USDA Agricultural Marketing Service (AMS)

Preliminary Economic Analysis
Class III and Class IV Prices

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In order to assess the impact of proposed changes to Federal order Class III and IV pricing formulas, the Department has conducted preliminary economic analyses. While the proposed changes have effects on Class III and IV prices, they also have effects on the milk supply, product demand, milk allocation, and market prices. These dynamic effects impact all Federal order class prices as well.

Scope of Analyses

Most of the preliminary analyses for the upcoming hearing make use of USDA Agricultural Baseline Projections to 2015 (OCE-2006-1, http://www.usda.gov/oce/commodity/ag_baseline.htm). The baseline projections are "a Departmental consensus on a long-run scenario for the agricultural sector." Included is a national, annual projection of the supply-demand-price situation for milk. The USDA baseline assumes: (1) The Milk Price Support Program (MPSP) will continue unchanged; (2) The Dairy Export Incentive Program will be utilized to the maximum extent allowed beginning in the 2006/07 fiscal year; (3) The Milk Income Loss Contract (MILC) program will continue through September 2007[1]; (4) The Federal order system will remain unchanged.

For most economic impact analyses conducted by USDA-AMS Dairy Programs in the past, impacts of policy changes have been estimated as changes from USDA baseline. For analyses in this paper, adjustments are made to the USDA baseline to reflect changes in manufacturing (make) allowances per the Interim Final Rule issued by USDA on December 26, 2006. The Interim Final Rule amends the make allowances for cheese, butter, nonfat dry milk (NFDM), and dry whey. Specifically, the decision adopts the following increased make allowances:

cheese	$0.1682 per pound
butter	$0.1202 per pound
NFDM	$0.1570 per pound
dry whey	$0.1956 per pound

The changes in make allowances were scheduled to become effective for Class III and Class IV prices February 1, 2007. Due to litigation, existing make allowances were used for the Announcement of Advanced Prices for February 2007, announced January 19, 2007. A notice appeared in that announcement stating the following:

> In light of litigation commenced in United States District Court for the Northern District of Ohio, the manufacturing allowances used to compute the Federal order minimum advance Class I and Class II prices and pricing factors in this announcement are the current manufacturing allowances, rather than the revised manufacturing allowances contained in the Interim

[1] Dairy producers are not eligible to choose September 2007 as a month for which MILC payments are to be applied. This provision was included so that it would not be necessary to include MILC payments in the Federal budget for fiscal year 2007-08.

Final Rule published in the Federal Register on December 29, 2006 (71 FR 78333- 78335). As long as the Interim Final Rule is not enjoined as a result of the litigation, Federal order minimum prices for Class III and Class IV milk for February 2007, as well as the Federal order minimum advance Class I and Class II prices and pricing factors for March 2007 and thereafter, will be computed using the revised manufacturing allowances contained in the Final Rule.

For the model scenarios, the Interim Final Rule is assumed to remain in effect through 2015. Since the model is an annual model, the baseline used for the model scenarios makes a simplifying adjustment, treating the Interim Final Rule as though its effective date was set as January 1, 2007. Hereafter, all references to the baseline in this paper refer to a USDA baseline that has been adjusted to reflect make allowances stated in the Interim Final Rule.

Throughout the projection period, Class III prices are consistently higher than Class IV prices. Since the model is an annual model, a simplifying assumption is made that Class III and IV pricing factors are the same as advanced pricing factors for Class I and II pricing. Therefore, Class I prices at 3.5 percent butterfat move in lock step with Class III prices throughout the projection period. This happens to remain the case for all of the scenarios analyzed.

The econometric model used for these preliminary analyses includes demands for fluid milk products and manufactured dairy products. Demands for fluid milk and manufactured dairy products are functions of per capita consumption and population. Per capita consumption for the major milk and dairy products are estimated as functions of own prices, substitute prices, and income. Retail margins are assumed unchanged from the baseline. The demands for fluid milk and soft manufactured products are satisfied first by the eligible supply of milk. The milk supply for manufactured hard products is the volume of milk marketings remaining after satisfying the volumes demanded for fluid and soft manufactured products. Milk is manufactured into cheese, butter or NFDM according to returns to manufacturing in each class. Wholesale prices for cheese, butter, NFDM, and dry whey reflect supply and demand for these products. These manufactured dairy product prices underlie the Federal order pricing system. For model documentation see http://www.ams.usda.gov/dairy/hearings.htm.

Not all proposals for these proceedings are analyzed using the econometric model. In some cases, more than one interested party has made a similar proposal to change a particular term or factor. In these cases, in the interest of brevity, only one of the similar proposals is analyzed; impacts for the other similar proposals can be roughly deduced from the impacts of the proposals analyzed. For some proposals, use of the econometric model would be inappropriate or problematic. For other proposals, examples or descriptive data are provided to analyze the proposal. For some proposals, no economic analysis is performed because there is insufficient detail upon which to perform an analysis.

Overview of Model Scenarios Used to Analyze Proposals

There are ten model scenarios used to analyze proposals submitted by interested parties, labeled scenarios A through J. Table 1 provides a brief description of each scenario. Proposed changes relevant to each scenario are listed in Table 2. Nine-year average results from the model scenarios are listed in Table 3.

Table 1. Scenarios analyzed using Econometric Model

Scenario	Proponent(s)	Description
A	Agri-Mark	Amend make allowances to reflect new data from CDFA
B	Dairy Farmers of America and Northwest Dairy Association	Eliminate barrel price from weighted average cheese price calculation
C	Dairy Producers of New Mexico	Change yield factors in protein price formula
D	Dairy Producers of New Mexico	Change yield factors for butterfat and nonfat dry milk (NFDM) in addition to yield factors in protein price
E	Dairy Producers of New Mexico	Change butterfat yield factor to 1.211
F	Dairy Producers of New Mexico	Change price series to CME for cheese, butter, and NFDM
G	Dairy Producers of New Mexico	Set make allowances at weighted averages provided by Cornell study
H	Dairy Producers of New Mexico	Establish a separate butterfat price for Class III
I	International Dairy Foods Association	Eliminate three cent adjustment on barrel price in weighted-average cheese price calculation
J	National Milk Producers Federation	Establish energy adjusters for make allowances

Table 2. Changes proposed to Federal order formulas

Scenario Proponent	Units	Baseline	A Agri-mark	B DFA/NWDA	C DPNM	D DPNM	E DPNM	F DPNM	G DPNM	I IDFA	J NMPF[1]
			Change from Baseline								
Changes to Pricing Factors											
Make Allowances											
Butter	$/pound	0.1202	0.0014						-0.0094		0.0007
NFDM	$/pound	0.1570	0.0092						-0.0160		0.0012
Cheese	$/pound	0.1682	0.0029						-0.0044		0.0005
Whey	$/pound	0.1956	0.0000						-0.0458		0.0013
Protein Price											
Protein Yield factor		1.383			0.022	0.022					
Butterfat Yield factor		1.572			0.081	0.081					
Butterfat recovery factor		0.90			0.04	0.04					
Cheese price adjustment	$/pound			-0.0087				0.0056		-0.0169	
Butterfat Price											
Butterfat Yield factor		1.200				0.020	0.011				
Butter price adjustment	$/pound							0.0183			
Nonfat Solids Price											
Nonfat solids yield factor		0.99				0.03					
NFDM price adjustment	$/pound							0.0397			

Scenario H by Dairy Producers of New Mexico:

Class III butterfat price = (cheese price -0.1682) X 1.572
Protein price = (cheese price - 0.1682) X 1.383
If the Class IV price is higher than the Class III price
then: Class I butterfat price = Class IV butterfat pricing factor + (applicable Class I differential divided by 100)
else: Class I butterfat price = Class III butterfat pricing factor + (applicable Class I differential divided by 100)
If the Class IV price is higher than the Class III price
then: Class I skim price = Class IV skim milk pricing factor + applicable Class I differential
else: Class I butterfat price = Class III skim milk pricing factor + applicable Class I differential
All other formulas are the same as those applicable to the Interim Final Rule of December 26, 2006

[1] Average changes in make allowances are listed for the NMPF proposal.

Table 3. Model Results for Proposed Class III and Class IV Pricing Changes
Nine-year averages, 2007 through 2015

Scenario [1]		Baseline [2]	A	B	C	D	E	F	G	H	I	J
Proponent			Agri-mark	DFA/NWDA	DPNM	DPNM	DPNM	DPNM	DPNM	DPNM	IDFA	NMPF
	Units		Change from Baseline									
F.O. Minimum Prices, 3.5% BF												
Class I	$/cwt	16.35	0.00	-0.05	0.13	0.06	-0.02	-0.06	0.15	-0.30	-0.10	0.00
Class II	$/cwt	12.68	-0.06	0.03	-0.09	0.12	0.03	0.30	0.01	0.34	0.07	0.00
Class III	$/cwt	13.64	0.00	-0.05	0.13	0.06	-0.02	-0.06	0.15	-0.30	-0.10	0.00
Class IV	$/cwt	11.98	-0.06	0.03	-0.09	0.12	0.03	0.30	0.01	0.34	0.07	0.00
Blend	$/cwt	14.28	-0.01	-0.03	0.07	0.07	0.00	0.03	0.11	-0.32	-0.05	0.00
F.O. Minimum Prices at Test												
Class I	$/cwt	13.95	-0.01	-0.06	0.16	0.08	-0.03	-0.04	0.20	-0.86	-0.12	0.00
Class II	$/cwt	20.46	-0.02	0.08	-0.19	0.04	0.08	0.23	-0.15	0.74	0.15	0.00
Class III	$/cwt	13.61	0.00	-0.05	0.13	0.06	-0.02	-0.06	0.15	-0.32	-0.10	0.00
Class IV	$/cwt	13.45	-0.05	0.05	-0.14	0.09	0.05	0.30	-0.06	0.55	0.11	0.00
Blend	$/cwt	14.63	-0.01	-0.03	0.07	0.07	0.00	0.03	0.10	-0.27	-0.05	0.00
NASS Wtd. Avg. Product Prices												
Cheddar	$/pound	1.4713	0.0026	0.0029	-0.0075	-0.0140	-0.0019	-0.0105	-0.0145	0.0290	0.0057	0.0011
Butter	$/pound	1.5630	0.0067	0.0074	-0.0185	-0.0363	-0.0052	-0.0279	-0.0372	0.0710	0.0142	0.0022
NFDM	$/pound	0.8456	0.0001	0.0004	-0.0011	-0.0010	0.0001	-0.0001	-0.0015	0.0048	0.0009	0.0001
Whey	$/pound	0.2765	0.0003	0.0004	-0.0010	-0.0018	-0.0002	-0.0013	-0.0019	0.0038	0.0008	0.0001
Retail fluid milk price [3]	$/gal.		-0.0008	-0.0055	0.0141	0.0072	-0.0027	-0.0036	0.0173	-0.0738	-0.0107	-0.0003
Component Prices												
Protein	$/pound	2.3759	-0.0078	-0.0278	0.0707	0.0413	-0.0161	-0.0036	0.0025	-0.5335	-0.0540	0.0001
Butterfat [4]	$/pound	1.7313	0.0063	0.0088	-0.0223	-0.0154	0.0095	-0.0115	-0.0334	0.0853	0.0171	0.0017
Class III butterfat (Scenario H)	$/pound									0.3628		
Other solids	$/pound	0.0834	0.0003	0.0004	-0.0010	-0.0018	-0.0002	-0.0013	0.0452	0.0039	0.0008	-0.0012
Nonfat solids	$/pound	0.6817	-0.0090	0.0004	-0.0011	0.0197	0.0001	0.0392	0.0144	0.0047	0.0009	-0.0011

Table 3 continued on next page

Table 3 Continued. Model Results for Proposed Class III and Class IV Pricing Changes
Nine-year averages, 2007 through 2015

Scenario Proponent	Units	Baseline	A Agri-mark	B DFA/NWDA	C DPNM	D DPNM	E DPNM	F DPNM	G DPNM	H DPNM	I IDFA	J NMPF
			Change from Baseline									
Skim Milk Prices												
Class I skim price	$/cwt	10.5671	-0.0222	-0.0839	0.2131	0.1174	-0.0514	-0.0188	0.2746	-1.6308	-0.1627	-0.0071
Class II skim price	$/cwt	6.8352	-0.0808	0.0039	-0.0098	0.1771	0.0007	0.3524	0.1292	0.0426	0.0080	-0.0098
Class III skim price	$/cwt	7.8571	-0.0222	-0.0839	0.2131	0.1174	-0.0514	-0.0188	0.2746	-1.6308	-0.1627	-0.0071
Class IV skim price	$/cwt	6.1352	-0.0808	0.0039	-0.0098	0.1771	0.0007	0.3524	0.1292	0.0426	0.0080	-0.0098
Federal Order Class Uses												
Class I	mil. pounds	45,892	1	7	-18	-9	3	4	-22	92	13	0
Class II	mil. pounds	17,464	5	-17	42	-8	-17	-51	34	-162	-32	-1
Class III	mil. pounds	51,122	-6	-8	20	34	4	24	37	-78	-15	-4
Class IV	mil. pounds	15,597	-10	-35	87	74	-6	10	121	-352	-67	-5
Total F.O. Marketings	mil. pounds	130,075	-10	-52	132	91	-16	-13	169	-500	-101	-10
Federal Order Cash Receipts	mil. $	19,040	-16	-42	106	101	-4	33	158	-422	-81	-2
All Milk Price	$/cwt	14.73	0.00	-0.02	0.05	0.03	-0.01	0.00	0.07	-0.18	-0.04	0.00
Milk Cows	1000s	8,884	-1	-2	6	5	-1	0	8	-23	-5	0
Yield per Cow	pounds	21,660	-1	-3	7	5	-1	0	9	-26	-5	-1
U.S. Marketings [5]	mil. pounds	191,649	-19	-76	191	150	-18	4	255	-734	-147	-15
Government removals of NFDM	mil. pounds	282	-1	-3	8	6	-1	1	11	-31	-6	0
U.S. Producer Revenue [6]	mil. $	28,274	-11	-47	116	85	-12	-1	158	-447	-91	0

[1] See Table 1 for brief description of scenarios.

[2] For these analyses, the baseline reflects adjustments from the published USDA baseline to reflect changes in manufacturing (make) allowances per the Interim Final Rule issued by USDA on December 26, 2006.

[3] Retail fluid milk prices are not projected in the model. Projected impacts are calculated by multiplying the Class I price per pound at test by 8.62 pounds of milk per gallon.

[4] For all scenarios except Scenario H, the butterfat price applies to both Class III and Class IV butterfat.

[5] U.S. Marketings differs from U.S. milk production due to farm use of milk.

[6] U.S. Producer Revenue includes Milk Income Loss Contract payments for 2007.

Proposals by Agri-Mark Dairy Cooperative (Agri-Mark)

Proposal to amend manufacturing allowances based upon record evidence that may include the most current plant cost survey information available (Scenario A).

Make allowances as issued through the Interim Final Rule of December 26, 2006 were based on data from two studies: *Cost of Processing in Cheese, Whey, Butter and Nonfat Dry Milk Plants*, by Mark Stephenson, Ph.D., Cornell Program on Dairy Markets and Policy, September 1, 2006 (Cornell data) and *Weighted Average Manufacturing Costs for Butter, Nonfat Powder, Skim Whey Powder and Cheddar Cheese, California Department of Food and Agriculture*, Costs for Calendar Year 2004, Amended January 2006 (CDFA data through 2004). To determine make allowances, the data from both studies were weighted by product pounds for cheese, NFDM, and butter. Only the Cornell data was used to determine the make allowance for dry whey.

In November 2006, CDFA released *Summary of Weighted Average Manufacturing Costs for Butter, Nonfat Powder, Cheddar Cheese, and Skim Whey Powder* (CDFA data through 2005). Also, on February 2, 2007, NASS released a Dairy Products report that includes volume estimates of dairy products produced through December 2006.

For Scenario A, make allowances have been adjusted to reflect updated California manufacturing costs as indicated by the CDFA data for the calendar year 2005 (Table 4). Make allowances are computed using CDFA and Cornell data weighted by product volumes of American cheese, butter, and NFDM in California and the U.S. outside of California for 2006. In being consistent with the method used for the interim final rule, no change is made to the make allowance for dry whey since CDFA data are not used. Scenario changes are listed in Table 2. A summary of results of an econometric analysis of this proposal is found in Table 3.

Incorporation of the most recent CDFA cost data and 2006 weighting results in small variations from baseline forecasts. Slight decreases in protein and nonfat solids prices lower the skim price across all classes. This results in an average $0.01 per cwt. decrease in the Federal order blend price. Dairy product prices increase slightly. There is no change in the average all-milk price over the nine-year period.

Proposal to amend the Class III and Class IV product formulas annually based on an annual manufacturing cost survey of dairy product manufacturing plants.

Under this proposal, manufacturing allowances would be set at levels that would allow plants to recover costs based upon minimum percentages of Class III and Class IV milk volumes. There are no specific percentages stated in the proposal, and the proposal does not state a specific method for determining minimum percentages. Dairy Programs has not performed an economic analysis relevant to this proposal.

Table 4. Calculation of Make Allowances for Scenario A

Cheese	
Weighted average cost, Cheddar cheese, $/pound:	
CDFA Study [1]	0.1914
Cornell Study [2]	0.1638
2006 volume,[3] American cheese, 1000 pounds:	
California	822,230
U.S. other than California	3,115,858
U.S.	3,938,088
Weighted average cost per pound:	
Before sales and administrative costs	0.1696
Sales and administrative costs	0.0015
Scenario make allowance	0.1711

NFDM	
Weighted average cost, $/pound:	
CDFA Study--medium cost plants	0.1872
Cornell Study [4]	0.1423
2006 volume, 1000 pounds:	
California	613,240
U.S. other than California	614,304
U.S.	1,227,544
Weighted average cost per pound	
Before sales and administrative costs	0.1647
Sales and administrative costs	0.0015
Scenario make allowance	0.1662

Whey	
Weighted average cost, $/pound:	
Cornell Study	0.1941
Sales and administrative costs	0.0015
Scenario make allowance	0.1956

Butter	
Weighted average cost, $/pound:	
CDFA Study	0.1408
Cornell Study	0.1108
2006 volume, 1000 pounds:	
California	448,590
U.S. other than California	995,674
U.S.	1,444,264
Weighted average cost per pound:	
Before sales and administrative costs	0.1201
Sales and administrative costs	0.0015
Scenario make allowance	0.1216

[1] Summary of Weighted Average Manufacturing Costs for Butter, Nonfat Powder, Cheddar Cheese, and Skim Whey Powder, Jan.-Dec. 2005 data, released November 29, 2006

[2] Cost of Processing in Cheese, Whey, Butter, and Nonfat Dry Milk Plants, by Mark Stephenson, Cornell Program on Dairy Markets and Policy, September 2006

[3] Source for all volumes: USDA, National Agricultural Statistics Service, 2006 values

[4] The text of the Cornell study indicates that the weighted average NFDM manufacturing cost is $0.1410 per pound. This was corrected to $0.1423 per pound at a previous hearing.

Proposal to adjust the protein price to reflect the lower price for whey butter.

The proposal did not state a specific adjustment or provide a source of data for determining the price of whey butter. Dairy Programs is unable to perform an economic analysis relevant to this proposal.

Proposal to lower the adjustment to the barrel price contained in the protein price formula from 3 cents to 1.5 cents.

This proposal would lower the adjustment to the barrel price contained in the protein price formula from 3 cents to 1.5 cents. This proposal is similar to a proposal by International Dairy Foods Association (IDFA) that would eliminate the barrel price adjustment altogether. Since impacts of this proposal are roughly half of the of IDFA proposal, to avoid redundancy, Dairy Programs has only analyzed impacts of the IDFA proposal.

Proposal to use a combination of weekly NASS and CME price series to determine the cheese price to be used in the Class III and Class IV product price formulas.

It appears that the proposal is intended to align Federal order milk prices more closely with CME cheese prices, not to change the average level of milk prices. Therefore, analysis using the econometric model does not apply. Dairy Programs has not performed an economic analysis relevant to this proposal.

Proposal by Dairy Farmers of America (DFA)

Proposal to change butterfat yield factor to 1.215.

This proposal would change a factor in computing the butterfat price from 1.2 to 1.215. The proposal by DFA claims that the Department made a mathematical error in calculating butterfat shrink. This proposal is very similar a proposal from Dairy Producers of New Mexico (DPNM). Like DPNM, DFA claims that an error was made in the formula currently used by USDA relative to butterfat shrink calculation. However, DFA claims that the factor in the butterfat formula should be 1.215 instead of 1.211, as proposed by DPNM. While the proposal submitted by DPNM has a calculation explanation, the DFA proposal does not. Dairy Programs has only analyzed impacts of the DPNM proposal.

Proposal by Dairy Farmers of America and Northwest Dairy Association (NWDA)

Proposal to remove the barrel cheese price as a component of the protein price formula (Scenario B).

Over the seven-year period from 2000 through 2006, eliminating the barrel price from the protein price formula would have reduced the average cheese price calculation by $0.0087

per pound on average. Using the 84 monthly observations from each time series (with and without the including the barrel prices), a t-test comparing the average cheese prices indicates that this difference is significantly different from zero, with a t-statistic of 4.80. There is a probability near zero that the difference is only due to random variation in each data series.

An econometric analysis was performed for this proposal and is labeled Scenario B. In the model, $0.0087 per pound was subtracted from the baseline cheese price to determine the impact to the dairy industry. A summary of results of an econometric analysis of this proposal is found in Table 3.

The simulation of cheese pricing based on only the block price directly affects the protein pricing formula. In turn, this proposal lowers the Class I and Class III prices. With lower milk prices, the milk supply contracts and dairy product prices rise. Average declines of $0.03 per cwt in the Federal order blend price and $0.02 per cwt in the all-milk price from baseline projections lead to a slight decrease in marketings over the projection period.

Proposals by Dairy Producers of New Mexico (DPNM)

The DPNM proposals are analyzed using six scenarios, C through H. While DPNM's proposed language includes all of the proposals working together, separate model runs are, for the most part, used in order to illustrate the effects of the proposals. The exception is Scenario D, which combines a proposal dealing with protein yield factors with proposals to increase yield factors in the butterfat and nonfat solids pricing formulas.

Proposal to amend the protein yield factors (Scenario C).

This proposal would amend the protein yield factors contained in the protein price formula. An econometric analysis was performed for this proposal and is labeled as Scenario C. Proposed changes are listed in Table 2. A summary of results of an econometric analysis of this proposal is found in Table 3.

Changing the protein yield factors as proposed by DPNM effectively increases the protein price, which in turn increases Class I and Class III prices. With higher milk prices, milk production increases and dairy product prices fall. Increases in Class I and Class III prices are partially offset by falling Class II and Class IV prices, resulting in average increases of $0.07 per cwt in the Federal order blend price and $0.05 per cwt in the all-milk price. Federal order Class I use falls an average 18 million pounds. Marketings increase by 132 million pounds in Federal orders and by 191 million pounds in the U.S. on average over the projection period.

Proposals to change yield factors for butterfat and nonfat solids (Scenario D).

The proposals would eliminate the farm-to-plant shrink factor for butterfat and increase the yield factor for nonfat solids. An econometric analysis labeled as Scenario D includes the same changes as Scenario C with the additional elimination of farm-to-plant

shrink for butterfat and the proposed adjustment to the yield factor for nonfat milk solids. Proposed changes are listed in Table 2. A summary of results of an econometric analysis of this proposal is found in Table 3.

Changes to the yield factors in the butterfat and nonfat solids price formulas counteract some of the effects of the protein price yield factor changes carried over from Scenario C. With Scenario D, the increase in butterfat price contributes to a smaller increase in the protein price than with Scenario C, resulting in a smaller increase in the Class III price compared to Scenario C. With Scenario D the all-milk price increases above the baseline level by an average of $0.03 per cwt compared to an average of $0.05 per cwt with Scenario C. This reflects the larger decline in the butter price in Scenario D compared to Scenario C. On average, total Federal order marketings rise, although Class I and Class II use show a slight decrease in the forecast period.

Proposal to change butterfat yield factor to 1.211 (Scenario E).

DPNM claims that an error was made in the formula currently used by USDA for the butterfat price relative to butterfat shrink calculation. DPNM proposes changing the yield factor in the butterfat formula from 1.2 to 1.211. An econometric analysis was performed for this proposal and is labeled as Scenario E. This is an alternative to DPNM's preferred elimination of butterfat shrink in the formula altogether, which would have the factor at 1.22. A summary of results of an econometric analysis of this proposal is found in Table 3.

The increase in the butterfat yield factor increases the butterfat price, lowering the protein price in the Federal order formula. While Class II and Class IV prices rise, Class I and Class III prices fall. The effects are offsetting. There is no change in the Federal order blend price for the nine-year average. The all-milk price falls by $0.01 per cwt on average over this period.

Proposal to use CME pricing series for cheese, butter, and NFDM (Scenario F).

Under this proposal, monthly CME prices would replace NASS prices for cheese, butter, and NFDM. For cheese, only the CME price for blocks would be used. Since there is no CME price for dry whey, the NASS price would continue to be used. Over the seven-year period from 2000 through 2006, CME prices on average were higher than weighted-average prices used in product price formulas by the following amounts:

cheese	$0.0056 per pound
butter	$0.0183 per pound
NFDM	$0.0397 per pound

Using 84 monthly observations for each time series, t-tests were performed comparing weighted-average NASS prices with average CME prices. For cheese, the difference is of questionable significance, with a t-statistic of 0.76. There is a 0.45 probability that the difference is due solely to random variation in two price series. For butter and NFDM the differences are statistically significantly different from zero, with t-statistics of 3.32 and 6.55

respectively. Probabilities are near zero that these differences are due to random variation. An econometric analysis was performed for this proposal and is labeled as Scenario F. In the model, historical differences between CME prices and NASS prices were subtracted from the baseline prices to determine the impact to the dairy industry. Product price changes based on these historical differences are listed in Table 2. A summary of results of an econometric analysis of this proposal is found in Table 3.

With Scenario F, Class II and Class IV prices are the most affected, due to increased butterfat price and nonfat solids prices. Total Federal order marketings fall during the forecast period, attributed mostly to a decrease in Class II use. In the protein price formula, the increase in the butterfat price more than offsets the increase in the cheese price, causing the protein price to fall. Class III and Class I prices fall, offsetting the increases in the Class II and Class IV prices. The Federal order blend price rises by an average $0.03 per cwt, but the average all-milk price is unchanged over the nine-year projection period.

It is important to note that if CME prices were used to set Federal order minimum prices, an increase in trading on the CME exchange could occur. The analysis is unable to capture related effects, as the existing model equations are based upon the existing market structure.

Proposal to amend the manufacturing allowances for butter, NFDM, and cheese to match weighted average total costs as presented by Cornell study (Scenario G).

The proposal would amend the manufacturing allowances for butter, NFDM, and cheese to match weighted average total costs as presented in the Cornell study:

butter	$0.1108 per pound
NFDM	$0.1410 per pound
cheese	$0.1638 per pound
whey	$0.1498 per pound

The make allowance for dry whey is equal to weighted average total cost cited in the study for NFDM plus additional energy costs of $0.088 per pound. An econometric analysis was performed for this proposal and is labeled as Scenario G. Proposed changes are listed in Table 2. A summary of results of an econometric analysis of this proposal is found in Table 3.

Lowering the make allowances results in higher milk prices. Producers respond by increasing U.S. marketings by an average 255 million pounds, resulting in lower dairy product prices. Butter has the largest decrease of the dairy products, $0.0372 per pound. Class II and Class IV prices at test fall due to their relatively high butterfat contents. The all-milk price rises by an average $0.07 per cwt over the projection period.

Proposal to Establish a Separate Class III Butterfat Price (Scenario H).

Currently, the Class III and Class IV Federal order prices use the same butterfat price derived from the butter price, a make allowance, and a yield factor. This proposal calls for an

adoption of a separate Class III butterfat price based upon the price of cheese, a make allowance, and a yield factor. The Class IV butterfat pricing formula would remain the same as the butterfat pricing formula now used to price Class III and Class IV butterfat. The protein price would be solely based upon the cheese price, a make allowance, and a yield factor.

While the proposed changes to the Class III and Class IV butterfat and protein prices are straightforward, the proposal is unclear concerning the advanced pricing factor to be used in the Class I price calculation. For § 1000.50 (q) (3), DPNM has proposed using an "advanced butterfat price…calculated by following the procedure set forth in paragraph (l) of this section." DPNM's proposed paragraph (l), however, includes both a Class III butterfat price and a Class IV butterfat price.

For the first two months of 2001, USDA used a separate butterfat price for Class III that was constructed in a similar manner to that advanced by this proposal. At that time, USDA used the higher of a Class III or Class IV advanced price to determine which butterfat and skim prices to use. This approach is used in econometric Scenario H to analyze this proposal.[2] Proposed changes are listed in Table 2. A summary of results of an econometric analysis of this proposal is found in Table 3.

The proposal has the primary effects of lowering the protein price and raising the butterfat price used for Class III pricing. Over the nine-year period, the protein price falls by $0.5335 per pound on average. The Class III butterfat price rises by an average $0.3628 per pound above the baseline butterfat price average. The overall effect of the decrease in the protein price more than offsets the increase in the Class III butterfat price. With lower milk prices, milk supply decreases and dairy product prices increase. Higher butterfat and nonfat solids prices result in higher Class II and Class IV prices. The all-milk price falls by an average $0.18 per cwt, and producer revenue falls by an average $447 million per year over the nine-year projection period.

Proposal to Use Enhanced NASS Surveys.

Under this proposal, the National Agricultural Statistics Service would conduct a periodic survey of total milk components purchased and prices paid for those components. Since implementation of this proposal concerns information-gathering, no economic analysis was conducted relevant to this proposal.

[2] DPNM states that they advocate adoption of this proposal "depending in large part on the pending Class I/II hearing." The proposal advocated by National Milk Producers Federation in that hearing uses a significantly different approach.

Proposals by International Dairy Foods Association (IDFA)

Proposal to adjust the protein price formula to reflect the lower value and reduced volume of butterfat recoverable as whey cream.

Since the proposal did not state a specific adjustment or provide a source of data for estimating the lower value and reduced volume of butterfat recoverable as whey cream, Dairy Programs has not performed an economic analysis relevant to this proposal.

Proposal to eliminate the 3-cent barrel price adjustment contained in the protein price formula (Scenario I).

Eliminating the 3-cent addition to the barrel price would lower the weighted-average cheese price used in the protein formula. The amount of reduction depends upon the volumes of blocks and barrels sold. Over the seven-year period from 2000 through 2006, without the 3-cent addition to the barrel price, the weighted average cheese price would have been $0.0169 per pound less on average. In the model, this $0.0169 difference was subtracted from the baseline cheese price to determine the impact to the dairy industry. An econometric analysis was performed for this proposal and is labeled as Scenario I. A summary of results of an econometric analysis of this proposal is found in Table 3.

Eliminating the barrel adjustment effectively lowers the cheese price used in calculating the protein price. A lower protein price translates into lower Class I and Class III prices. The Federal order blend price falls by $0.05 per cwt., and the all-milk price falls by $0.04 per cwt. Total marketings decline slightly. This tightening results in increased dairy product prices over the projection period. The higher dairy product prices result in a small decrease in demand for manufactured dairy products. With a decrease in the Class I price, there is a small increase in Class I use.

Note that based on historical data, eliminating the three-cent adjustment to barrels in the cheese price calculation is a change of about twice the magnitude ($0.0169 per pound) as change of eliminating the barrel price from the cheese price calculation altogether as proposed by DFA and NWDA (Scenario B, $0.0087 per pound). As may be expected, the results of Scenario I are indeed about twice the magnitude of the changes for Scenario B.

Proposal by Maine Dairy Industry Association (MDIA)

Proposal to incorporate a factor to account for any monthly spread between component price calculations for milk and a competitive pay price for equivalent Grade A milk.

Implementation of this proposal would require use of a plant survey that does not exist at this time. Also, the proposal, does not state exactly how the factor would be computed. For these reasons, Dairy Programs is unable to conduct an economic impact analysis of this proposal.

Proposal by National All-Jersey Inc. (NAJ)

Proposal to eliminate the other solids price add the equivalent value of dry whey to the protein price formula.

This proposal would have the effect of raising the protein price and eliminating the other solids price. The change would be expected to have virtually no effect on the Class III skim milk price since eliminating the other solids price very closely offsets the proposed protein price increase. Likewise, there would be virtually no effect on the Class I price based on the advance Class III price. Below, the Class III skim milk formulas under the Interim Final Rule and the proposal are simplified. When rounded to the nearest cent per cwt, the proposed formula would usually have the same result as the Interim Final Rule formula.

Class III skim milk price formula under Interim Final Rule

= protein price $_{IFR}$ X 3.1 + other solids price $_{IFR}$ X 5.9
= protein price $_{IFR}$ X 3.1 + [(whey price – 0.1956) X 1.03] X 5.9
= protein price $_{IFR}$ X 3.1 + 6.077 X whey price – 1.188612

Proposed Class III skim milk price formula

= [protein price $_{IFR}$ + (whey price -0.1956) X 1.96] X 3.1 + 0
= protein price $_{IFR}$ X 3.1 + (1.96 X whey price -0.0383376) X 3.1
= protein price $_{IFR}$ X 3.1 + 6.076 X whey price – 1.1884656

where protein price $_{IFR}$ = the protein price as computed per Interim Final Rule
other solids price $_{IFR}$ = the other solids price as computed per the Interim Final Rule

Since the Class III skim milk price does not change for this proposal, no significant impacts are expected for orders that have pricing on a butterfat-skim basis. For orders where producer milk pricing is on a component basis there would be some impacts. Producers would see changes in their milk checks due to changes in the valuation of component levels in their milk.

Distributional effects among producers would occur in Federal orders with component pricing of producer milk. Some conceptual examples are used to illustrate the effects of the proposal. Table 5 provides an example of component prices under the Interim Final Rule and under the NAJ proposal. Using these component prices, minimum Federal order protein and other solids values are computed for five producers (Table 6). Federal order formulas and this proposal assume “standard” levels of 2.99 percent protein and 5.69 percent other-solids for producer milk. Producer 1, who has protein and other solids content at standard levels, has no change in total protein and other solids valuation. For Producer 2, with a protein level above

Table 5. Example of Component Prices Under Interim Final Rule and National All-Jersey (NAJ) Proposal ($ / pound)

Product Price Examples		Component prices	Interim final rule	NAJ proposal
Butter	1.2693	Butterfat	1.3789	1.3789
Cheese	1.3123	Protein	2.2346	2.5960
Nonfat dry milk	0.9837	Other solids	0.1899	0.0000
Whey	0.3800	Nonfat solids	0.8184	0.8184

Table 6. Examples: Outcomes for Five Producers with NAJ Proposal Without Accounting for Changes in Producer Price Differential

Producer 1--"Standard" component levels

Quantities				Scenario: Interim Final Rule		NAJ proposal	
	Quantities	Percent of total pounds		$/pound	FMMO Minimum Value ($)	$/pound	FMMO Minimum Value ($)
Protein pounds	2,990	2.99	Protein price	2.2346	6,681	2.5960	7,762
Other solids pounds	5,690	5.69	Other solids price	0.1899	1,081	0.0000	0
Total milk pounds	100,000		Total protein and other solids value		7,762		7,762
			Per cwt.		7.76		7.76
						gain or (loss)	0.00

Producer 2--Protein level above standard

Quantities				Scenario: Interim Final Rule		NAJ proposal	
	Quantities	Percent of total pounds		$/pound	FMMO Minimum Value ($)	$/pound	FMMO Minimum Value ($)
Protein pounds	3,090	3.09	Protein price	2.2346	6,905	2.5960	8,022
Other solids pounds	5,690	5.69	Other solids price	0.1899	1,081	0.0000	0
Total milk pounds	100,000		Total protein and other solids value		7,985		8,022
			Per cwt.		7.99		8.02
						gain or (loss)	0.04

Producer 3--Protein level below standard

Quantities				Scenario: Interim Final Rule		NAJ proposal	
	Quantities	Percent of total pounds		$/pound	FMMO Minimum Value ($)	$/pound	FMMO Minimum Value ($)
Protein pounds	2,890	2.89	Protein price	2.2346	6,458	2.5960	7,502
Other solids pounds	5,690	5.69	Other solids price	0.1899	1,081	0.0000	0
Total milk pounds	100,000		Total protein and other solids value		7,539		7,502
			Per cwt.		7.54		7.50
						gain or (loss)	(0.04)

Table 6 continued

Producer 4--Other Solids Above Standard

Quantities				Scenario			
				Interim Final Rule		NAJ proposal	
	Quantities	Percent of total pounds		$/pound	FMMO Minimum Value ($)	$/pound	FMMO Minimum Value ($)
Protein pounds	2,990	2.99	Protein price	2.2346	6,681	2.5960	7,762
Other solids pounds	5,900	5.90	Other solids price	0.1899	1,120	0.0000	0
Total milk pounds	100,000		Total protein and other solids value		7,802		7,762
			Per cwt.		7.80		7.76
						gain or (loss)	(0.04)

Producer 5--Other Solids Below Standard

Quantities				Scenario			
				Interim Final Rule		NAJ proposal	
	Quantities	Percent of total pounds		$/pound	FMMO Minimum Value ($)	$/pound	FMMO Minimum Value ($)
Protein pounds	2,990	2.99	Protein price	2.2346	6,681	2.5960	7,762
Other solids pounds	5,490	5.49	Other solids price	0.1899	1,043	0.0000	0
Total milk pounds	100,000		Total protein and other solids value		7,724		7,762
			Per cwt.		7.72		7.76
						gain or (loss)	0.04

standard and holding the other solids level at standard, the total protein and other solids valuation for the producer increases under the proposal. For Producer 3, with protein level below standard and holding the other solids level at standard, the total protein and other solids valuation for the producer decreases under the proposal. The opposite situations would exist when the other solids level is varied from standard (Producers 4 and 5).

Proposal by National Milk Producers Federation (NMPF)

Proposal to incorporate a monthly energy cost adjuster in computing make allowances (Scenario J)

This proposal was presented by NMPF at the Reconvened Hearing concerning Class III and Class IV make allowances during the week of September 14, 2006. Make allowances would be updated monthly based on values of the Producer Price Indices (PPIs) for industrial electricity (series WPU 0543) and industrial natural gas (series WPU 0553) as published by the Bureau of Labor Statistics, U.S. Department of Labor (http://www.bls.gov/data/).

The Energy Information Administration (EIA) of the U.S. Department of Energy has published projections for industrial electricity and industrial natural gas prices in its *Annual*

Energy Outlook 2007 (http://www.eia.doe.gov/oiaf/aeo/index.html). They also provide historical data for these prices (http://www.eia.doe.gov/). The historical data, as expected, is highly correlated with the associated PPIs. Table 7 displays results of regression analyses using the PPIs as dependent variables and the historical prices reported by EIA as explanatory variables. The equations explain over 95 percent of the variation in the PPIs, as measured by R-squares. Using the price projections provided by EIA, PPIs can be projected through 2016 (Table 8 and Figure 1). Electricity prices are expected to rise slightly from their 2006 levels, reaching a peak in 2008, and then fall through 2015. Natural gas prices are expected to fall from their 2006 levels through 2015.

Table 7. Producer Price Indices for Industrial Electricity and Industrial Natural Gas

Dependent variable	Parameter	Estimate	t-Value	Pr > |t|	R-Square
PPI, WPU 0543, industrial electricity	Intercept	21.16	2.97	0.0128	
	Industrial electricity price reported by EIA [1]	8.15	16.70	<.0001	0.9621
(12 observations, 1994-2005)					
PPI, WPU 0553, industrial natural gas	Intercept	4.71	0.51	0.6210	
	Industrial natural gas price reported by EIA	31.19	18.47	<.0001	0.9771
(9 observations, 1997-2005)					

[1] EIA = Energy Information Agency, U.S. Department of Energy

The monthly make allowance adjustments proposed by NMPF are calculated as follows:

Make allowance adjustment =

$$[(\text{WPU 0543 PPI}_{current} / \text{WPU 0543 PPI}_{base}) - 1] * \text{electricity cost}_{base}$$
$$+ [(\text{WPU 0553 PPI}_{current} / \text{WPU 0553 PPI}_{base}) - 1] * \text{natural gas cost}_{base}$$

The order language that NMPF proposed was based on data from the CDFA study and data supplied by the Rural Business Cooperative Data Service (RBCS) study. Both studies covered plant costs for the calendar year 2004. Make allowances from the Interim Final Rule are based upon data from the Cornell study and the CDFA study. The RBCS study was not used. Dr. Roger Cryan of NMPF in his testimony for that hearing states:

> The energy costs in the RBS and CDFA surveys are for 2004. Dr. Stephenson has made calculations to express the energy costs contained in his survey in 2005 prices. Using the same PPIs we are discussing, the Stephenson data (if it is made available to the record) can be expressed at 2004 prices or the RBS an CDFA data can be expressed in 2005 prices. Once all these energy costs are expressed consistently, they could be combined using an appropriate

Table 8. Electricity and Natural Gas Price Projections

		Industrial Electricity		Industrial Natural Gas	
	Year	EIA[1] outlook price	PPI[2], Series WPU 0543	EIA outlook price	PPI, Series WPU 0553
	1997	13.28	130.8	3.59	109.3
	1998	13.13	130.0	3.14	103.6
	1999	12.98	128.9	3.12	103.3
	2000	13.60	131.5	4.45	139.0
Historic	2001	14.80	141.1	5.24	177.3
values	2002	14.30	139.9	4.02	136.5
	2003	14.98	145.8	5.89	180.5
	2004	15.88	147.2	6.47	201.7
	2005	16.69	156.2	8.16	249.4
Preliminary	2006	18.26	172.8	7.45	245.2
	2007	18.77	174.1	7.36	234.4
	2008	18.85	174.8	7.29	232.1
	2009	18.52	172.1	6.74	215.0
	2010	18.01	168.0	6.43	205.2
Projections	2011	17.25	161.8	6.02	192.5
	2012	16.79	158.0	5.87	187.7
	2013	16.59	156.4	5.68	181.9
	2014	16.47	155.4	5.69	182.2
	2015	16.46	155.3	5.65	180.9

[1] EIA = Energy Information Administration, U.S. Department of Energy

[2] PPI = Producer Price Index as reported by the Bureau of Labor Statistics, U.S. Department of Labor, projections are by USDA AMS Dairy Programs and based upon EIA price projections

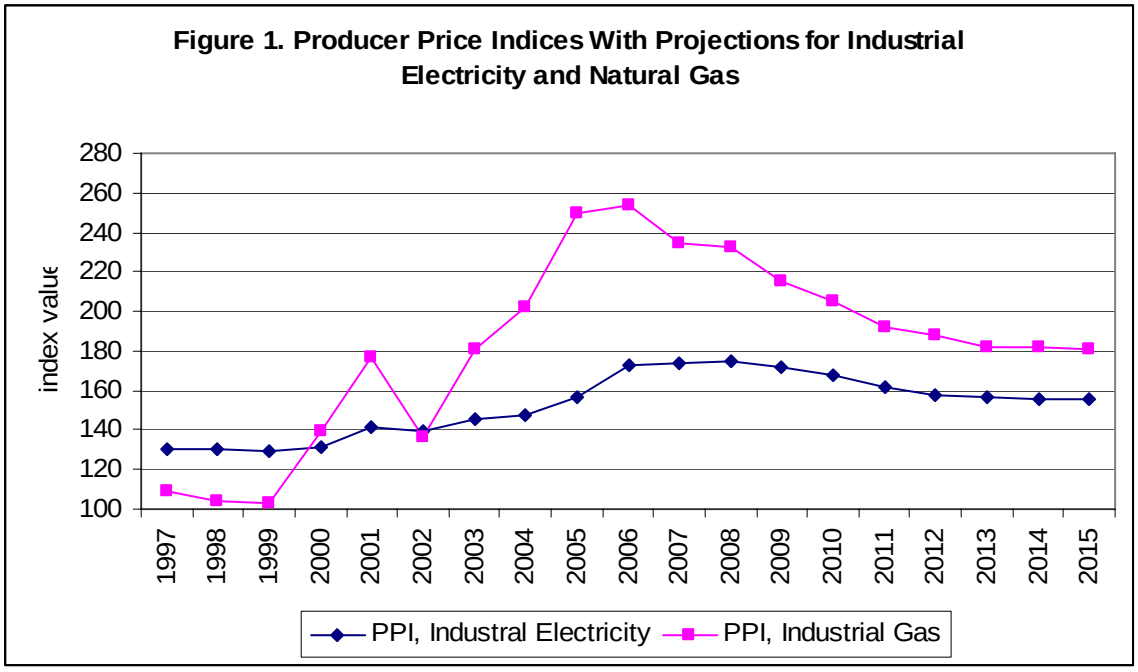
weighting to establish a 2004 or 2005 base energy cost. The make adjustment formulas can use the corresponding annual average PPIs as the denominators, with current PPIs as numerators.

Table 9 displays manufacturing costs and associated energy costs from the CDFA study.[3] The CDFA study covers the calendar year 2004 while the Cornell study basically covers the period from July 2004 through June 2005.[4] For this analysis, the July 2004 through June 2005 period of the Cornell study is chosen as the base period. CDFA data is indexed using the corresponding PPIs in order to make data from the two studies consistent with this base period (Table 10). Weighted average base-period make allowances are then computed (Table 11).

[3] Since data from the Rural Business Cooperative Service was not used to determine make allowances for the Interim Final Rule, it is not used in this analysis.

[4] The Cornell study states:

> Plants were allowed to select the most recent twelve-month period which corresponds to their fiscal year. Because the plants have some latitude for time period, the results do not correspond to a calendar year or even to the same twelve-month period. The most common 12-month time period was from July 2004 through June 2005. These 12 months encompass about 63 percent of the observations. Another 21 percent of the observations were from earlier months and the remaining 16 percent were more recent.



Source: Historical data as reported by the Bureau of Labor Statistics, U.S. Department of Labor, projections by USDA AMS Dairy Programs based upon price projections from Energy Information Administration, U.S. Department of Energy.

Data from the Cornell study concerning energy costs per pound have not yet been released to the public. For illustrative purposes, this analysis assumes that energy costs of plants surveyed for the Cornell study are in the same proportion to total manufacturing costs as from the CDFA study adjusted for the time-period difference. Base-period make allowances and energy costs using these assumptions are displayed in Table 12. Using base-period make allowances and energy costs along with PPI projections, indexed energy costs and the corresponding make allowances are computed for the projection period (Table 13). The cheese and whey make allowances are higher those of the Interim Final Rule through 2011 and then fall below that level. The NFDM make allowance is higher than that of the Interim Final Rule through 2010, but falls below that level thereafter. Butter, which has energy costs more heavily weighted with electricity, has higher make allowances throughout the projection period.

An econometric analysis was performed for this proposal and is labeled as Scenario J. Average changes in make allowances are listed in Table 2. A summary of results of an econometric analysis of this proposal is found in Table 3. Over the nine-year projection period, changes in make allowances are very small on average, rounding to $0.001 for each product. Average changes in all of the milk prices are $0.00 per cwt, and there is no change in average producer revenue over the nine-year projection period.

Table 9. CDFA Data for 2004

		Electricity (Average PPI = 147.2)		Fuels (Average PPI = 201.7)	
	Weighted Avg. Mfg. Costs	Dollars	Percent	Dollars	Percent
Cheese	0.1769	0.0086	4.86	0.0078	4.41
Butter	0.1368	0.0091	6.65	0.0019	1.39
NFDM [1]	0.1733	0.0208	12.00	0.0253	14.60
Whey	0.2673	0.0334	12.50	0.0226	8.45

[1] Energy costs for NFDM differ from those in NMPF's testimony at the previous hearing. For NFDM, costs for medium cost plants were used in computing make allowances for the Interim Final Rule. CDFA energy costs for medium-cost plants are used for this analysis.

Table 10. CDFA Data for 2004 with Electricity and Fuel Costs Indexed to July 2004-June 2005

		Electricity (Average PPI = 150.1)		Fuels (Average PPI = 213.4)	
	Adjusted Weighted Avg. Mfg. Costs	Dollars	Percent	Dollars	Percent
Cheese	0.1775	0.0088	4.94	0.0083	4.65
Butter	0.1371	0.0093	6.77	0.0020	1.47
NFDM	0.1752	0.0212	12.11	0.0268	15.28
Whey	0.2693	0.0341	12.65	0.0239	8.88

Table 11. Calculation of July 2004-June 2005 Base Make Allowances for Scenario J (CDFA data adjusted for energy price changes in between CDFA and Cornell study time periods)

Cheese	
Weighted average cost, Cheddar cheese, $/pound:	
CDFA Study [1]	0.1775
Cornell Study [2]	0.1638
2005 volume, American cheese [3], 1000 pounds:	
California	
Cheddar	522,624
Colby and Monterrey Jack	332,080
Total American	854,704
U.S. other than California	
Cheddar	2,529,791
Colby and Monterrey Jack	428,455
Total American	2,958,246
U.S.	
Cheddar	3,052,415
Colby and Monterrey Jack	760,535
Total American	3,812,950
Weighted average cost per pound:	
Before sales and administrative costs	0.1669
Sales and administrative costs	0.0015
Proposed make allowance	0.1684

Whey	
Weighted average cost, $/pound:	
Cornell Study	0.1941
Sales and administrative costs	0.0015
Proposed make allowance	0.1956

NFDM	
Weighted average cost, $/pound:	
CDFA Study--medium cost plants	0.1752
Cornell Study 4	0.1423
2005 volume, 1000 pounds:	
California	506,452
U.S. other than California	679,652
U.S.	1,186,104
Weighted average cost per pound	
Before sales and administrative costs	0.1563
Sales and administrative costs	0.0015
Proposed make allowance	0.1578

Butter	
Weighted average cost, $/pound:	
CDFA Study	0.1371
Cornell Study	0.1108
2005 volume, 1000 pounds:	
California	407,872
U.S. other than California	939,355
U.S.	1,347,227
Weighted average cost per pound:	
Before sales and administrative costs	0.1188
Sales and administrative costs	0.0015
Proposed make allowance	0.1203

[1] Based on Weighted Average Manufacturing Costs for Butter, Nonfat Powder, Skim Whey Powder and Cheddar Cheese, California Department of Food and Agriculture, Costs for Calendar Year 2004, Amended January 2006--Adjusted using Producer Price Indices for Electricity and Natural Gas

[2] Cost of Processing in Cheese, Whey, Butter, and Nonfat Dry Milk Plants, by Mark Stephenson, Cornell Program on Dairy Markets and Policy, September 2006

[3] Source for all volumes: USDA, National Agricultural Statistics Service, 2005 values

[4] The text of the Cornell study indicates that the weighted average nonfat dry milk manufacturing costs is $0.1410 per pound. This was corrected to $0.1423 per pound at the hearing.

Table 12. Assumed July 2004-June 2005 Base Make Allowances and Energy Costs Based Upon CDFA Adjusted Proportions

	Make Allowances			Electricity		Fuels	
		With CDFA data adjusted to 07/04 to 06/05 base period		Average PPI = 150.1		Average PPI = 213.4	
Product	From Interim Final Rule	Including sales and admin. costs	Excluding sales and admin. costs [1]	Dollars	Percent [2]	Dollars	Percent
Cheese	0.1682	0.1684	0.1669	0.0082	4.94	0.0078	4.65
Butter	0.1202	0.1203	0.1188	0.0080	6.77	0.0017	1.47
NFDM	0.1570	0.1578	0.1563	0.0189	12.11	0.0239	15.28
Whey	0.1956	0.1956	0.1941	0.0246	12.65	0.0172	8.88

[1] Make allowances excluding sales and administrative costs are usd to determine assumed energy costs based on proportions from adjusted CDFA data.

[2] Percentages for electricity and fuels for this table match those in Table 10.

Table 13. Indexed Energy Costs and Effective Make Allowances for Scenario J

Cheese

		Electricity		Fuels				
	Year	PPI, Series WPU 0543	Cost per pound	PPI, Series WPU 0553	Cost per pound	Non-energy costs held constant	Effective make allowance	Change from Interim Final Rule
Base	07/04-06/05	150.1	0.0082	213.4	0.0078	0.1524	0.1684	0.0002
Proposal results using projected PPIs	2007	174.1	0.0095	234.4	0.0086	0.1524	0.1705	0.0023
	2008	174.8	0.0095	232.1	0.0085	0.1524	0.1704	0.0022
	2009	172.1	0.0094	215.0	0.0079	0.1524	0.1697	0.0015
	2010	168.0	0.0092	205.2	0.0075	0.1524	0.1691	0.0009
	2011	161.8	0.0088	192.5	0.0070	0.1524	0.1683	0.0001
	2012	158.0	0.0086	187.7	0.0069	0.1524	0.1679	-0.0003
	2013	156.4	0.0085	181.9	0.0066	0.1524	0.1676	-0.0006
	2014	155.4	0.0085	182.2	0.0067	0.1524	0.1675	-0.0007
	2015	155.3	0.0085	180.9	0.0066	0.1524	0.1675	-0.0007

Butter

		Electricity		Fuels				
	Year	PPI, Series WPU 0543	Cost per pound	PPI, Series WPU 0553	Cost per pound	Non-energy costs held constant	Effective make allowance	Change from Interim Final Rule
Base	07/04-06/05	150.1	0.0080	213.4	0.0017	0.1106	0.1203	0.0001
Proposal results using projected PPIs	2007	174.1	0.0093	234.4	0.0019	0.1106	0.1217	0.0015
	2008	174.8	0.0093	232.1	0.0018	0.1106	0.1218	0.0016
	2009	172.1	0.0092	215.0	0.0017	0.1106	0.1215	0.0013
	2010	168.0	0.0090	205.2	0.0016	0.1106	0.1212	0.0010
	2011	161.8	0.0086	192.5	0.0015	0.1106	0.1208	0.0006
	2012	158.0	0.0084	187.7	0.0015	0.1106	0.1205	0.0003
	2013	156.4	0.0083	181.9	0.0014	0.1106	0.1204	0.0002
	2014	155.4	0.0083	182.2	0.0015	0.1106	0.1203	0.0001
	2015	155.3	0.0083	180.9	0.0014	0.1106	0.1203	0.0001

Table 13 continued on next page.

Table 13 continued

Nonfat dry milk

	Year	Electricity		Fuels		Non-energy costs held constant	Effective make allowance	Change from Interim Final Rule
		PPI, Series WPU 0543	Cost per pound	PPI, Series WPU 0553	Cost per pound			
Base	07/04-06/05	150.1	0.0189	213.4	0.0239	0.1150	0.1578	0.0008
Proposal results using projected PPIs	2007	174.1	0.0219	234.4	0.0263	0.1150	0.1632	0.0062
	2008	174.8	0.0220	232.1	0.0260	0.1150	0.1630	0.0060
	2009	172.1	0.0217	215.0	0.0241	0.1150	0.1607	0.0037
	2010	168.0	0.0212	205.2	0.0230	0.1150	0.1591	0.0021
	2011	161.8	0.0204	192.5	0.0216	0.1150	0.1569	-0.0001
	2012	158.0	0.0199	187.7	0.0210	0.1150	0.1559	-0.0011
	2013	156.4	0.0197	181.9	0.0204	0.1150	0.1551	-0.0019
	2014	155.4	0.0196	182.2	0.0204	0.1150	0.1550	-0.0020
	2015	155.3	0.0196	180.9	0.0203	0.1150	0.1548	-0.0022

Dry whey

	Year	Electricity		Fuels		Non-energy costs held constant	Effective make allowance	Change from Interim Final Rule
		PPI, Series WPU 0543	Cost per pound	PPI, Series WPU 0553	Cost per pound			
Base	07/04-06/05	150.1	0.0246	213.4	0.0172	0.1538	0.1956	0.0000
Proposal results using projected PPIs	2007	174.1	0.0285	234.4	0.0189	0.1538	0.2012	0.0056
	2008	174.8	0.0286	232.1	0.0187	0.1538	0.2012	0.0056
	2009	172.1	0.0282	215.0	0.0173	0.1538	0.1993	0.0037
	2010	168.0	0.0275	205.2	0.0165	0.1538	0.1979	0.0023
	2011	161.8	0.0265	192.5	0.0155	0.1538	0.1958	0.0002
	2012	158.0	0.0259	187.7	0.0151	0.1538	0.1948	-0.0008
	2013	156.4	0.0256	181.9	0.0147	0.1538	0.1941	-0.0015
	2014	155.4	0.0255	182.2	0.0147	0.1538	0.1940	-0.0016
	2015	155.3	0.0255	180.9	0.0146	0.1538	0.1938	-0.0018