

Food and Agricultural
Policy Research Institute



May 2007

#10-07

Staff Report

Effect of the National
Milk Producers
Federation Proposal for
the 2007 Farm Bill on the
US Dairy Sector

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Published by the Food and Agricultural Policy Research Institute at The University of Missouri–Columbia, 101 Park DeVillle Suite E; Columbia, MO 65203 in May 2007. FAPRI is part of the College of Agriculture, Food and Natural Resources.

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Material in this publication is based upon work supported by the Cooperative State Research, Education and Extension Service; US Department of Agriculture, under Agreement No. 2006-34149-16987.

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Effect of the National Milk Producers Federation 2007 Farm Bill Package on the US Dairy Sector

At the request of Senator Norm Coleman (R - MN), the Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri–Columbia has examined two provisions contained in a recently released farm bill package from the National Milk Producers Federation (NMPF). The provisions analyzed are the milk producer security program and the changes made to the dairy product price support program. The other provisions of the NMPF proposal will result in changes to the sector but are outside the scope of this current analysis (see http://www.nmpf.org/files/NMPF_Policy_Direction.pdf for a full description of the NMPF proposal).

Milk Producer Security Program (MPSP)

Dairy farmers operating when the legislation is enacted would receive a direct payment of \$0.50 per cwt on their historical production base, defined as either 2006 milk marketings or the average of 2005 and 2006 milk marketings, up to a total of \$40,000 per year. This program is completely decoupled from current milk marketings and current milk prices. Since this program uses historical marketings to determine the payment base, this analysis assumes operations would be unable to restructure in any meaningful way to avoid the \$40,000 payment cap.

Table 1 provides an overview of state-level spending under the MPSP. In total, the analysis shows the program will cost \$560.2 million annually. Data on the size distribution of dairy operations reported by the National Agricultural Statistics Service (NASS) for 2005 and 2006 was coupled with complementary information available on the percentage of expected eligible operations participating in the Milk Income Loss Contract (MILC) program to derive the cost estimate for this part of NMPF's program.

The \$40,000 payment limitation contained in the NMPF proposal does have regional effects on the distribution of payments on a state-level basis. As seen in table 1, California receives only 12% of total US payments under the program, despite accounting for 21% of 2006 milk production. Conversely, Wisconsin receives 19% of the total payments while representing only 13% of 2006 milk production. A binding payment limitation will have a regional effect on payments that favors states made up of smaller producers. As the NMPF proposal implies, payment coverage for up to 8 million pounds of historically based production, has much smaller regional effects than the current 2.4 million pound marketings cap included in the MILC program.

Table 1. MPSP Direct Payments Under the NMPF Farm Bill Proposal

	Annual Payments (Million Dollars)	Percent of Total Payments	Percent of 2006 Milk Production
Arizona	4.0	1%	2%
California	67.7	12%	21%
Colorado	4.5	1%	1%
Florida	4.9	1%	1%
Georgia	4.9	1%	1%
Idaho	14.5	3%	6%
Illinois	9.3	2%	1%
Indiana	9.8	2%	2%
Iowa	17.3	3%	2%
Kansas	4.6	1%	1%
Kentucky	6.1	1%	1%
Maryland	4.6	1%	1%
Michigan	26.6	5%	4%
Minnesota	38.3	7%	5%
Missouri	8.5	2%	1%
New Mexico	6.9	1%	4%
New York	48.9	9%	7%
North Carolina	4.5	1%	1%
Ohio	19.9	4%	3%
Oklahoma	3.6	1%	1%
Oregon	7.0	1%	1%
Pennsylvania	44.6	8%	6%
South Dakota	6.0	1%	1%
Tennessee	5.2	1%	1%
Texas	16.4	3%	4%
Utah	5.9	1%	1%
Vermont	11.4	2%	1%
Virginia	7.7	1%	1%
Washington	14.0	2%	3%
Wisconsin	105.4	19%	13%
Remaining States	27.6	5%	3%
U.S. Total	560.2	100%	100%

The annual MPSP payments remain unchanged in this analysis since they are not based on either current milk marketings or milk prices. One assumption made for this analysis is that these de-coupled payments would only have 25% of the effect on milk production that a payment that is otherwise coupled to production would have.

Changes to the Dairy Product Price Support Program

The NMPF proposal raises the support price for all dairy products. The nonfat dry milk support price is set at \$0.84 per pound, the butter support price is set at \$1.07 per pound and the block cheddar cheese price is set at \$1.19 per pound. Under this proposal, the secretary of agriculture is allowed but not required to adjust the individual purchase prices down in the event of large surpluses. Since the secretary is not required by law to make these support price changes in periods of large government stock accumulation, this portion of the proposal is not included in this analysis. Likewise, no changes are made to the assumed product price levels that would trigger sales of government inventories back into product markets since the sell-back prices in the NMPF proposal are minimum prices and are below what was used in the FAPRI baseline.

FAPRI Model Results

The results of the NMPF proposal on the US dairy sector are very small. Dairy cow inventories grow by only 17 thousand head relative to the baseline in 2016, and the resulting growth in milk production is 0.4 billion pounds. The increase in milk production that comes primarily from the MPSP direct payment program results in lower US all milk prices, but these prices are only \$0.03 below baseline on average over the 2008 to 2016 period (table 2).

Despite increases in the support price levels for dairy products under the NMPF proposal, wholesale dairy prices are unchanged or fall slightly below baseline levels. These lower wholesale price effects are the result of two major factors. First, although this analysis was carried out using the FAPRI stochastic baseline, very few of the stochastic alternatives had dairy product prices at levels that were low enough to trigger any price support activity. This resulted in only a small impact on wholesale dairy prices (the price support changes would have no effect when measured against the FAPRI deterministic baseline). Second, with the very modest expansion in milk production reported, those stochastic alternatives that do have some removals result in slightly higher government inventories available to the market as unrestricted sales during higher wholesale price stochastic alternatives.

Table 2. Change in the U.S. Dairy Sector Under the NMPF Farm Bill Proposal

Calendar Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average
U.S. Milk Supply										
Dairy Cows (Thou. Head)	3	8	11	13	15	16	16	16	17	13
Milk Yield (Lbs.)	7	5	3	0	0	-1	-2	-1	-3	1
Milk Production (Bil. Lbs.)	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3
Min. FMMO Class Prices (Dollars per Cwt)										
Class I Mover	0.00	-0.01	-0.02	-0.04	-0.04	-0.05	-0.05	-0.04	-0.06	-0.03
Class II	0.00	-0.01	-0.03	-0.05	-0.05	-0.07	-0.08	-0.07	-0.08	-0.05
Class III	0.01	0.00	-0.02	-0.03	-0.03	-0.04	-0.04	-0.03	-0.04	-0.03
Class IV	0.00	-0.01	-0.03	-0.05	-0.05	-0.07	-0.08	-0.07	-0.08	-0.05
All Milk Price	0.00	-0.01	-0.02	-0.04	-0.04	-0.05	-0.05	-0.04	-0.06	-0.03
Direct Payment	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Wholesale Prices (Dollars per Pound)										
Butter, CME	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	-0.01	0.00
Cheese, Am., 40#, CME	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nonfat Dry Milk, AA	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	-0.01	0.00
Evaporated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Product Production (Million Pounds)										
American Cheese	1	1	2	2	3	4	4	4	4	3
Other Cheese	0	1	2	2	3	4	4	3	5	3
Butter	5	8	10	10	11	11	11	12	11	10
Nonfat Dry Milk	10	15	18	18	21	21	21	25	21	19
Dairy Outlays (Fiscal Year) (Million Dollars)										
Milk Producer Security	560	560	560	560	560	560	560	560	560	560
Other Dairy Outlays	3	18	17	16	22	22	21	30	20	19
Total	563	578	577	576	582	583	581	590	580	579

Figures 1 and 2 shows the 500 stochastic alternatives for wholesale nonfat dry prices and government net removals in 2012. The 500 outcomes in both figures were sorted from low to high baseline nonfat dry milk prices. Under the baseline, only the first 36 stochastic outcomes had prices low enough that net removals were required. The remaining 464 outcomes resulted in no government activity or had previously accumulated removals put back on the market during higher price outcomes.

Figure 1. 2012 Nonfat Dry Milk Prices

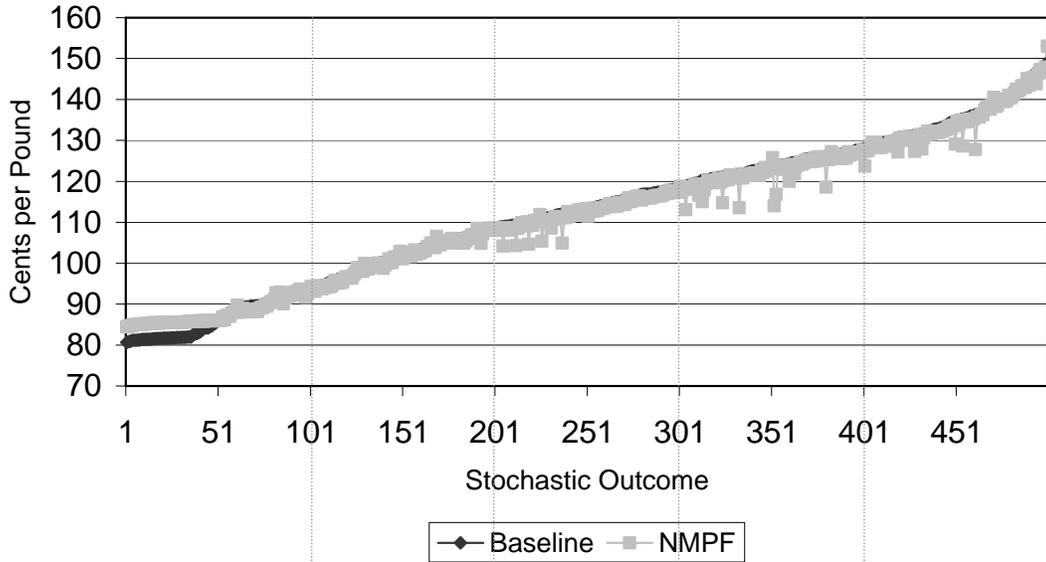
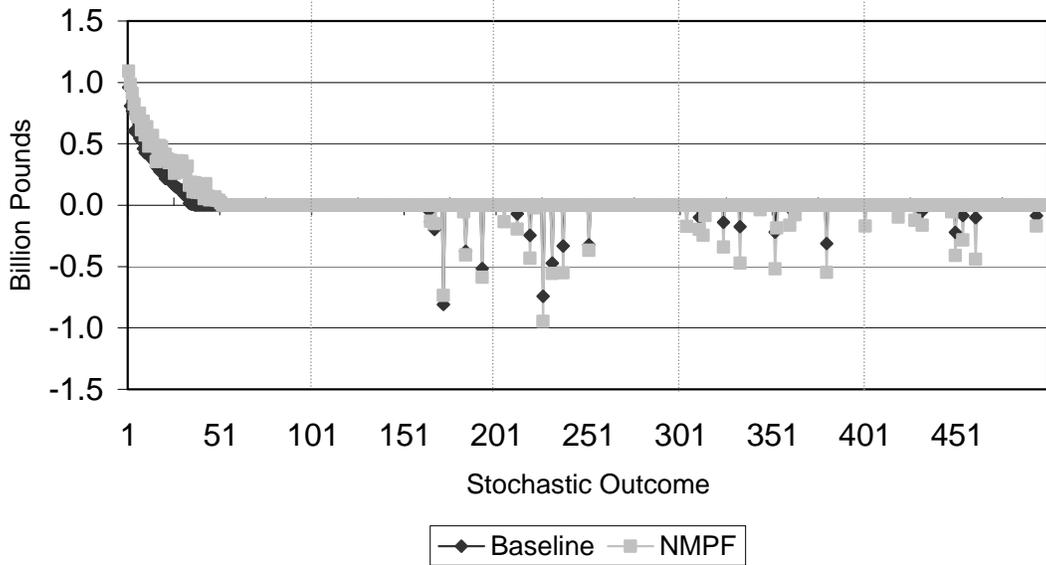


Figure 2. 2012 Nonfat Dry Milk Net Removals in Billion Pounds versus Stochastic Outcome for Baseline and NMPF scenarios.

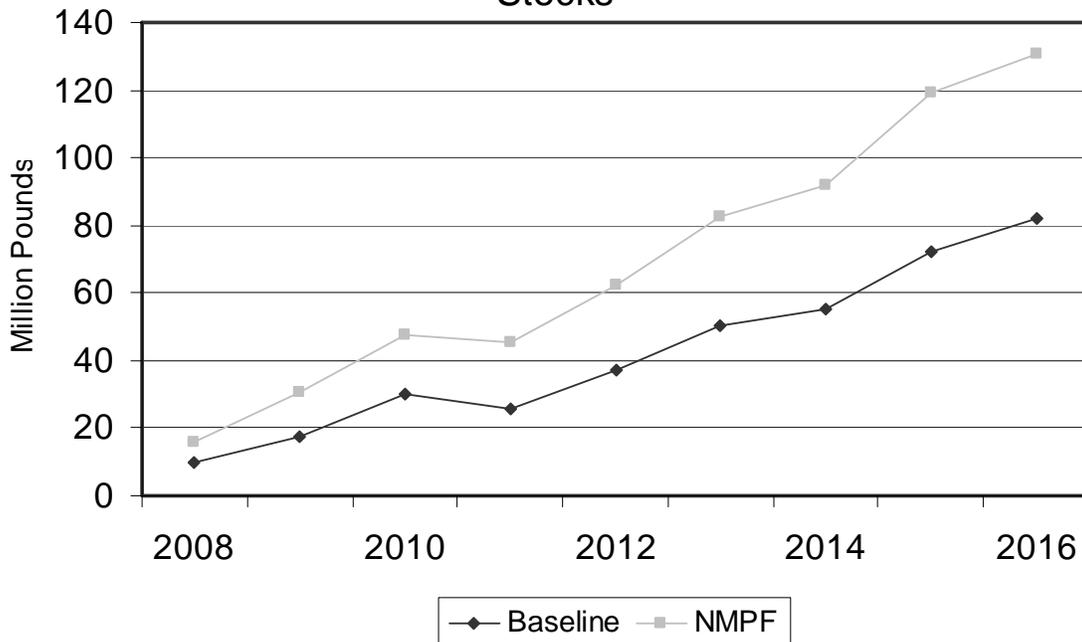


Raising the nonfat dry purchase price under the scenario resulted in 52 outcomes where prices were low enough for removals to occur. The effect of raising the nonfat dry purchase price can be seen on the left side of figure 1, where prices are higher under the NMPF alternative and at the left side of figure 2 where higher removal levels occur with the higher support price level.

Around sorted outcomes 200 to 250 shown in figures 1 and 2, the effects of higher levels of previously accumulated removals in low price outcomes can be seen. The amount of government stocks that can return to the market as unrestricted sales are higher under the NMPF proposal as denoted by the more negative net removals in figure 2, which results in lower price outcomes in figure 1.

These effects are small and extremely dependent upon the baseline price levels used in this analysis. Figure 3 highlights that although nonfat dry government stocks are higher under this scenario, they average only 27 million pounds more than baseline levels. The additional stocks of all dairy products held by the government under the NMPF proposal results in government price support expenditures increasing on average by \$19 million (table 2).

Figure 3. Average Nonfat Dry Milk CCC Ending Stocks



A very similar picture can be shown for butter prices and removals. However, in the case of butter the effects are more pronounced because a larger percentage of the 500 stochastic alternatives fall at or below the government purchase trigger. Figures 4 and 5 shows that roughly the first 200 sorted from lowest to highest price outcomes have butter entering government stocks. Figure 4 shows the higher prices that result in this range by raising the support price for butter under the NMPF proposal and the larger removal levels for butter that result in figure 5.

Figure 4. 2012 Butter Prices

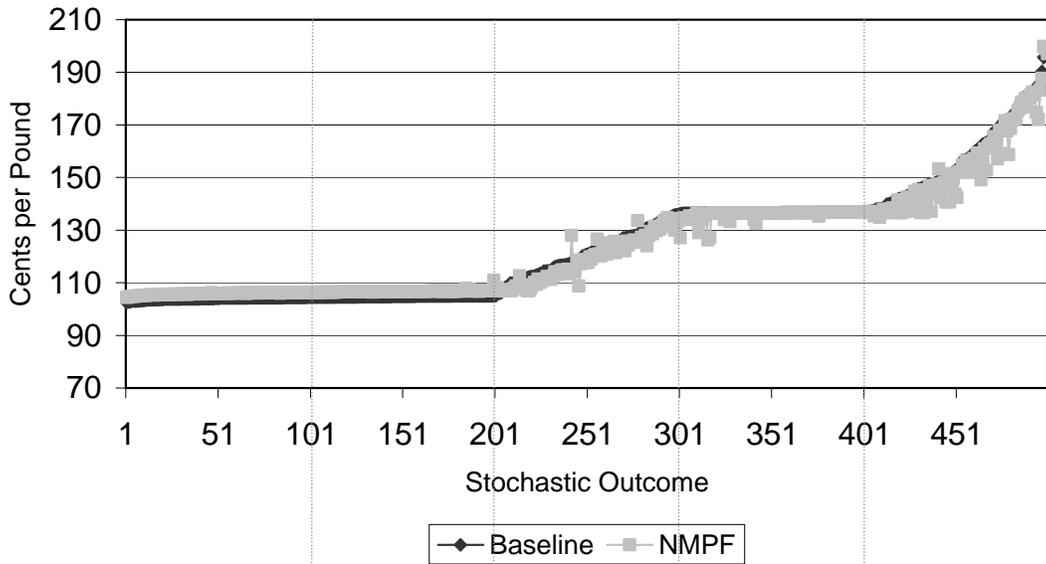
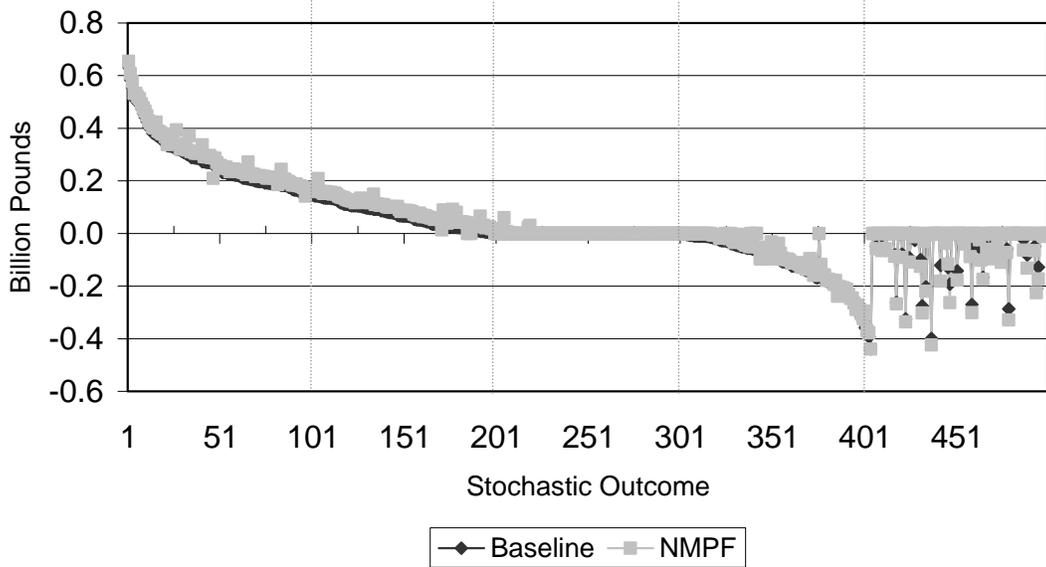


Figure 5. 2012 Butter Net Removals



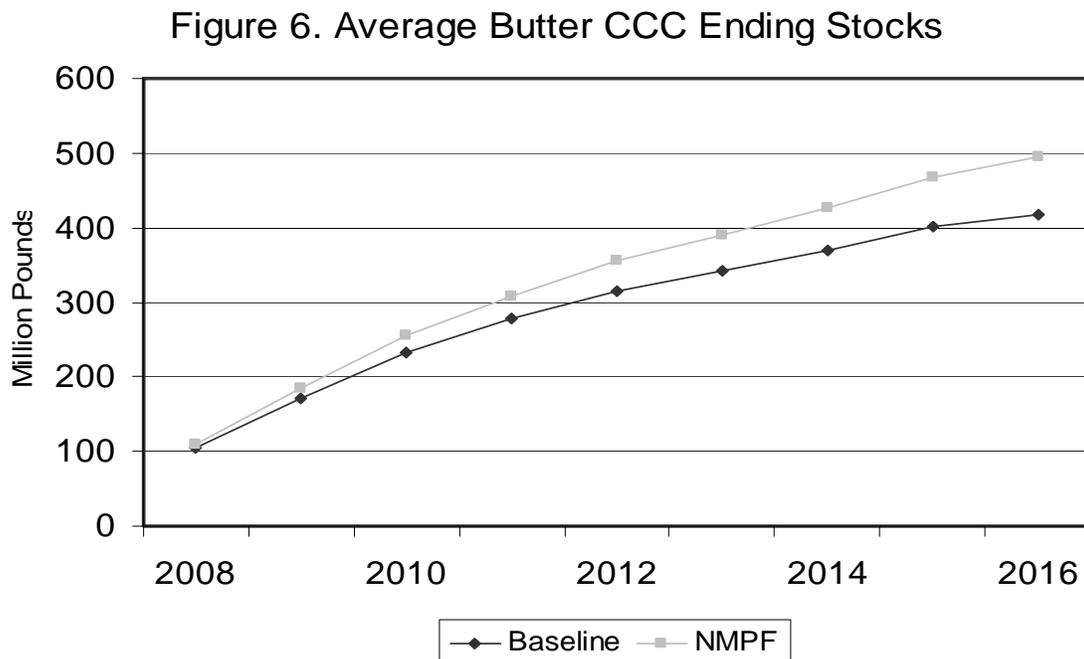
From outcomes 200 to 300 there is virtually no government activity since prices are above support but below a level to allow unrestricted sales. The price level for unrestricted sales remains the same for both the baseline and the scenario.

The issue of the appropriate sell-back level is open to debate since current policy does not explicitly provide a price level at which the secretary should start sales of government stocks.

Outcomes 300 to 400 show price levels that are near the sell-back point. These outcomes show that government sales were sufficient to keep prices at or near the unrestricted sales level.

At stochastic outcomes 400 and above butter prices rise as government stock inventories are exhausted before prices fall all the way back to the trigger point for unrestricted sales. However, prices are lower under the NMPF proposal in this range since stock levels that can return to the market are larger as can be noted by the more negative net removals shown in outcomes 400 and above in figure 5 for the NMPF proposal relative to the baseline.

Figure 6 highlights larger stock levels under the NMPF proposal. On average, butter stocks average 40 million pounds higher under this alternative.



Summary

The two provisions of the NMPF farm bill proposal analyzed in this report do not result in substantially different market outcomes for the dairy sector. Production of milk and milk products are very near baseline levels, as are market prices for these products. Government outlays average \$579 million higher under the proposal due in large part to annual outlays of \$560 million on the MPSP direct payment portion of the NMPF proposal.

The amount of 2006 milk marketings that are eligible for the MPSP payment is near 60 percent. Combining the lower market price for milk with the MPSP payment would result in an average US net effect of \$0.25 to \$0.30 per cwt. Individual producer effects will differ depending on operation size. The percentage of milk that is covered under the MPSP will erode over time, as annual increases in milk marketings occur.