound for—		Gross price per pound paid by wholesale receiver.	Re-ceiver's margin per pound.	Price per pound to re-tailers.	Re-tailer's margin per pound.	Price per pound to con-sumers.	Total margin from shipper to con-sumer.
		Freight.	Cartage.						
JUNE, 1911—concluded.									
Print butter—Concluded.									
Lot No. 15.....	\$. 2376	\$. 0089	\$. 0005	\$0. 2470	\$0. 0180	\$0. 2650	\$0. 0350	\$0. 3000	\$0. 0624
Lot No. 16.....	. 2376	. 0089	. 0005	. 2470	. 0180	. 2650	. 0250	. 2900	. 0524
Lot No. 17.....	. 2234	. 0089	. 0005	. 2328	. 0172	. 2500	. 0400	. 2900	. 0666
Lot No. 18.....	. 2281	. 0089	. 0005	. 2375	. 0175	. 2550	. 0350	. 2900	. 0619
Lot No. 19.....	. 2376	. 0089	. 0005	. 2470	. 0180	. 2650	. 0250	. 2900	. 0524
Lot No. 20.....	. 2376	. 0089	. 0005	. 2470	. 0180	. 2650	. 0350	. 3000	. 0624
Lot No. 21.....	. 2234	. 0089	. 0005	. 2328	. 0172	. 2500	. 0300	. 2800	. 0566
Lot No. 22.....	. 2281	. 0089	. 0005	. 2375	. 0175	. 2550	. 0350	. 2900	. 0619
Lot No. 23.....	. 2376	. 0089	. 0005	. 2470	. 0180	. 2650	. 0350	. 3000	. 0624
Lot No. 24 ¹.....	. 2234	. 0089	. 0005	. 2328	. 0172	. 2500	. 0600	. 3100	. 0866
Lot No. 25 ¹.....	. 2281	. 0089	. 0005	. 2375	. 0175	. 2550	. 0550	. 3100	. 0819
Lot No. 26 ¹.....	. 2376	. 0089	. 0005	. 2470	. 0180	. 2650	. 0550	. 3200	. 0824
Lot No. 27 ².....	. 2376	. 0089	. 0005	. 2470	. 0180	. 2650	. 0550	. 3200	. 0824
Lot No. 28 ².....	. 2234	. 0089	. 0005	. 2328	. 0172	. 2500	. 0500	. 3000	. 0766
Lot No. 29 ².....	. 2281	. 0089	. 0005	. 2375	. 0175	. 2550	. 0450	. 3000	. 0719
Lot No. 30 ².....	. 2376	. 0089	. 0005	. 2470	. 0180	. 2650	. 0550	. 3200	. 0824
Lot No. 31.....	. 2234	. 0089	. 0005	. 2328	. 0172	. 2500	. 0200	. 2700	. 0466
Lot No. 32.....	. 2281	. 0089	. 0005	. 2375	. 0175	. 2550	. 0350	. 2900	. 0619
Lot No. 33.....	. 2376	. 0089	. 0005	. 2470	. 0180	. 2650	. 0350	. 3000	. 0624
Lot No. 34 ³.....	. 2234	. 0089	. 0005	. 2328	. 0172	. 2500	. 0500	. 3000	. 0766
Lot No. 35 ³.....	. 2281	. 0089	. 0005	. 2375	. 0175	. 2550	. 0450	. 3000	. 0719
Lot No. 36 ³.....	. 2376	. 0089	. 0005	. 2470	. 0180	. 2650	. 0450	. 3100	. 0724
Average.....	. 2310	. 0089	. 0005	. 2404	. 0177	. 2581	. 0400	. 2981	. 0671
DECEMBER, 1911.									
Print butter:									
Lot No. 1.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0450	. 4300	. 0784
Lot No. 2.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0450	. 4400	. 0789
Lot No. 3.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0450	. 4300	. 0784
Lot No. 4.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0450	. 4400	. 0789
Lot No. 5.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0350	. 4200	. 0684
Lot No. 6.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0450	. 4400	. 0789
Lot No. 7.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0550	. 4400	. 0884
Lot No. 8.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0450	. 4400	. 0789
Lot No. 9.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0450	. 4300	. 0784
Lot No. 10.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0450	. 4400	. 0789
Lot No. 11.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0450	. 4300	. 0784
Lot No. 12.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0450	. 4400	. 0789
Lot No. 13.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0350	. 4200	. 0684
Lot No. 14.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0350	. 4300	. 0689
Lot No. 15.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0250	. 4100	. 0584
Lot No. 16.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0450	. 4300	. 0784
Lot No. 17.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0450	. 4400	. 0789
Lot No. 18.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0450	. 4300	. 0784
Lot No. 19.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0350	. 4300	. 0689
Lot No. 20.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0450	. 4400	. 0789
Lot No. 21 ¹.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0550	. 4400	. 0884
Lot No. 22 ¹.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0550	. 4500	. 0889
Lot No. 23 ¹.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0550	. 4400	. 0884
Lot No. 24 ¹.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0550	. 4400	. 0789
Lot No. 25 ¹.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0650	. 4600	. 0989
Lot No. 26 ¹.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0650	. 4500	. 0984
Lot No. 27 ¹.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0450	. 4300	. 0784
Lot No. 28 ¹.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0450	. 4400	. 0789
Lot No. 29 ¹.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0450	. 4300	. 0784
Lot No. 30 ¹.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0450	. 4400	. 0789
Lot No. 31 ³.....	. 3516	. 0089	. 0005	. 3610	. 0240	. 3850	. 0450	. 4300	. 0784
Lot No. 32 ³.....	. 3611	. 0089	. 0005	. 3705	. 0245	. 3950	. 0450	. 4400	. 0789
Average.....	. 3564	. 0089	. 0005	. 3658	. 0242	. 3900	. 0456	. 4356	. 0792

¹ Retailer inclosed wrapped prints in cartons costing \$3.50 per 1,000.
² Retailer inclosed wrapped prints in cartons costing \$2.75 per 1,000.
³ Retailer inclosed wrapped prints in cartons costing \$3 per 1,000.

TABLE IV.—PRICES AND MARGINS FROM CREAMERY TO CONSUMER ON VARIOUS LOTS OF TUB AND PRINT BUTTER HANDLED BY RETAILERS IN SELECTED CITIES, JUNE AND DECEMBER, 1904, 1910, AND 1911—Continued.

PITTSBURGH.

	Price per pound f. o. b. shipping station.	Charges per pound for—		Gross price per pound paid by wholesale receiver.	Re-ceiver's margin per pound.	Price per pound to re-tailers.	Re-tailer's margin per pound.	Price per pound to con-sumers.	Total margin from shipper to con-sumer.
		Freight.	Cartage.						
JUNE, 1904.									
Print butter:									
Lot No. 1.....	\$. 1850	\$. 0087	(1)	\$. 1937	\$. 0113	\$. 2050	\$. 0450	\$. 2500	\$. 0650
Lot No. 2.....	. 1850	. 0087	(1)	. 1937	. 0113	. 2050	. 0650	. 2700	. 0850
Lot No. 3.....	. 1850	. 0087	(1)	. 1937	. 0113	. 2050	. 0550	. 2600	. 0750
Lot No. 4.....	. 1850	. 0087	(1)	. 1937	. 0113	. 2050	. 0450	. 2500	. 0650
Lot No. 5.....	. 1850	. 0087	(1)	. 1937	. 0113	. 2050	. 0450	. 2500	. 0650
Average.....	. 1850	. 0087	(1)	. 1937	. 0113	. 2050	. 0510	. 2560	. 0710
DECEMBER, 1904.									
Print butter:									
Lot No. 1.....	. 2750	. 0087	(1)	. 2837	. 0113	. 2950	. 0350	. 3300	. 0550
Lot No. 2.....	. 2750	. 0087	(1)	. 2837	. 0113	. 2950	. 0350	. 3300	. 0550
Lot No. 3.....	. 2750	. 0087	(1)	. 2837	. 0113	. 2950	. 0350	. 3300	. 0550
Lot No. 4.....	. 2800	. 0087	(1)	. 2887	. 0113	. 3000	. 0500	. 3500	. 0700
Lot No. 5.....	. 2600	. 0087	(1)	. 2687	. 0113	. 2800	. 0500	. 3300	. 0700
Lot No. 6.....	. 2750	. 0087	(1)	. 2837	. 0113	. 2950	. 0550	. 3500	. 0750
Lot No. 7.....	. 2750	. 0087	(1)	. 2837	. 0113	. 2950	. 0550	. 3500	. 0750
Lot No. 8.....	. 2900	. 0087	(1)	. 2987	. 0113	. 3100	. 0500	. 3600	. 0700
Lot No. 9.....	. 2750	. 0087	(1)	. 2837	. 0113	. 2950	. 0350	. 3300	. 0550
Lot No. 10.....	. 2750	. 0087	(1)	. 2837	. 0113	. 2950	. 0350	. 3300	. 0550
Lot No. 11.....	. 2750	. 0087	(1)	. 2837	. 0113	. 2950	. 0350	. 3300	. 0550
Lot No. 12.....	. 2900	. 0087	(1)	. 2987	. 0113	. 3100	. 0400	. 3500	. 0600
Average.....	. 2767	. 0087	(1)	. 2854	. 0113	. 2967	. 0425	. 3392	. 0625
JUNE, 1910.									
Print butter:									
Lot No. 1.....	. 2900	. 0087	(1)	. 2989	. 0113	. 3100	. 0500	. 3600	. 0700
Lot No. 2.....	. 2800	. 0087	(1)	. 2887	. 0113	. 3000	. 0500	. 3500	. 0700
Lot No. 3.....	. 2800	. 0087	(1)	. 2887	. 0113	. 3000	. 0500	. 3500	. 0700
Lot No. 4.....	. 2850	. 0087	(1)	. 2937	. 0113	. 3050	. 0450	. 3500	. 0650
Lot No. 5.....	. 2900	. 0087	(1)	. 2987	. 0113	. 3100	. 0500	. 3600	. 0700
Lot No. 6.....	. 2800	. 0087	(1)	. 2887	. 0113	. 3000	. 0500	. 3500	. 0700
Lot No. 7.....	. 2800	. 0087	(1)	. 2887	. 0113	. 3000	. 0500	. 3500	. 0700
Lot No. 8.....	. 2800	. 0087	(1)	. 2887	. 0113	. 3000	. 0500	. 3500	. 0700
Lot No. 9.....	. 2850	. 0087	(1)	. 2937	. 0113	. 3050	. 0550	. 3600	. 0750
Lot No. 10.....	. 2900	. 0087	(1)	. 2987	. 0113	. 3100	. 0400	. 3500	. 0600
Lot No. 11.....	. 2800	. 0087	(1)	. 2887	. 0113	. 3000	. 0500	. 3500	. 0700
Lot No. 12.....	. 2800	. 0087	(1)	. 2887	. 0113	. 3000	. 0500	. 3500	. 0700
Lot No. 13.....	. 2850	. 0087	(1)	. 2937	. 0113	. 3050	. 0450	. 3500	. 0650
Average.....	. 2835	. 0087	(1)	. 2922	. 0113	. 3035	. 0488	. 3523	. 0688
DECEMBER, 1910.									
Print butter:									
Lot No. 1.....	. 3000	. 0087	(1)	. 3087	. 0113	. 3200	. 0500	. 3700	. 0700
Lot No. 2.....	. 3100	. 0087	(1)	. 3187	. 0113	. 3300	. 0400	. 3700	. 0600
Lot No. 3.....	. 3100	. 0087	(1)	. 3187	. 0113	. 3300	. 0400	. 3700	. 0600
Lot No. 4.....	. 3100	. 0087	(1)	. 3187	. 0113	. 3300	. 0400	. 3700	. 0600
Lot No. 5.....	. 3100	. 0087	(1)	. 3187	. 0113	. 3300	. 0600	. 3900	. 0800
Lot No. 6.....	. 3000	. 0087	(1)	. 3087	. 0113	. 3200	. 0600	. 3800	. 0800
Lot No. 7.....	. 3100	. 0087	(1)	. 3187	. 0113	. 3300	. 0500	. 3800	. 0700
Lot No. 8.....	. 3100	. 0087	(1)	. 3187	. 0113	. 3300	. 0500	. 3800	. 0700
Lot No. 9.....	. 3000	. 0087	(1)	. 3087	. 0113	. 3200	. 0600	. 3800	. 0800
Lot No. 10.....	. 3100	. 0087	(1)	. 3187	. 0113	. 3300	. 0500	. 3800	. 0700
Lot No. 11.....	. 3100	. 0087	(1)	. 3187	. 0113	. 3300	. 0500	. 3800	. 0700
Lot No. 12.....	. 3100	. 0087	(1)	. 3187	. 0113	. 3300	. 0500	. 3800	. 0700
Average.....	. 3075	. 0087	(1)	. 3162	. 0113	. 3275	. 0500	. 3775	. 0700

¹ Hauled by teams hired by the week for general hauling.

TABLE IV.—PRICES AND MARGINS FROM CREAMERY TO CONSUMER ON VARIOUS LOTS OF TUB AND PRINT BUTTER HANDLED BY RETAILERS IN SELECTED CITIES: JUNE AND DECEMBER, 1904, 1910, AND 1911—Concluded.

PITTSBURGH—Concluded.

	Price per pound f. o. b. shipping station.	Charges per pound for—		Gross price per pound paid by wholesale receiver.	Re-ceiver's margin per pound.	Price per pound to re-tailers.	Re-tailer's margin per pound.	Price per pound to con-sumers.	Total margin from shipper to con-sumer.
		Freight.	Cartage.						
JUNE, 1911.									
Print butter:									
Lot No. 1.....	\$0.2250	\$0.0087	(1)	\$0.2337	\$0.0113	\$0.2450	\$0.0550	\$0.3000	\$0.0750
Lot No. 2.....	.2300	.0087	(1)	.2387	.0113	.2500	.0500	.3000	.0700
Lot No. 3.....	.2400	.0087	(1)	.2487	.0113	.2600	.0600	.3200	.0800
Lot No. 4.....	.2400	.0087	(1)	.2487	.0113	.2600	.0400	.3000	.0600
Lot No. 5.....	.2400	.0087	(1)	.2487	.0113	.2600	.0500	.3100	.0700
Lot No. 6.....	.2250	.0087	(1)	.2337	.0113	.2450	.0550	.3000	.0750
Lot No. 7.....	.2400	.0087	(1)	.2487	.0113	.2600	.0500	.3100	.0700
Lot No. 8.....	.2400	.0087	(1)	.2487	.0113	.2600	.0500	.3100	.0700
Lot No. 9.....	.2300	.0087	(1)	.2387	.0113	.2500	.0500	.3000	.0700
Lot No. 10.....	.2400	.0087	(1)	.2487	.0113	.2600	.0400	.3000	.0600
Lot No. 11.....	.2400	.0087	(1)	.2487	.0113	.2600	.0400	.3000	.0600
Lot No. 12.....	.2400	.0087	(1)	.2487	.0113	.2600	.0400	.3000	.0600
Average.....	.2358	.0087	(1)	.2445	.0113	.2558	.0483	.3041	.0683
DECEMBER, 1911.									
Print butter:									
Lot No. 1.....	.3700	.0087	(1)	.3787	.0113	.3900	.0300	.4200	.0500
Lot No. 2.....	.3600	.0087	(1)	.3687	.0113	.3800	.0300	.4100	.0500
Lot No. 3.....	.3700	.0087	(1)	.3787	.0113	.3900	.0300	.4200	.0500
Lot No. 4.....	.3700	.0087	(1)	.3787	.0113	.3900	.0300	.4200	.0500
Lot No. 5.....	.3600	.0087	(1)	.3687	.0113	.3800	.0400	.4200	.0600
Lot No. 6.....	.3700	.0087	(1)	.3787	.0113	.3900	.0400	.4300	.0600
Lot No. 7.....	.3700	.0087	(1)	.3787	.0113	.3900	.0400	.4300	.0600
Lot No. 8.....	.3700	.0087	(1)	.3787	.0113	.3900	.0500	.4400	.0700
Lot No. 9.....	.3600	.0087	(1)	.3687	.0113	.3800	.0500	.4300	.0700
Lot No. 10.....	.3700	.0087	(1)	.3787	.0113	.3900	.0600	.4500	.0800
Lot No. 11.....	.3700	.0087	(1)	.3787	.0113	.3900	.0600	.4500	.0800
Lot No. 12.....	.3700	.0087	(1)	.3787	.0113	.3900	.0600	.4500	.0800
Average.....	.3675	.0087	(1)	.3762	.0113	.3875	.0433	.4308	.0633

¹ Hauled by teams hired by the week for general hauling.

To make the details of the table entirely clear an analysis is here given of the figures presented for the first period, June, 1904, in Chicago, tracing the items back from the consumer to the creamery. A retail dealer bought during the month four lots of tub butter from a wholesaler or receiver, who had bought them from creamery No. 3. The retailer paid the receiver 18.5 cents per pound for the butter and sold it to consumers for 23 cents, thus making a margin of 4.5 cents. The receiver had paid 16.86 cents gross per pound, thus making 1.64 cents margin. Deducting from the gross price (16.86 cents) paid by the receiver 0.3 cent per pound for freight charges and 0.06 cent for cartage, it is found that the creamery received 16.5 cents per pound for the butter f. o. b. shipping station. The total margin between the price paid the creamery f. o. b. shipping station and the price paid by the consumer was 6.5 cents per pound. The average price received by creamery No. 3 for total sales of butter packed in all the various forms during the month was 17.26 cents per pound, as may be seen

by reference to Tables I, II, and III. Other creameries are represented in the data presented for other cities, and in some of the cities data were obtained from several dealers.

In Table V, which follows, the averages in the preceding table for tub and print butter in the several cities are brought together and simple averages of tub and print butter combined are made for the various items in each of the periods. As before stated, the lots for which data are shown represent in each instance transactions distributed throughout the month, and the averages are believed to be fairly representative of creamery prices and margins from creamery to consumer in the seasons of low and high prices in the years shown.

TABLE V.—AVERAGE PRICES AND MARGINS FROM CREAMERY TO CONSUMER ON BUTTER HANDLED BY RETAILERS IN SELECTED CITIES, JUNE AND DECEMBER, 1904, 1910, AND 1911.

	Price per pound f. o. b. shipping station.	Charges per pound for—		Gross price per pound paid by wholesale receiver.	Receiver's margin per pound.	Price per pound to retailers.	Retailer's margin per pound.	Price per pound to consumers.	Total margin from shipper to consumer.
		Freight.	Cartage.						
JUNE, 1904.									
Tub butter:									
Chicago.....	\$0.1650	\$0.0030	\$0.0006	\$0.1686	\$0.0164	\$0.1850	\$0.0450	\$0.2300	\$0.0650
Cincinnati.....	.1750	.0059	.0004	.1813	.0137	.1950	.0483	.2433	.0683
Philadelphia.....	.1700	.0114	(¹)	.1814	.0136	.1950	.0550	.2500	.0800
Average, tub butter...	.1700	.0068	2.0003	.1771	.0146	.1917	.0494	.2411	.0711
Print butter:									
Cincinnati.....	.1825	.0056	.0003	.1884	.0116	.2000	.0500	.2500	.0675
Cleveland.....	.1742	.0089	.0005	.1836	.0114	.1950	.0325	.2275	.0533
Pittsburgh.....	.1850	.0087	(¹)	.1937	.0113	.2050	.0510	.2560	.0710
Average, print butter..	.1806	.0077	2.0003	.1886	.0114	.2000	.0445	.2445	.0639
Average tub and print combined.....	.1753	.0073	2.0003	.1828	.0130	.1958	.0470	.2428	.0675
DECEMBER, 1904.									
Tub butter:									
Chicago.....	.2588	.0030	.0006	.2624	.0151	.2775	.0450	.3225	.0637
Cincinnati.....	.2670	.0059	.0005	.2734	.0136	.2870	.0390	.3260	.0590
Philadelphia.....	.2538	.0114	(¹)	.2652	.0273	.2925	.0475	.3400	.0862
Average, tub butter...	.2599	.0068	2.0004	.2670	.0187	.2857	.0438	.3295	.0696
Print butter:									
Cincinnati.....	.2792	.0056	.0003	.2851	.0116	.2967	.0300	.3267	.0475
Cleveland.....	.2630	.0089	.0005	.2724	.0143	.2867	.0300	.3167	.0537
Pittsburgh.....	.2767	.0087	(¹)	.2854	.0113	.2967	.0425	.3392	.0625
Average, print butter..	.2730	.0077	2.0003	.2810	.0124	.2934	.0341	.3275	.0545
Average, tub and print combined.....	.2664	.0073	2.0003	.2740	.0155	.2895	.0390	.3285	.0621
JUNE, 1910.									
Tub butter:									
Chicago.....	.2688	.0030	.0006	.2724	.0164	.2888	.0362	.3250	.0562
Cincinnati.....	.2730	.0059	.0005	.2794	.0186	.2980	.0500	.3480	.0750
Philadelphia.....	.2756	.0114	(¹)	.2870	.0130	.3000	.0450	.3450	.0694
Average, tub butter...	.2725	.0068	2.0004	.2796	.0160	.2956	.0437	.3393	.0668

¹ Hauled by receiver's teams.

² Not including cartage in one city, not separately reported.

³ Not including cartage in two cities, not separately reported.

TABLE V.—AVERAGE PRICES AND MARGINS FROM CREAMERY TO CONSUMER ON BUTTER HANDLED BY RETAILERS IN SELECTED CITIES, JUNE AND DECEMBER, 1904, 1910, AND 1911.—Concluded.

	Price per pound f. o. b. shipping station.	Charges per pound for—		Gross price per pound paid by wholesale receiver.	Receiver's margin per pound.	Price per pound to retailers.	Retailer's margin per pound.	Price per pound to consumers.	Total margin from shipper to consumer.
		Freight.	Cartage.						
JUNE, 1910—concluded.									
Print butter:									
Cincinnati.....	\$0.2850	\$0.0056	\$0.0003	\$0.2909	\$0.0166	\$0.3075	\$0.0425	\$0.3500	\$0.0650
Cleveland.....	.2737	.0089	.0005	.2831	.0198	.3029	.0418	.3447	.0710
Pittsburgh.....	.2855	.0087	(1)	.2922	.0113	.3035	.0488	.3523	.0688
Average, print butter..	.2807	.0077	2.0003	.2887	.0159	.3046	.0444	.3490	.0683
Average, tub and print combined.....	.2766	.0073	3.0003	.2842	.0159	.3001	.0441	.3442	.0676
DECEMBER, 1910.									
Tub butter:									
Chicago.....	.2900	.0030	.0006	.2936	.0189	.3125	.0475	.3600	.0700
Cincinnati.....	.2980	.0059	.0005	.3044	.0186	.3230	.0570	.3800	.0820
Philadelphia.....	.3006	.0114	(1)	.3120	.0155	.3275	.0450	.3725	.0719
Average, tub butter...	.2962	.0068	2.0004	.3033	.0177	.3210	.0498	.3708	.0746
Print butter:									
Cincinnati.....	.3000	.0056	.0003	.3059	.0166	.3225	.0575	.3800	.0800
Cleveland.....	.3037	.0089	.0005	.3131	.0172	.3303	.0476	.3779	.0742
Pittsburgh.....	.3075	.0087	(1)	.3162	.0113	.3275	.0500	.3775	.0700
Average, print butter..	.3037	.0077	2.0003	.3117	.0150	.3267	.0517	.3784	.0747
Average, tub and print combined.....	.3000	.0073	3.0003	.3075	.0163	.3238	.0508	.3746	.0746
JUNE, 1911.									
Tub butter:									
Chicago.....	\$0.2194	\$0.0030	\$0.0006	\$0.2230	\$0.0158	\$0.2388	\$0.0362	\$0.2750	\$0.0556
Cincinnati.....	.2242	.0059	.0005	.2306	.0186	.2492	.0525	.3017	.0775
Philadelphia.....	.2294	.0114	(1)	.2408	.0142	.2550	.0550	.3100	.0806
Average, tub butter...	.2243	.0068	2.0004	.2315	.0162	.2477	.0479	.2956	.0713
Print butter:									
Cincinnati.....	.2425	.0056	.0003	.2484	.0166	.2650	.0350	.3000	.0575
Cleveland.....	.2310	.0089	.0005	.2404	.0177	.2581	.0400	.2981	.0671
Pittsburgh.....	.2358	.0087	(1)	.2445	.0113	.2558	.0483	.3041	.0683
Average, print butter..	.2364	.0077	2.0003	.2444	.0152	.2596	.0411	.3007	.0643
Average, tub and print combined.....	.2304	.0073	3.0003	.2380	.0157	.2537	.0445	.2982	.0678
DECEMBER, 1911.									
Tub butter:									
Chicago.....	.3500	.0030	.0006	.3536	.0164	.3700	.0400	.4100	.0600
Cincinnati.....	.3550	.0059	.0005	.3614	.0186	.3800	.0583	.4383	.0833
Philadelphia.....	.3550	.0114	(1)	.3664	.0255	.3919	.0531	.4450	.0900
Average, tub butter...	.3533	.0068	2.0004	.3605	.0201	.3806	.0505	.4311	.0778
Print butter:									
Cincinnati.....	.3675	.0056	.0003	.3734	.0166	.3900	.0550	.4450	.0775
Cleveland.....	.3564	.0089	.0005	.3658	.0242	.3900	.0456	.4356	.0792
Pittsburgh.....	.3675	.0087	(1)	.3762	.0113	.3875	.0433	.4308	.0633
Average, print butter..	.3638	.0077	2.0003	.3718	.0174	.3892	.0479	.4371	.0733
Average, tub and print combined.....	.3586	.0073	3.0003	.3662	.0187	.3849	.0492	.4341	.0755

¹ Hauled by receiver's teams.

² Not including cartage in one city, not separately reported.

³ Not including cartage in two cities, not separately reported.

WHOLESALE PRICES OF CREAMERY BUTTER, 1901 TO 1912, AND RETAIL PRICES, 1907 TO 1912.

In connection with the data as to butter prices in selected creameries presented in the preceding pages, two tables are here given, the first (Table VI) showing by months for each year from 1901 to 1912, inclusive, the average wholesale prices of creamery butter at the Elgin market and the second (Table VII) showing retail prices of creamery butter in certain Chicago establishments every second month from 1907 to 1910, and every month for 1911 and 1912. The figures in these tables are compiled from bulletins published by the United States Bureau of Labor Statistics.

TABLE VI.—AVERAGE MONTHLY AND YEARLY WHOLESALE PRICES OF CREAMERY BUTTER AT THE ELGIN MARKET, 1901 TO 1912.

[Figures compiled from reports on wholesale prices, Bulletins 39, 45, 51, 57, 63, 69, 75, 81, 87, 93, 99, and 114, of the United States Bureau of Labor Statistics.]

Month.	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
January	\$0.2200	\$0.2425	\$0.2725	\$0.2300	\$0.2900	\$0.2700	\$0.3063	\$0.3050	\$0.3125	\$0.3380	\$0.2720	\$0.3700
February .....	.2188	.2738	.2575	.2510	.3250	.2775	.3275	.3263	.2975	.2950	.2613	.2975
March .....	.2188	.2680	.2810	.2450	.2750	.2700	.3075	.2950	.2940	.3150	.2525	.2950
April .....	.2030	.2725	.2588	.2375	.2913	.2200	.3000	.2863	.2750	.3075	.2125	.3100
May .....	.1850	.2200	.2075	.1970	.2270	.1975	.2375	.2375	.2520	.2780	.2170	.2800
June .....	.1875	.2150	.2110	.1750	.2000	.1988	.2313	.2300	.2575	.2713	.2238	.2513
July .....	.1940	.2075	.1963	.1713	.2000	.2030	.2450	.2200	.2600	.2763	.2440	.2510
August .....	.2050	.1960	.1905	.1790	.2088	.2250	.2490	.2240	.2710	.2920	.2600	.2500
September .....	.2060	.2175	.2033	.1938	.2088	.2438	.2813	.2388	.3000	.2975	.2613	.2780
October .....	.2188	.2375	.2088	.2110	.2180	.2570	.2888	.2750	.3025	.2940	.2920	.2900
November .....	.2350	.2575	.2300	.2500	.2350	.2750	.2625	.2940	.3120	.3075	.3300	.3263
December .....	.2450	.2880	.2450	.2690	.2450	.3110	.2830	.3075	.3450	.2975	.3550	.3450
Average .....	.2114	.2413	.2302	.2178	.2429	.2459	.2761	.2692	.2893	.2977	.2644	.2968

TABLE VII.—RETAIL PRICES OF CREAMERY BUTTER IN CHICAGO EVERY SECOND MONTH, 1907 TO 1910, AND EVERY MONTH DURING 1911 AND 1912, BY FIRMS.

[Figures from Bulletins 105, 106, 108, 110, and 113 of the United States Bureau of Labor Statistics.]

Year and month.	Butter, creamery, per pound.						
	Print. Firm No. 703.	Tub. Firm No. 704.	Print. Firm No. 711.	Tub. Firm No. 718.	Print. Firm No. 720.	Print. Firm No. 721.	Tub. Firm No. 723.
1907.							
January		\$0.36	\$0.30	\$0.29	\$0.37	\$0.36	\$0.32
March .....		.36	.29	.32	.37	.37	.33
May .....		.30	.27	.29	.31	.31½	.28
July .....		.30	.26	.27	.30	.30	.27
September .....		.30	.30	.25	.33	.33½	.28
November .....		.33	.28	.28	.33	.33½	.32
1908.							
January .....		.35	.35	.31	.36	.37	.34
March .....		.35	.32	.30	.36	.37	.33
May .....		.30	.29	.29	.30	.30½	.30
July .....		.29	.30	.25	.29	.28	.26
September .....		.30	.33	.28	.29	.30	.27
November .....		.31	.34	.31	.35	.35½	.31
1909.							
January .....		.37	.30	.34	.36	.36½	.32
March .....		.35	.29	.33	.36	.35½	.30
May .....		.33	.28	.29	.32	.32	.29
July .....		.29	.29	.26	.32	.31	.26
September .....		.35	.30	.27	.35	.35	.28
November .....		.35	.30	.28	.37	.37	.30

TABLE VII—RETAIL PRICES OF CREAMERY BUTTER IN CHICAGO EVERY SECOND MONTH, 1907 TO 1910, AND EVERY MONTH DURING 1911 AND 1912, BY FIRMS—Concluded.

Year and month.	Butter, creamery, per pound.						
	Print. Firm No. 793.	Tub. Firm No. 704.	Print. Firm No. 711.	Tub. Firm No. 718.	Print. Firm No. 720.	Print. Firm No. 721.	Tub. Firm No. 723.
1910.							
January.....	\$0.36	\$0.40	\$0.35	\$0.30	\$0.41	\$0.39	\$0.33
March.....	.37	.35	.36	.33	.36	.37 ¹ / ₂	.31
May.....	.33	.35	.35	.33	.33	.33 ¹ / ₂	.30
July.....	.34	.35	.35	.27	.33	.34	.27
September.....	.37	.35	.37	.27	.36	.37	.28
November.....	.37	.37	.38	.29	.37	.37	.31
1911.							
January.....	.33	.37	.35	.32	.36	.34	.36
February.....	.32	.37	.30	.33	.31	.33	.36
March.....	.32	.39	.30	.35	.31	.32	.34
April.....	.27	.37	.30	.36	.30	.28 ¹ / ₂	.32
May.....	.28	.37	.30	.34	.27	.28	.32
June.....	.28	.37	.30	.30	.28	.29	.29
July.....	.31	.37	.30	.29	.29	.31	.29
August.....	.33	.30	.33	.28	.31	.33	.29
September.....	.33	.32	.33	.29	.32	.33	.30
October.....	.35	.38	.35	.31	.35	.35	.32
November.....	.38	.40	.35	.32	.38	.39 ¹ / ₂	.34
December.....	.41	.41	.35	.34	.42	.42	.35
1912.							
January.....	.42	.43	.43	.39	.42	.47	.41
February.....	.39	.39	.38	.36	.38	.39	.37
March.....	.36	.35	.36	.36	.35	.36	.34
April.....	.38	.37	.37	.38	.35	.38	.37
May.....	.36	.35	.32	.34	.34	.37	.33
June.....	.32	.33	.32	.31	.32	.32	.31
July.....	.32	.33	.32	.28	.32	.32	.31
August.....	.32	.33	(1)	.29	.32	.32	.31
September.....	.34	.33	.33	.32	.33	.35	.31
October.....	.36	.35	(1)	.33	(1)	.37	.34
November.....	.39	.37	.38	.36	.35	.39	.37
December.....	.41	.40	.40	.36 ¹ / ₂	.....	.43	.39

¹ No quotation.