

Calculating Class I Price



Advanced Component Price

1 **Higher of Advanced Class III or Class IV Skim Milk Pricing Factor (\$/cwt)** = **Base Class I Skim Milk Price (\$/cwt)**

Advanced Commodity Price Make Allowance Yield Advanced Component Price

2 **Advanced Butter Price (\$/lb)** - **\$0.2272 (\$/lb)** **X** **1.211 (lb butter/lb butterfat)** = **Advanced Butterfat Pricing Factor (\$/lb)**

Calculated in Step 1 Yield Calculated in Step 2 Yield Advanced Class Price

3 **Base Class I Skim Milk Price (\$/cwt)** **X** **0.965 (cwt skim/cwt milk)** **+** **Advanced Butterfat Pricing Factor (\$/lb)** **X** **3.5 (lb butterfat/cwt milk)** = **Base Class I Price (\$/cwt)**

Calculating Class I Price: Details



Monthly advanced commodity prices and the Base Class I Price are announced on or before the 23rd day of the preceding month and use the most recent two weeks of price data available at that time. Monthly final prices are announced on or before the 5th day of the following month and use the most recent four or five weeks of price data since the last publication of Class and Component Prices. Class prices are announced as dollars per hundredweight. CWT = hundredweight, 100 pounds.

Formula Details

1 To calculate the Base Class I Skim Milk Price, both the Class III and IV Advanced Skim Milk Pricing Factors must be calculated. These calculations are identical to those used to compute the Class III and IV Skim Milk Prices announced on or before the 5th of the following month, except for the time series of data used. The higher of the Advanced Class III or IV Skim Milk Pricing Factors determines the Advanced Base Class I Skim Milk Price.

2 **\$0.2272** = Manufacturing cost to produce 1 pound of butter, excluding cost of raw milk (\$/lb).
1.211 = Factor representing pounds of butter that can be made from 1 pound of butterfat (lb butter/lb butterfat).
To calculate the Advanced Butterfat Pricing Factor, use the Butter Price from the Advanced Prices and Pricing Factors series released on or before the 23rd of the preceding month. This price series uses the most recent two weeks of price data available at that time.

3 **0.965** = 96.5 pounds of skim in 100 pounds of milk (cwt skim/cwt milk).
3.5 = 3.5 pounds of butterfat in 100 pounds of milk (lb butterfat/cwt milk).

For more information on the Price Formulas, visit

www.ams.usda.gov/resources/price-formulas

*For more information on Advanced Prices & Pricing Factors and Class & Component Prices, visit **www.ams.usda.gov/rules-regulations/mmr/dmr***

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Calculating Class I Extended Shelf Life (ESL) Adjustment

For each of the 13 - 36 preceding months, calculate the difference:

$$\mathbf{1} \quad \boxed{\text{Higher of Advanced Class III or Class IV Skim Milk Pricing Factors (\$/cwt)}} - \boxed{\text{Average of Advanced Class III and Class IV Skim Milk Pricing Factors (\$/cwt)}}$$

Calculate the 24 Month Rolling Average

$$\mathbf{2} \quad \text{Average: } \boxed{\text{The 24 differences computed in Step 1}} = \text{Rolling Average}$$

Calculate the ESL Adjustment

$$\mathbf{3} \quad \boxed{\text{Current month average of Advanced Class III and Class IV Skim Milk Pricing Factors (\$/cwt)}} + \boxed{\text{Rolling Average computed in Step 2}} - \boxed{\text{Current month higher of Advanced Class III and Class IV Skim Milk Pricing Factors (\$/cwt)}} = \text{ESL Adjustment}$$

Calculating Class I ESL Adjustment: Details

Monthly advanced commodity prices and the Base Class I Prices are announced on or before the 23rd day of the preceding month and use the most recent two weeks of price data available at that time. Monthly final prices are announced on or before the 5th of the following month and use the most recent four or five weeks of price data since the last publication of Class and Component Prices. Class prices are announced as dollars per hundredweight. cwt = hundredweight, 100 pounds.

Formula Details

- 1** Calculate the difference between the higher of and the average of Class III and Class IV skim milk pricing factors for each of the 13-36 preceding months.
- 2** To calculate the Rolling Average, calculate the average of the 24 differences computed in Step 1.
- 3** To calculate the ESL Adjustment, add the average of the current month's Advanced Class III and Class IV skim milk pricing factors to the Rolling Average calculated in step 2. Then subtract the higher of the Advanced Class III and IV Skim Milk Pricing Factors for the current month.

Note - The ESL Adjustment can be positive or negative.

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Calculating Class II Price



1

| | | | | | |
|--|----------|------------------------|----------|--|--|
| <i>Advanced Component Price</i> | | <i>Differential</i> | | | |
| Advanced Class IV Skim Milk Pricing Factor (\$/cwt) | + | \$0.70 (\$/cwt) | = | | Class II Skim Milk Price (\$/cwt) |

2

| | | | | | |
|--------------------------------|----------|------------------------|----------|--|---|
| <i>Component</i> | | <i>Differential</i> | | | |
| Butterfat Price (\$/lb) | + | \$0.007 (\$/lb) | = | | Class II Butterfat Price (\$/lb) |

3

| | | | | | | | | | |
|--|----------|-----------------------------------|----------|---|----------|-------------------------------------|----------|--|--------------------------------|
| <i>Calculated in Step 1</i> | | <i>Yield</i> | | <i>Calculated in Step 2</i> | | <i>Yield</i> | | | |
| Class II Skim Milk Price (\$/cwt) | x | 0.965 (cwt skim/ cwt milk) | + | Class II Butterfat Price (\$/lb) | x | 3.5 (lb butterfat/ cwt milk) | = | | Class II Price (\$/cwt) |

Calculating Class II Price: Details



Monthly advanced commodity prices and the Base Class I Price are announced on or before the 23rd day of the preceding month and use the most recent two weeks of price data available at that time. Monthly final prices are announced on or before the 5th day of the following month and use the most recent four or five weeks of price data since the last publication of Class and Component Prices. Class prices are announced as dollars per hundredweight. CWT = hundredweight, 100 pounds.

Formula Details

1

\$0.70 = Class II skim milk differential (\$/cwt).

2

\$0.007 = Class II butterfat differential (\$/lb).

3

0.965 = 96.5 pounds of skim in 100 pounds of milk (cwt skim/cwt milk).

3.5 = 3.5 pounds of butterfat in 100 pounds of milk (lb butterfat/cwt milk).

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Calculating Class III Price

1

| <i>Commodity</i> | | <i>Make Allowance</i> | | <i>Yield</i> | | |
|-------------------------------|---|-------------------------|---|--|---|-----------------------------------|
| Dry Whey Price (\$/lb) | - | \$0.2668 (\$/lb) | X | 1.03 (lb dry whey/ lb other solids) | = | Other Solids Price (\$/lb) |

2

| <i>Commodity</i> | | <i>Make Allowance</i> | | <i>Yield</i> | | |
|-----------------------------|---|-------------------------|---|--|---|--------------------------------|
| Butter Price (\$/lb) | - | \$0.2272 (\$/lb) | X | 1.211 (lb butter/ lb butterfat) | = | Butterfat Price (\$/lb) |

3

| <i>Component Value</i> | | <i>Butterfat Adjustment</i> | | | | |
|--|---|--|---|--|---|---|
| Protein Value in Cheese (\$/lb protein) | + | Butterfat Value in Cheese (\$/lb butterfat) | - | Butterfat Value in Butter (\$/lb butterfat) | X | 1.17 (lb butterfat/ lb protein) = Protein Price (\$/lb) |

| <i>Commodity</i> | | <i>Make Allowance</i> | | <i>Yield</i> | | |
|-----------------------------|---|-------------------------|---|--------------------------------------|---|--|
| Cheese Price (\$/lb) | - | \$0.2519 (\$/lb) | X | 1.383 (lb cheese/ lb protein) | = | Protein Value in Cheese (\$/lb protein) |

| <i>Commodity</i> | | <i>Make Allowance</i> | | <i>Yield</i> | | |
|-----------------------------|---|-------------------------|---|--|---|--|
| Cheese Price (\$/lb) | - | \$0.2519 (\$/lb) | X | 1.589 (lb cheese/ lb butterfat) | = | Butterfat Value in Cheese (\$/lb butterfat) |

| <i>Calculated in Step 2</i> | | <i>Yield</i> | | |
|--------------------------------|---|---|---|--|
| Butterfat Price (\$/lb) | X | 0.91 (lb butterfat in cheese/ lb butterfat used) | = | Butterfat Value in Butter (\$/lb butterfat) |

4

| <i>Calculated in Step 3</i> | | <i>Percent Protein</i> | | <i>Calculated in Step 1</i> | | <i>Percent Other Solids</i> | | |
|------------------------------|---|-----------------------------------|---|-----------------------------------|---|--|---|---|
| Protein Price (\$/lb) | X | 3.1 (lb protein/ cwt skim) | + | Other Solids Price (\$/lb) | X | 5.9 (lb other solids/ cwt skim) | = | Class III Skim Milk Price (\$/cwt) |

5

| <i>Calculated in Step 4</i> | | <i>Percent Protein</i> | | <i>Calculated in Step 3</i> | | <i>Percent Other Solids</i> | | |
|---|---|-----------------------------------|---|--------------------------------|---|-------------------------------------|---|---------------------------------|
| Class III Skim Milk Price (\$/cwt) | X | 0.965 (cwt skim/ cwt milk) | + | Butterfat Price (\$/lb) | X | 3.5 (lb butterfat/ cwt milk) | = | Class III Price (\$/cwt) |

Calculating Class III Price: Details



*Monthly commodity prices are announced on or before the 5th day of the following month.
Class prices are announced as dollars per hundredweight. CWT = hundredweight, 100 pounds.*

Formula Details

1 **\$0.2668** = Manufacturing cost to produce 1 pound of dry whey, excluding cost of raw milk (\$/lb).
1.03 = Factor representing pounds of dry whey that can be made from 1 pound of other solids (lb dry whey/lb other solids).

2 **\$0.2272** = Manufacturing cost to produce 1 pound of butter, excluding cost of raw milk (\$/lb).
1.211 = Factor representing pounds of butter that can be made from 1 pound of butterfat (lb butter/lb butterfat).

3 **1.17** = Assuming standard cwt of milk components (3.5 lb butterfat and 2.99 lb protein), 1.17 pounds of butterfat are associated with 1 pound of protein.
\$0.2519 = Manufacturing cost to produce 1 pound of cheese, excluding cost of raw milk (\$/lb).
1.383 = Factor representing pounds of cheese that can be made from 1 pound of protein (lb cheese/lb protein).
1.589 = Factor representing pounds of cheese that can be made from 1 pound of butterfat (lb cheese/lb butterfat).
0.91 = Factor accounting for the butterfat retained in the cheese manufacturing process (91 lb butterfat in cheese/cwt of butterfat used). Accounts for the fat lost in the whey stream.

4 **3.1** = Pounds of protein in 100 pounds of skim milk (lb protein/cwt skim).
5.9 = Pounds of other solids in 100 pounds of skim milk (lb other solids/cwt skim).

5 **0.965** = 96.5 pounds of skim in 100 pounds of milk (cwt skim/cwt milk).
3.5 = Pounds of other solids in 100 pounds of skim milk (lb butterfat/cwt milk).

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Calculating Class IV Price

$$\begin{array}{c}
 \mathbf{1} \\
 \text{Commodity} \\
 \text{Butter Price (\$/lb)} \\
 \text{Make Allowance} \\
 - \$0.2272 (\$/lb) \\
 \text{Yield} \\
 \times 1.211 \text{ (lb butter/ lb butterfat)} \\
 = \text{Butterfat Price (\$/lb)}
 \end{array}$$

$$\begin{array}{c}
 \mathbf{2} \\
 \text{Commodity} \\
 \text{Nonfat Dry Milk Price (\$/lb)} \\
 \text{Make Allowance} \\
 - \$0.2393 (\$/lb) \\
 \text{Yield} \\
 \times 0.99 \text{ (lb NFDM/ lb nonfat solids)} \\
 = \text{Nonfat Solids Price (\$/lb)}
 \end{array}$$

$$\begin{array}{c}
 \mathbf{3} \\
 \text{Calculated in Step 2} \\
 \text{Nonfat Solids Price (\$/lb)} \\
 \text{Yield} \\
 \times 9.0 \text{ (lb nonfat solids/ cwt skim)} \\
 = \text{Class IV Skim Milk Price (\$/cwt)}
 \end{array}$$

$$\begin{array}{c}
 \mathbf{4} \\
 \text{Calculated in Step 3} \\
 \text{Class IV Skim Milk Price (\$/cwt)} \\
 \text{Yield} \\
 \times 0.965 \text{ (cwt skim/ cwt milk)} \\
 + \\
 \text{Calculated in Step 1} \\
 \text{Butterfat Price (\$/lb)} \\
 \text{Yield} \\
 \times 3.5 \text{ (lb butterfat/ cwt milk)} \\
 = \text{Class IV Price (\$/cwt)}
 \end{array}$$

Calculating Class IV Price: Details



Monthly commodity prices are announced on or before the 5th day of the following month. Class prices are announced as dollars per hundredweight. CWT = hundredweight, 100 pounds.

Formula Details

- 1** **\$0.2272** = Manufacturing cost to produce 1 pound of butter, excluding cost of raw milk (\$/lb).
1.211 = Factor representing pounds of butter that can be made from 1 pound of butterfat (lb butter/lb butterfat).
- 2** **\$0.2393** = Manufacturing cost to produce 1 pound of NFDM, excluding cost of raw milk (\$/lb).
0.99 = Factor representing pounds of NFDM that can be made from 1 pound of nonfat solids (lb NFDM/lb nonfat solids).
- 3** **9.0** = Factor representing pounds of nonfat solids found in a standard 100 pounds of skim milk (lb nonfat solids/cwt skim).
- 4** **0.965** = 96.5 pounds of skim in 100 pounds of milk (cwt skim/cwt milk).
3.5 = 3.5 pounds of butterfat in 100 pounds of milk (lb butterfat/cwt milk).

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