History of Federal Dairy Programs

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Dairy Policy Overview

- Review of policy mechanisms used
  - Cost of programs
  - Program objectives
  - Program effects

- Programs
  - Price support
  - Direct payments
  - Dairy termination
  - Dairy diversion
  - Assessments
  - Federal orders
Federal Dairy Policy Components Have Different Effects/Missions

- **Price supports** – have been used to create market price floors
- **Direct payments** - partially moderate the effect of low milk prices on producers
- **Assessments** – economic incentive to curb production growth
- **Supply reduction** – direct approach to curb production growth
- **Orders** – allow milk uses to be valued differently, orderly marketing
There Are Interactions Across Programs

Federal Dairy Policy

<table>
<thead>
<tr>
<th>Price Support and Related</th>
<th>Federal Market Orders</th>
<th>Direct Payments</th>
<th>Other Programs</th>
</tr>
</thead>
</table>

Commodity Credit Corporation, Dairy Net Outlays

Billion dollars


Diversion
Market Loss Assistance
Dairy Termination Program
Net Assessments
Milk Income Loss Contract
Price Support and Other

Food and Agricultural Policy Research Institute
University of Missouri

April 13 – 15, 2010 Presentation to the Dairy Industry Advisory Committee
CCC Dairy Outlays

Source: CBO, January 2010
Milk Prices

Dollars per hundredweight


- Support
- MW/Class III
Milk Removals

12.3% of total marketings
Dairy Price Support Program

- Supports the milk price through purchases of American cheese, butter and nonfat dry milk

- Origin to the Agricultural Act of 1949

- Parity pricing used originally to set support levels
  - Minimum – 75% of parity (raised to 80% in 1970s)
  - Maximum – 90% of parity

- Secretary determined support price within the minimum and maximum levels
  - Adequate milk supplies
  - Reflect current costs of production
  - Maintain farm income to maintain productive capacity

- Agricultural Act of 1981 tied support level to amount of surplus

- Was set to be terminated with the 1996 farm bill but extended in agricultural appropriations bills
Understanding the Pre-2008 Farm Bill Method of Determining Product Support Levels

Support price, $/cwt, at 3.67% milkfat 10.10
Support price, $/cwt, at 3.5% milkfat 10.00
Butterfat differential 1/ 6.1

Yields per 100 pounds of milk (3.67% milkfat)
Butter 4.48
Nonfat dry milk (NDM) 8.13
Cheese 10.1

1/ (Butter purchase price times 0.138) - (.0028 times 3.67 price).
### Understanding the Pre-2008 Farm Bill Method of Determining Product Support Levels

**Butter-Nonfat dry milk calculations**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return to butter-powder plants, $/cwt</td>
<td>10.10</td>
</tr>
<tr>
<td>CCC manufacturing allowance for butter and NDM, $/cwt</td>
<td>1.22</td>
</tr>
<tr>
<td>Value of butter and NDM (U.S. average) made from 100 pounds of milk, $/cwt</td>
<td>11.32</td>
</tr>
<tr>
<td>Nonfat dry milk purchase price (rounded), $/lb</td>
<td>1.0340</td>
</tr>
<tr>
<td>Value of NDM per 100 pounds milk, $/cwt 2/</td>
<td>8.41</td>
</tr>
<tr>
<td>Value of butter:</td>
<td></td>
</tr>
<tr>
<td>Dollars per 100 pounds of milk</td>
<td>2.91</td>
</tr>
<tr>
<td>Dollars per pound (calculated) 3/</td>
<td>.6496</td>
</tr>
<tr>
<td>Butter purchase price (rounded), $/lb</td>
<td>.6500</td>
</tr>
</tbody>
</table>

2/ NDM price per pound times 8.13. 3/ Value of butter per 100 pounds of milk divided by 4.48.
Understanding the Pre-2008 Farm Bill Method of Determining Product Support Levels

Cheese calculation

Return to cheese plants, $/cwt 10.10

CCC manufacturing allowance for cheese and whey, $/cwt 1.37

Value of cheese and whey per 100 pounds of milk, $/cwt 11.47

Value of .25 pounds of whey fat: $ 4/ .16

Value of cheese:

Dollars per 100 pounds of milk 11.31

Dollars per pound (calculated) 5/ 1.1198

Cheese purchase prices (rounded), $/lb

Block 1.1200

Barrel 1.0900

4/ Butter purchase price times 0.25. 5/ Value of cheese per 100 pounds divided by 10.1.
Dairy Price Support Program

- Amendments to the original legislation have continued through the 2008 farm bill

- The 2008 farm bill moved from a milk support price to directly establishing product support prices
  - Block cheese – not less than $1.13 per pound
  - Barrel cheese – not less than $1.10 per pound
  - Butter – not less than $1.05 per pound
  - Nonfat dry milk – not less than $0.80 per pound

- In 2009, Secretary temporarily raises cheese and nonfat dry purchase levels

- Before the 2008 farm bill changes, the program used a large amount of AMS relative to program outlays
U.S. Dairy Aggregate Measure of Support

-1 0 1 2 3 4 5 6 7
Billion Dollars

1995 1997 1999 2001 2003 2005 2007

A Simplified Example – Dairy Price Support Program

Ps – Support Price
Qp – Quantity Produced
Qc – Quantity Consumed
Pm – Market Equilibrium Price
Qm – Market Equilibrium Quantity
A Simplified Example – Dairy Price Support Program

Effectiveness of price support lessened today?

Ps – Support Price
Qp – Quantity Produced
Qc – Quantity Consumed
Pm – Market Equilibrium Price
Qm – Market Equilibrium Quantity

Ps – Support Price
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Gov’t Removals

Price
Supply
Demand
Quantity
Dairy Termination Program

- Introduced in the Food Security Act of 1985, referred to as the dairy-herd buyout

- Producers remove all production based on 1985 marketings

- Sell all cattle for slaughter or export

- Producer had to remain out of production for 5 years

- Brick and mortar also had to stay out of production

- Three liquidation periods
  - April-August 1986
  - September 1986-February 1987
  - March-August 1987
Dairy Termination Program (continued)

- Producers bid to have their operation removed
  - Bids ranged from $3.40 per cwt to over $1,000 per cwt
  - Bids up to $22.50 were accepted
  - 13,988 bids were accepted
  - These operations marketed about 12 billion pounds of milk, 1.55 million cows
  - 2/3 of the bidders choose the first period to exit

- Issues
  - Effect on beef cow and cattle prices
  - Long run effect on production
    - Expansion by non-participants to stronger milk prices
    - Re-entry after 5 years by participants
Milk Diversion Program

- The Dairy and Tobacco Adjustment Act of 1983 authorized the milk diversion program

- Producers entered into contracts with the CCC to reduce marketings between 5 to 30 percent over the January 1, 1984 to March 31, 1985 period

- Participants paid $10 per cwt of marketings reduced

- 38,000 producers participated

- A $0.50 refundable assessment occurred in 1982 for those producers who did not expand production

- Small effect on longer term milk production
Milk Income Loss Contract (MILC) Program

- Started with the 2002 farm bill

- Production eligible for the program capped
  - 2002 farm bill – 2.4 million pounds
  - 2008 farm bill – 2.985 million pounds, reverting back to 2.4 10/1/2012
  - Favors smaller producers

- Payment Rate = 0.45 * (Feed cost adjuster * $16.94 – Boston Class I price)

- Feed cost adjuster = 1 + max(0,(0.45 * (DRV – 7.35)/7.35))

- Extends period of low prices

- Large producers unhappy with the program, lowers market prices
MILC Eligibility, 2.4 Million Pound Cap

Any cap results in a smaller percentage of milk becoming eligible for the program over time. Caps make MILC a small versus large issue.
MILC Eligibility at Alternative Production Caps

The cap level is not the breakpoint of who should\shouldn't like the program. That answer depends on market price movement.
Alternative Direct Payment Programs

TPDP - Pay 100% of the difference when the class III price falls below $11
MILX – Pre 2008 Farm Bill, 34%, no feed cost adjuster, 2.4 million pound cap
Federal Milk Market Orders

Program Objectives:

To stabilize market conditions, benefit producers and consumers by establishing and maintaining orderly marketing conditions, and assure consumers of adequate supplies of pure and wholesome milk at all times.

Benefits of the Program:

Assures dairy farmers a reasonable minimum price for their milk throughout the year.

Assures consumers of an adequate supply of milk to meet their needs throughout the year and help prevent wild fluctuations in price through periods of heavy and light milk production.

Source: AMS Dairy Division Website
Federal Milk Market Orders

Each milk marketing order includes:

• Classified price plan
• System of minimum prices
• Terms of the order
• Provisions for administering the order
Federal Orders Establish Minimum Prices

- Regulated handlers must pay for Grade A milk
- Class I – Beverage
- Class II – Fluid cream products, yogurt, ice cream, cottage cheese
- Class III – Cream cheese and hard manufactured cheese
- Class IV – Butter and milk in dried forms

- Producers are paid a blend price that is a weighted average of pool receipts
Number of Market Orders

Orders

Federal Milk Marketing Order Areas
Producers in Federal Orders

- 1961: 250,000 producers
- 1966: 150,000 producers
- 1971: 100,000 producers
- 1976: 50,000 producers
- 1981: 50,000 producers
- 1986: 50,000 producers
- 1991: 50,000 producers
- 1996: 50,000 producers
- 2001: 50,000 producers
- 2006: 50,000 producers
Percentage of Producer Milk Used For Class I

Percentage

Federal Milk Market Orders – Class I Price Surface

May 1, 2008
Pricing Formulas Determine Minimum Prices
Class III

- Class III Price = (Class III skim milk price \( \times 0.965 \)) + (Butterfat price \( \times 3.5 \)).

- Class III Skim Milk Price = (Protein price \( \times 3.1 \)) + (Other solids price \( \times 5.9 \)).

- Protein Price = ((Cheese price \( \times 0.2003 \)) \( \times 1.383 \)) + (((Cheese price \( \times 0.2003 \)) \( \times 1.572 \)) – Butterfat price \( \times 0.9 \)) \( \times 1.17 \)).

- Other Solids Price = (Dry whey price \( \times 0.1991 \)) \times 1.03.

- Butterfat Price = (Butter price \( \times 0.1715 \)) \times 1.211.

Dairy product prices – USDA/NASS survey prices
Pricing Formulas Determine Minimum Prices
Class IV

- Class IV Price = (Class IV skim milk price x 0.965) + (Butterfat price x 3.5).
- Class IV Skim Milk Price = Nonfat solids price times 9.
- Nonfat Solids Price = (Nonfat dry milk price - 0.1678) times 0.99.
- Butterfat Price = See Class III.
Pricing Formulas Determine Minimum Prices
Class I and II

- Class I Price = (Class I skim milk price x 0.965) + (Class I butterfat price x 3.5).

- Class I Skim Milk Price = Higher of advanced Class III or IV skim milk pricing factors + applicable Class I differential.

- Class I Butterfat Price = Advanced butterfat pricing factor + (applicable Class I differential divided by 100).

- Class II Price = (Class II skim milk price x 0.965) + (Class II butterfat price x 3.5).

- Class II Skim Milk Price = Advanced Class IV skim milk pricing factor + $0.70.

- Class II Butterfat Price = Butterfat price + $0.007.

- Class II Nonfat Solids Price = Class II skim milk price divided by 9.
## Over-Order Charges, November 2009

<table>
<thead>
<tr>
<th>Federal Milk Order Marketing Area 2/</th>
<th>Order Number</th>
<th>Weighted Average of Over-Order Charges Spread Over Total Class I Milk 1/</th>
<th>Weighted Average of Over-Order Charges Spread Over Total Class II Milk 1/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appalachian</td>
<td>005</td>
<td>2.65</td>
<td>1.21</td>
</tr>
<tr>
<td>Southeast</td>
<td>007</td>
<td>2.78</td>
<td>2.14</td>
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<tr>
<td>Florida</td>
<td>006</td>
<td>3.58</td>
<td>1.06</td>
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<tr>
<td>Mideast</td>
<td>033</td>
<td>2.17</td>
<td>1.37</td>
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<tr>
<td>Upper Midwest</td>
<td>030</td>
<td>2.07</td>
<td>0.84</td>
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<tr>
<td>Central</td>
<td>032</td>
<td>2.26</td>
<td>1.03</td>
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<tr>
<td>Pacific Northwest</td>
<td>124</td>
<td>0.75</td>
<td>0.61</td>
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<tr>
<td>All Reporting Areas Combined 3/</td>
<td></td>
<td>2.25</td>
<td>1.17</td>
</tr>
</tbody>
</table>

1/ Figures are weighted averages of all the over-order charges applicable to any volume of milk used in the respective class spread over 100 percent of the producer milk used in that class. Includes some producer milk for which there was no over-order charge.

2/ Information is available for all Federal milk marketing areas except the Northeast and Southwest. See 3/.

3/ Figures are weighted averages of the available individual marketing area data; includes information for the Arizona order which is administratively confidential.
Understanding How Policies Affect the Sector

Figure 3
Linkages between the milk price support program and the Federal milk marketing orders

Source: Economic Research Service, USDA.
Understanding How Policies Affect the Sector

Figure 3
Linkages between the milk price support program and the Federal milk marketing orders

Dairy Price Support Program

Farm milk price

Milk production (marketings)

Milk production costs

Wholesale product prices

Milk Use

Class I
Class II
Class III
Class IV

Federal milk marketing orders

Blend price

Other effects on farm milk price

Source: Economic Research Service, USDA.
Understanding How Policies Affect the Sector

Figure 3
Linkages between the milk price support program and the Federal milk marketing orders

Dairy Termination, Milk Diversion, Producer Assessments

Dairy Price Support Program

Federal Orders

Source: Economic Research Service, USDA.
Summary

- Policy can have large short run effects on milk supplies
- Crop/biofuel policy indirectly effects milk supplies
- Many policies do not affect the long-run path of milk supplies
  - Exceptions: Quotas, Capped programs like MILC
- It is hard to develop policy that eliminates price volatility without needing large levers
  - $18 equivalent price support
  - Quota
  - An uncapped target price program
- These large levers often have large price tags