

Dairy Outlook: July 2020

Previous Class III price lows have slingshot to new highs, but Class I, II, and IV prices still lag causing negative producer price differentials.

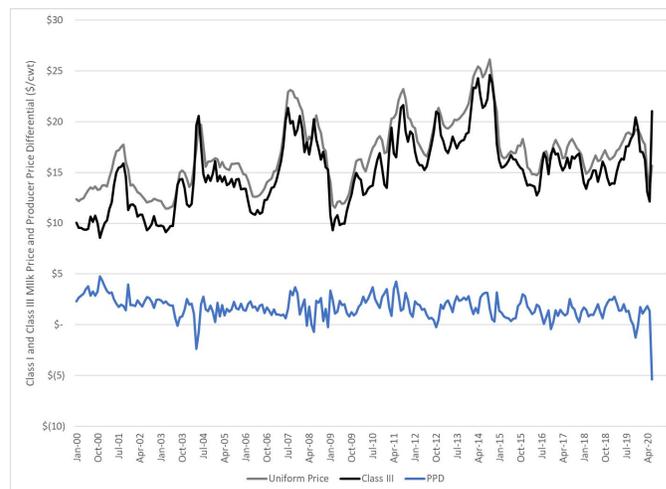


"duisburg-tiger-and-turtle-ruhr-area" by Norbert Waldhausen. pixabay.com

Mixed Messages with Milk Prices

The latest All Milk Price released was for May 2020 and both U.S. and PA prices were at an anticipated 11 month low with \$13.60 and \$14.00/cwt, respectively. At the same time, Class III prices did a V-turn and climbed to over \$21/cwt in June from a low of \$12/cwt in May. Current futures has Class III remaining above \$20/cwt through September 2020. While this appears to be good news, the other Classes are not rebounding as quickly, causing producers to be impacted by a negative Producer Price Differential (PPD). Figure 1 depicts the historical trends for Class I, Class III, and the PPD over the past 20 years in Federal Order 1. Only a few times has the PPD gone negative, and typically it happens when there is an abrupt change in milk price that impacts a few sectors. Producers are paid on the Class III value of their milk with an adjustment, the PPD, for how milk is pooled in their federal order, and the value of products in Class I, II, III and IV (statistical uniform price). A negative PPD happens when the Class III price is higher than the pooled value of milk. Another interesting note from Figure 1 is that this recent PPD is the most severe observed in the past 20 years for Federal Order 1.

Figure 1: Federal Milk Market Order 1 Historical Class III, Uniform Price, and Producer Price Differential



USDA Ag Marketing Services, 2020.

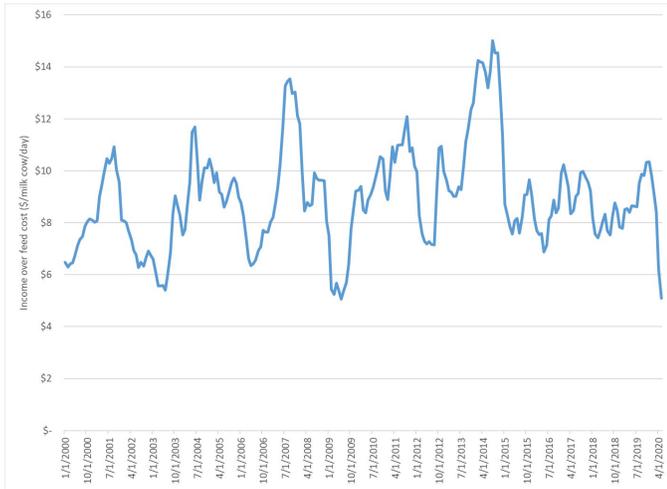
Income Over Feed Cost Is Critical

Given the milk price anomalies seen over the past few months, it is hard to say just where the next few months will end up, or what 2020 as a whole will average in milk price. There have been some waves, albeit at lower magnitudes, ripple through the feed side of the equation as well. It remains vital to look at the income over feed cost per milk cow per day (IOFC) to determine what is left to cover all remaining expenses. Figure 2 is the estimated Pennsylvania IOFC for the past 20 years based on the state All Milk Price, corn grain, alfalfa hay, and soybean meal for cows averaging 75 pounds of milk. With the dramatic drop in milk price in the last two months, IOFC is entering levels not experienced since 2009. With estimates of IOFC around \$5/cow, there is little left after paying for milk cow feed to cover other expenses on the farm. For 2019, the average IOFC breakeven for 54 conventional farms' dairy enterprise was \$5.18/cow/day, so many farms will have issues cash flowing for the foreseeable future.

Figure 2: Historical Pennsylvania Estimate of Income Over Feed Cost



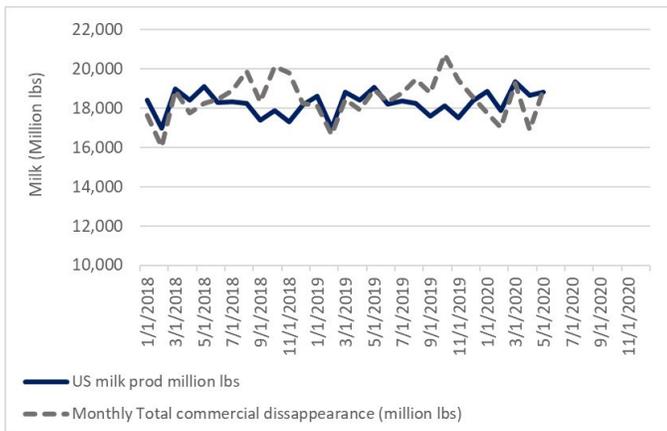
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Monthly U.S. Milk Production and Commercial Disappearance

Though national production has slowed for the past two reported months (April and May 2020), April saw a large gap between production and commercial disappearance. Several factors have narrowed that gap in May. This trend of close production and commercial disappearance needs to continue, so milk prices start to strengthen.

Figure 3: Monthly U.S. Milk Production vs. Commercial Disappearance



USDA Economic Research Service and USDA National Agricultural Statistics Service, 2020.

Income Over Feed Cost, Margin, and All Milk Price Trends

Table 1: 12 month Pennsylvania and U.S. All Milk Income, Feed Cost, Income over Feed Cost (\$/milk cow/day)

	PA All Milk Income	PA Feed Cost ¹	PA IOFC	3 yr avg. breakeven IOFC ²	US All Milk Income	US Feed Cost ¹	US IOFC
Jun-19	\$ 14.10	\$ 5.46	\$ 8.64	\$ 9.00	\$ 13.58	\$ 4.71	\$ 8.86
Jul-19	\$ 14.33	\$ 5.72	\$ 8.61	\$ 9.00	\$ 14.03	\$ 4.64	\$ 9.39
Aug-19	\$ 14.55	\$ 5.00	\$ 9.55	\$ 9.00	\$ 14.18	\$ 4.47	\$ 9.71
Sep-19	\$ 14.70	\$ 4.82	\$ 9.88	\$ 9.00	\$ 14.48	\$ 4.44	\$ 10.04
Oct-19	\$ 15.08	\$ 5.26	\$ 9.81	\$ 9.00	\$ 14.93	\$ 4.44	\$ 10.48
Nov-19	\$ 15.75	\$ 5.43	\$ 10.32	\$ 9.00	\$ 15.75	\$ 4.28	\$ 11.47
Dec-19	\$ 15.68	\$ 5.34	\$ 10.34	\$ 9.00	\$ 15.53	\$ 4.32	\$ 11.20
Jan-20	\$ 15.15	\$ 5.32	\$ 9.83	\$ 9.00	\$ 14.70	\$ 4.30	\$ 10.40
Feb-20	\$ 14.55	\$ 5.40	\$ 9.15	\$ 9.00	\$ 14.18	\$ 4.29	\$ 9.88
Mar-20	\$ 14.18	\$ 5.75	\$ 8.43	\$ 9.00	\$ 13.50	\$ 4.33	\$ 9.17
Apr-20	\$ 11.48	\$ 5.28	\$ 6.20	\$ 9.00	\$ 10.80	\$ 4.23	\$ 6.57
May-20	\$ 10.50	\$ 5.40	\$ 5.10	\$ 9.00	\$ 10.20	\$ 4.15	\$ 6.05
Jun-20	\$ 14.92	\$ 5.43	\$ 9.48	\$ 9.00	\$ 14.53	\$ 4.21	\$ 10.33
Jul-20	\$ 16.44	\$ 5.52	\$ 10.92	\$ 9.00	\$ 16.14	\$ 4.17	\$ 11.97
12 mo. Avg.	\$ 14.17	\$ 5.35	\$ 8.82		\$ 13.82	\$ 4.38	\$ 9.44
12 mo. change	\$ 0.96	\$ 0.37	\$ 0.59		\$ 1.21	\$ 0.01	\$ 1.20
% change	7.2%	7.4%	7.2%		9.6%	0.3%	14.5%

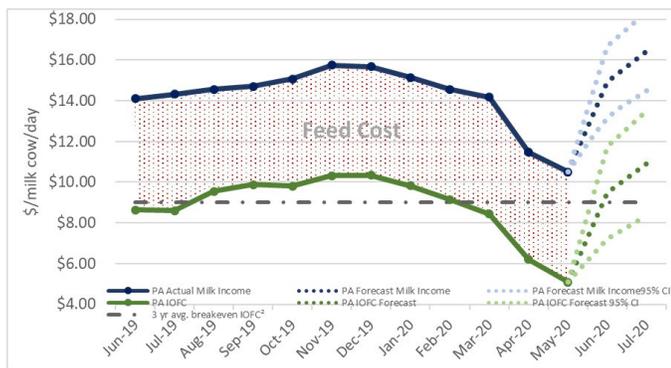
¹Based on corn, alfalfa hay, and soybean meal equivalents to produce 75 lbs. of milk (Bailey & Ishler, 2007) ²The 3 year average actual IOFC breakeven in Pennsylvania from 2015-2017 was \$9.00 ± \$1.67 (\$/milk cow/day) (Beck, Ishler, Goodling, 2018).

Table 2: 12 month Pennsylvania and U.S. All Milk Price, Feed Cost, Milk Margin (\$/cwt for lactating cows)

	PA All Milk Price	PA Feed Cost ¹	PA Milk Margin	3 yr avg. breakeven Milk Margin ²	US All Milk Price	US Feed Cost ¹	US Milk Margin
Jun-19	\$ 18.80	\$ 7.28	\$ 11.52	\$ 12.33	\$ 18.10	\$ 6.28	\$ 11.82
Jul-19	\$ 19.10	\$ 7.62	\$ 11.48	\$ 12.33	\$ 18.70	\$ 6.18	\$ 12.52
Aug-19	\$ 19.40	\$ 6.67	\$ 12.73	\$ 12.33	\$ 18.90	\$ 5.96	\$ 12.94
Sep-19	\$ 19.60	\$ 6.43	\$ 13.17	\$ 12.33	\$ 19.30	\$ 5.91	\$ 13.39
Oct-19	\$ 20.10	\$ 7.01	\$ 13.09	\$ 12.33	\$ 19.90	\$ 5.92	\$ 13.98
Nov-19	\$ 21.00	\$ 7.24	\$ 13.76	\$ 12.33	\$ 21.00	\$ 5.71	\$ 15.29
Dec-19	\$ 20.90	\$ 7.12	\$ 13.78	\$ 12.33	\$ 20.70	\$ 5.76	\$ 14.94
Jan-20	\$ 20.20	\$ 7.10	\$ 13.10	\$ 12.33	\$ 19.60	\$ 5.74	\$ 13.86
Feb-20	\$ 19.40	\$ 7.20	\$ 12.20	\$ 12.33	\$ 18.90	\$ 5.72	\$ 13.18
Mar-20	\$ 18.90	\$ 7.66	\$ 11.24	\$ 12.33	\$ 18.00	\$ 5.77	\$ 12.23
Apr-20	\$ 15.30	\$ 7.03	\$ 8.27	\$ 12.33	\$ 14.40	\$ 5.63	\$ 8.77
May-20	\$ 14.00	\$ 7.21	\$ 6.79	\$ 12.33	\$ 13.60	\$ 5.54	\$ 8.06
Jun-20	\$ 19.89	\$ 7.25	\$ 12.65	\$ 12.33	\$ 19.38	\$ 5.61	\$ 13.77
Jul-20	\$ 21.93	\$ 7.37	\$ 14.56	\$ 12.33	\$ 21.52	\$ 5.56	\$ 15.96
12 mo. Avg.	\$ 18.89	\$ 7.13	\$ 11.76		\$ 18.43	\$ 5.84	\$ 12.58
12 mo. change	\$ 1.28	\$ 0.49	\$ 0.79		\$ 1.62	\$ 0.02	\$ 1.60
% change	7.2%	7.4%	7.2%		9.6%	0.3%	14.5%

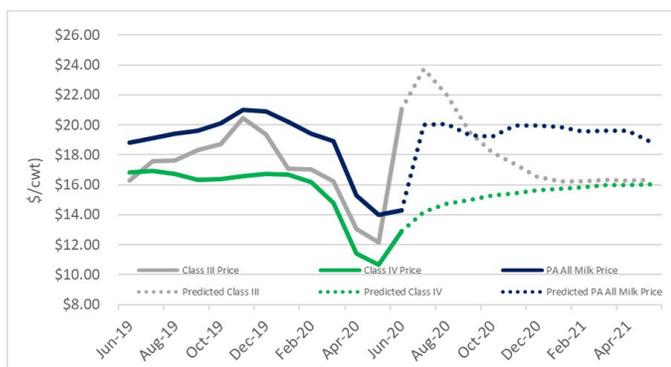
¹Based on corn, alfalfa hay, and soybean meal equivalents to produce 75 lbs. of milk (Bailey & Ishler, 2007) ²The 3 year average actual Milk Margin breakeven in Pennsylvania from 2015-2017 was \$12.33 ± \$2.29 (\$/cwt) (Beck, Ishler, Goodling, 2018).

Figure 4: Twelve month Pennsylvania Milk Income and Income Over Feed Cost (\$/milk cow/day)



²The 3 year average actual IOFC breakeven in Pennsylvania from 2015-2017 was \$9.00 ± \$1.67 (\$/milk cow/day) (Beck, Ishler, Goodling, 2018).

Figure 5: Twenty-four month Actual and Predicted* Class III, Class IV, and Pennsylvania All Milk Price (\$/cwt)



*Predicted values based on Class III and Class IV futures regression (Goodling, 2020).

Table 3: Twenty-four month Actual and Predicted* Class III, Class IV, and Pennsylvania All Milk Price (\$/cwt)

Month	Class III Price	Class IV Price	PA All Milk Price
Jun-19	\$16.27	\$16.83	\$18.80
Jul-19	\$17.55	\$16.90	\$19.10
Aug-19	\$17.60	\$16.74	\$19.40
Sep-19	\$18.31	\$16.35	\$19.60
Oct-19	\$18.72	\$16.39	\$20.10
Nov-19	\$20.45	\$16.60	\$21.00
Dec-19	\$19.37	\$16.70	\$20.90
Jan-20	\$17.05	\$16.65	\$20.20
Feb-20	\$17.00	\$16.20	\$19.40
Mar-20	\$16.25	\$14.80	\$18.90
Apr-20	\$13.07	\$11.40	\$15.30
May-20	\$12.14	\$10.67	\$14.00
Jun-20	\$21.04	\$12.90	<i>\$14.27</i>
Jul-20	\$23.75	<i>\$14.17</i>	<i>\$19.99</i>

Aug-20	<i>\$22.00</i>	<i>\$14.72</i>	<i>\$20.05</i>
Sep-20	<i>\$19.49</i>	<i>\$15.00</i>	<i>\$19.33</i>
Oct-20	<i>\$18.16</i>	<i>\$15.29</i>	<i>\$19.19</i>
Nov-20	<i>\$17.37</i>	<i>\$15.41</i>	<i>\$19.93</i>
Dec-20	<i>\$16.51</i>	<i>\$15.61</i>	<i>\$19.94</i>
Jan-21	<i>\$16.22</i>	<i>\$15.73</i>	<i>\$19.84</i>
Feb-21	<i>\$16.23</i>	<i>\$15.85</i>	<i>\$19.55</i>
Mar-21	<i>\$16.34</i>	<i>\$15.96</i>	<i>\$19.62</i>
Apr-21	<i>\$16.29</i>	<i>\$16.00</i>	<i>\$19.60</i>
May-21	<i>\$16.32</i>	<i>\$16.05</i>	<i>\$18.85</i>
Jun-21	<i>\$16.47</i>	<i>\$16.05</i>	<i>\$18.84</i>

* *Italicized predicted values based on Class III and Class IV futures regression (Beck, Ishler, and Goodling 2018; Gould, 2019).*

To look at feed costs and estimated income over feed costs at varying production levels by zip code, check out the Penn State Extension Dairy Team's [DairyCents](#) or [DairyCents Pro](#) apps today.

Data sources for price data

- All Milk Price: Pennsylvania and U.S. All Milk Price (USDA National Ag Statistics Service, 2020)
- Current Class III and Class IV Price (USDA Ag Marketing Services, 2020)
- Predicted Class III, Class IV Price (CME Group, 2020)
- Alfalfa Hay: Pennsylvania and U.S. monthly Alfalfa Hay Price (USDA National Ag Statistics Service, 2020)
- Corn Grain: Pennsylvania and U.S. monthly Corn Grain Price (USDA National Ag Statistics Service, 2020)
- Soybean Meal: Feed Price List (Ishler, 2020) and average of Decatur, Illinois Rail and Truck Soybean Meal, High Protein prices, National Feedstuffs (USDA Ag Marketing Services, 2020)

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