2019 Michigan Milk Market Situation and Outlook

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Michigan Farm Milk Financial Situation

- 2018 is fourth consecutive year of low milk US farm milk prices

- Michigan farm milk prices lowest in US because of production/processing balance
July 2018 Mailbox Milk Price

Source: Hoard’s Dairyman
# Michigan Dairy Farm Profitability

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</thead>
<tbody>
<tr>
<td>Milk Price $/cwt</td>
<td>13.44</td>
<td>20.21</td>
<td>19.41</td>
<td>13.31</td>
<td>16.88</td>
<td>20.65</td>
<td>18.67</td>
<td>20.63</td>
<td>24.28</td>
<td>17.06</td>
<td>15.07</td>
<td>17.14</td>
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<tr>
<td>ROE %</td>
<td>5.4</td>
<td>13.3</td>
<td>7.5</td>
<td>-1.6</td>
<td>7.7</td>
<td>13.7</td>
<td>11.2</td>
<td>9.2</td>
<td>12.5</td>
<td>2.2</td>
<td>-1.4</td>
<td>0.7</td>
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<tr>
<td>ROA %</td>
<td>5.5</td>
<td>11.3</td>
<td>7.0</td>
<td>-0.4</td>
<td>7.0</td>
<td>11.2</td>
<td>9.3</td>
<td>6.6</td>
<td>15.0</td>
<td>2.6</td>
<td>-0.1</td>
<td>1.5</td>
</tr>
<tr>
<td>OPM %</td>
<td>19.4</td>
<td>33.1</td>
<td>23.1</td>
<td>1.8</td>
<td>23.9</td>
<td>33.5</td>
<td>30.3</td>
<td>26.2</td>
<td>31.2</td>
<td>10.4</td>
<td>-0.2</td>
<td>5.9</td>
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<tr>
<td>ATO %</td>
<td>28.2</td>
<td>34.1</td>
<td>30.5</td>
<td>22.5</td>
<td>29.2</td>
<td>33.3</td>
<td>30.7</td>
<td>29.7</td>
<td>33.1</td>
<td>25.2</td>
<td>26.0</td>
<td>27.0</td>
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</tbody>
</table>
Total per capita consumption milk equivalent: milkfat basis

lbs/person/year

- 1975
- 1978
- 1981
- 1984
- 1987
- 1990
- 1993
- 1996
- 1999
- 2002
- 2005
- 2008
- 2011
- 2014
- 2017
US Milk Component Prices

- Global milkfat consumption strong and supplies relatively tight
- US butterfat prices are driven by domestic issue
- Global milk protein supplies long
- US skim milk prices driven by world markets
Per capita consumption dairy products

- Yogurt
- Butter
- Cheese
- Frozen
- Fluid


Units: lbs/person/year, fluid lbs/person/year
Farm Milk Price is Composed of:

1. **Federal Milk Marketing Order prices**
   - Minimum prices
   - Pooling/uniform price

2. **State & Regional Market Aspects**
   - Cooperative and State/Region Issues
     - Balancing
     - Premiums

3. **Farm Specifics**
   - Components
   - Quality
   - Hauling
Monthly Ending Stocks of Dry Whey

1000s of Pounds

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

2015 2016 2017 2018

Updated 10/4/18
Oct-18 CME Milk Contract Prices Over Past 120 Days

- **Class III Futures**
- **Class IV Futures**

*Updated 10/25/18*
Percent Change in U.S. Milk Production

Updated 10/19/18

DMaP Dairy Markets and Policy
2018 Milk Production first 8 months:
US +1.1%
EU +1.5%
NZ +5.5
AU -3.9

In Australia and parts of EU drought resulted in forage shortages
Milk Production Change from Prior Year, Top 4 Global Suppliers

Feb. 16 adjusted for leap day. Latest month may include USDEC estimate.
Milk Market Coordination

- The process by which supply and demand – production and sales – find a balance
- Difficult for milk because it is perishable, bulky, and must be sold daily
- Price plays a key role but other factors are important including physical impediments to delivery, natural variations in production and use, and business relationships

Source: A.M. Novakovic
Milk Market Coordination Challenges

- Seasonal Balancing
  - Managing counter-seasonal milk production and demand
- Daily Balancing
  - Managing demand and supply shocks day-to-day
- Cyclical Balancing
  - Coordinating over long-run cycles
Long-run Cyclical Balancing

- Growth in Michigan in past two decades reverses long-term declines
- Corresponds to growth in export markets
- Requires major investments in plants that can be commercially viable to supply world markets
Excess Milk Production

- When milk supply is long or does not make it to a plant there are two possibilities:
  - Distressed milk sales: sold at a deep discount
  - Dumped milk
Distressed Milk Sales

- Sometimes a portion of milk is sold at a deep discount or to an alternative customer.
- These transactions are almost always initiated by a supplying cooperative.
- Discounts tend to be 30-70% of Class III or IV price.
Dumped Milk

- 0.2 to 0.4% of milk produced does not make it to the plant or is rejected because it is contaminated or spoiled.
  - Plant issues (breakdowns, maintenance) can result in spoiled and dumped milk
- 0 to 2% of milk is sometimes dumped for lack of a market.
  - May not leave the farm.
Milk Dumped Mideast Order (pounds)

- Pounds of Milk
- Months: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
- Years: 2015, 2016, 2017, Average 08-14
MI Mailbox - Class III

Avg 2001-14: 1.05
Avg since 2015: -0.35
Dairy Policy Issues

- NAFTA 2.0
- California Milk Marketing Order
- Farm Bill
- Risk management programs
Dairy and NAFTA 2.0:  
1. Eliminate Canada Class 7  
- Before Class 7 system, US had milk protein price advantage  
- Under Class 7, Canadians had price advantage and used it to displace US sales and begin exports to third countries (at below US prices).  
- Under NAFTA 2.0 cost will be similar, competitive advantage will derive from transportation and lower processing costs  
- Canada agrees to cap their exports of various powders
NAFTA 2.0: Increased access to Canadian Market

- Canada agrees to a higher “market access” for US products.
- Once market access amounts are reached, tariffs are incurred as happens now.
- Quantities will increase annually in accord with market growth, for a period of time.
- This will phase in during 2019.
- There is no automatic sunset provision.
11 Federal Milk Marketing Order Areas

CA Order begins Oct 17, 2018
2018 (2019?) Farm Bill

- **MPP-Dairy from 2014**: government program that allows protection of “all milk” price less feed cost using US averages at fixed premiums
  - Paid an average of $0.62/cwt on first 5 million lbs in 2018

- **New version increases margin to $9 for a low premium**
  - $0.17/cwt premium
## Margin Protection Program 2018

<table>
<thead>
<tr>
<th></th>
<th>All Milk</th>
<th>Feed Cost</th>
<th>Margin</th>
<th>Payment @$8</th>
<th>Net Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$/cwt</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>January</td>
<td>16.10</td>
<td>7.99</td>
<td>8.11</td>
<td>0</td>
<td>-0.142</td>
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<tr>
<td>February</td>
<td>15.30</td>
<td>8.42</td>
<td>6.88</td>
<td>1.12</td>
<td>0.978</td>
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<tr>
<td>March</td>
<td>15.60</td>
<td>8.83</td>
<td>6.77</td>
<td>1.23</td>
<td>1.088</td>
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<tr>
<td>April</td>
<td>15.80</td>
<td>9.18</td>
<td>6.62</td>
<td>1.38</td>
<td>1.238</td>
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<tr>
<td>May</td>
<td>16.20</td>
<td>9.42</td>
<td>6.78</td>
<td>1.22</td>
<td>1.078</td>
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<tr>
<td>June</td>
<td>16.30</td>
<td>8.94</td>
<td>7.36</td>
<td>0.64</td>
<td>0.498</td>
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<tr>
<td>July</td>
<td>15.40</td>
<td>8.68</td>
<td>6.72</td>
<td>1.28</td>
<td>1.138</td>
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<tr>
<td>August</td>
<td>15.90</td>
<td>8.47</td>
<td>7.43</td>
<td>0.57</td>
<td>0.428</td>
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<tr>
<td>September</td>
<td>16.83</td>
<td>8.34</td>
<td>8.49</td>
<td>0</td>
<td>-0.142</td>
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<tr>
<td>October</td>
<td>17.31</td>
<td>8.35</td>
<td>8.96</td>
<td>0</td>
<td>-0.142</td>
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<tr>
<td>November</td>
<td>17.49</td>
<td>8.35</td>
<td>9.14</td>
<td>0</td>
<td>-0.142</td>
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<tr>
<td>December</td>
<td>17.64</td>
<td>8.41</td>
<td>9.23</td>
<td>0</td>
<td>-0.142</td>
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<tr>
<td><strong>Average</strong></td>
<td>16.32</td>
<td>8.62</td>
<td>7.71</td>
<td>0.62</td>
<td>0.478</td>
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For 5 million lbs in Tier 1, 2018

<table>
<thead>
<tr>
<th>Payment</th>
<th>Gross Monthly</th>
<th>Net Monthly</th>
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<tbody>
<tr>
<td></td>
<td>$</td>
<td>$</td>
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<tr>
<td>0.00</td>
<td>-591.67</td>
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<tr>
<td>4,666.67</td>
<td>4,075.00</td>
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</tr>
<tr>
<td>5,125.00</td>
<td>4,533.33</td>
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</tr>
<tr>
<td>5,750.00</td>
<td>5,158.33</td>
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<tr>
<td>5,083.33</td>
<td>4,491.67</td>
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<tr>
<td>2,666.67</td>
<td>2,075.00</td>
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<tr>
<td>5,333.33</td>
<td>4,741.67</td>
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<tr>
<td>2,375.00</td>
<td>1,783.33</td>
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<tr>
<td>0.00</td>
<td>-591.67</td>
<td></td>
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<tr>
<td>0.00</td>
<td>-591.67</td>
<td></td>
</tr>
<tr>
<td>0.00</td>
<td>-591.67</td>
<td></td>
</tr>
<tr>
<td>0.00</td>
<td>-591.67</td>
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</tr>
<tr>
<td>Average</td>
<td>2,583.33</td>
<td>1,991.67</td>
</tr>
<tr>
<td>Total</td>
<td>31,000.00</td>
<td>23,900.00</td>
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Note: $8/cwt coverage
Premium =$0.142/cwt
2019 Farm Bill Dairy Subtitle: MPP Replacement Policy Details

- Extend program through 2023
- Maintain existing production history calculation (highest of 2011, 2012, or 2013)
- Eliminate minimum 25% production history coverage requirement
- Add covered margin levels of $8.50 and $9.00.cwt
## 2019 Farm Bill Dairy Title

<table>
<thead>
<tr>
<th></th>
<th>Senate</th>
<th>House</th>
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<tbody>
<tr>
<td><strong>MPP Name</strong></td>
<td>Dairy Risk Management Program</td>
<td>Dairy Risk Coverage Program</td>
</tr>
<tr>
<td><strong>Coverage decision timing</strong></td>
<td>Allows annual decisions</td>
<td>One decision for entire 5 years</td>
</tr>
<tr>
<td><strong>Premiums</strong></td>
<td>Increase premiums on lower coverage and Tier II; Discounts premiums for small (&lt;2 mil lbs) and medium herds (2-10 mil lbs)</td>
<td>Lowers premiums for Tier I and increases for Tier II</td>
</tr>
<tr>
<td><strong>Feed cost formula</strong></td>
<td>Status quo</td>
<td>Increases feed cost</td>
</tr>
<tr>
<td><strong>LGM participation</strong></td>
<td>Not allowed</td>
<td>Allowed</td>
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</table>
Dairy Farm Risk Management Programs and Policies

- **LGM-Dairy**: insurance program that protects class III milk price less feed costs using futures and options prices.

- **Dairy Revenue Protection (Dairy RP)**: new program on sale October 9. Covers the difference between final revenue guarantee and actual milk revenue a quarter of the year.
  - Basket of milk price put options with payment adjusted by yield and protection factors.
How is milk priced? Expected Prices – E.g. Class III Milk, Q4 2019

Month 1 of Quarter
$16.50

Month 2 of Quarter
$16.45

Month 3 of Quarter
$16.34

$16.43

Price Used in Dairy-RP
Dairy Revenue Protection Sales As of Oct. 22, 2018

444 Policies
89 Endorsements
850,347,333 Pounds of Milk

Source: Marin Bozic, University of Minnesota
2019 Michigan Mailbox

Average, Worst, Positive

$/cwt

January, February, March, April, May, June, July, August, September, October, November, December
## 2019 Milk Price Forecast

<table>
<thead>
<tr>
<th>Price</th>
<th>CME Futures</th>
<th>USDA</th>
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<tbody>
<tr>
<td>Class III</td>
<td>$15.95</td>
<td>$15.30-16.20</td>
</tr>
<tr>
<td>Class IV</td>
<td>$15.60</td>
<td>$14.35-15.35</td>
</tr>
<tr>
<td>US All Milk</td>
<td></td>
<td>$16.85-17.75</td>
</tr>
<tr>
<td>Michigan mailbox</td>
<td>$15.35-15.85</td>
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</table>
Conclusions

- Tighter world supplies leave US milk markets one supply shock from higher prices
- More of the same in 2019 for processing and Michigan basis issues
- 2019 Farm Bill may provide significant payments