Economics Characteristics of the New York Agriculture & Food Sectors

Jennifer Ifft
Assistant Professor and Mueller Family Sesquicentennial Faculty Fellow in Agribusiness and Farm Management

Contributions by Chad Fiechter, Jerzy Jaromczyk, Farnaz Safari

January 17, 2020

#NYAgOutlook
NY Farm Sector Indicators
- Farm income
  - Revenue and expenses
  - MFP
  - Financial measures
- Crop loss
- 2017 Census of Agriculture

A Closer Look
- Nontraditional finance
- NY Cost of Production

Looking Forward
2018 NY farm income is relatively low, higher than 2009 & 2016

Note: Government payments includes commodity programs, conservation payments, disaster payments, dairy payments, etc. and excludes Federal crop insurance premium subsidies
Farm income for 2018 below average, 2019 should be higher

NY Net Cash Farm Income, $ Million

Note: 1997-2006 average is reported in 2019$. The 2009-18 average is not inflation-adjusted and would be higher in real terms. Source: USDA Economic Research Service, forecast based on national trend.
Small revenue declines in 2018
National cash receipts forecasts– up for dairy, generally mixed

<table>
<thead>
<tr>
<th>Item</th>
<th>2018-2019F % change</th>
<th>2020 WASDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dairy (1)</td>
<td>+11.2%</td>
<td>All milk price up for 2020 (18.6 to 19.25), production up 1.7%</td>
</tr>
<tr>
<td>Cattle (3)</td>
<td>-0.1%</td>
<td>Prices up 0.6%, production up 1.1%</td>
</tr>
<tr>
<td>Corn (4)</td>
<td>+1.9%</td>
<td>Prices up 6.6%, production down 4.5%</td>
</tr>
<tr>
<td>Fruit (5*)</td>
<td>+1.3%</td>
<td></td>
</tr>
<tr>
<td>Chicken Eggs (7)</td>
<td>-31%</td>
<td>Prices up 1.6%, production up 1.4%</td>
</tr>
<tr>
<td>Soybeans (8)</td>
<td>-4.9%</td>
<td>Prices up 6.1%, production down 19.6%</td>
</tr>
<tr>
<td>Hay (9)</td>
<td>+20%</td>
<td></td>
</tr>
<tr>
<td>Vegetables (11*)</td>
<td>+10%</td>
<td></td>
</tr>
<tr>
<td>Wheat (15)</td>
<td>-9.5%</td>
<td>Prices down 11.8%, production up 1.9%</td>
</tr>
</tbody>
</table>

Source: USDA Economic Research Service for national cash receipt forecast changes, Jan 2020 WASDE
Note: NY 2018 ranking in terms of cash receipts in (), apples #5, cabbage #11
New era for government payments?

Government farm program payments to farm producers, 2009-19F

$ billion (nominal)

Note: F = forecast.
1/ All other payments include supplemental and ad hoc disaster assistance, tobacco transition, Cotton Ginning Cost Share, dairy, and miscellaneous programs.
2/ Includes Price Loss Coverage (PLC), Agriculture Risk Coverage (ARC), counter-cyclical payments (CCP), Average Crop Revenue Election (ACRE) payments, loan deficiency payments (excluding grazeout payments), marketing loan gains, and certificate exchange gains. CCP and ACRE were not continued in the 2014 Farm Bill. PLC and ARC payments began in 2015.
3/ Includes direct fixed payments portion of Direct and Counter-Cyclical Program (DCP) and Cotton Transition Assistance Program (CTAP) payments (in 2014/15).

Data as of November 27, 2019.
## DMC, Conservation, MFP have highest payouts

<table>
<thead>
<tr>
<th>Selected programs &amp; total</th>
<th>$ Million 2018</th>
<th>$ Million 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price Loss Coverage (PLC)</td>
<td>1.0</td>
<td>?</td>
</tr>
<tr>
<td>Supplemental and ad hoc disaster assistance</td>
<td>5.0</td>
<td>?</td>
</tr>
<tr>
<td>Agriculture Risk Coverage (ARC)</td>
<td>7.4</td>
<td>?</td>
</tr>
<tr>
<td>Conservation</td>
<td>19.7</td>
<td>?</td>
</tr>
<tr>
<td>Market Facilitation Program</td>
<td>23.5</td>
<td>48</td>
</tr>
<tr>
<td>Dairy Margin Coverage Program</td>
<td>24.6</td>
<td>28?</td>
</tr>
<tr>
<td>Total</td>
<td>81.2</td>
<td>?</td>
</tr>
</tbody>
</table>

Source: USDA Economic Research Service for 2018; Farm Bureau estimate for 2019; FSA mid-2019 estimate for DMC
Sizeable MFP rates in many counties

2019 - MFP Payment Rate (per acre)

Note: average per acre rate for eligible crops. Dairy rate of $0.20 per cwt excluded.
Labor and feed costs increased nationally in 2019

<table>
<thead>
<tr>
<th>Selected farm production expenses, 2018-19F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed purchases</td>
</tr>
<tr>
<td>Labor</td>
</tr>
<tr>
<td>Net rent</td>
</tr>
<tr>
<td>Property taxes/fees</td>
</tr>
<tr>
<td>Livestock/poultry purchases</td>
</tr>
<tr>
<td>Fertilizer</td>
</tr>
<tr>
<td>Seed purchases</td>
</tr>
<tr>
<td>Interest</td>
</tr>
<tr>
<td>Pesticides</td>
</tr>
<tr>
<td>Fuel/oil</td>
</tr>
</tbody>
</table>

Note: F = forecast.
Inflation-adjusted wages up again in 2019

Northeast Farm Wages
Crop and Animal Workers in NEI region
(CT, ME, MA, NH, NY, RI, VT)

Wage ($/hour)


Note: Adjusted to 2019 real values. Data accessed on January 15, 2020
Source: USDA National Agricultural Statistical Survey
Cash rental rates up in some counties, down in others

Change Cash-Rent Rate (Non-Irrigated)
2017-2019

- 30% - 0%
- 0% - 50%
- 50% - 90%

* 2019 $/acre rate
** 2017 $/acre rate

Source: USDA NASS data
Farmland values stable in 2019

New York Farmland Values

Note: Accessed on January 02, 2020
Source: USDA National Agricultural Statistical Survey
Bankruptcies appear to be down in 2019, delinquencies not increasing

Total Ch. 12 Bankruptcies 2019 (Q1-Q3) and Change from Total 2018
(Q1-Q3) Ch. 12 Bankruptcies

Change in Ch. 12 Filings
- 0 bankruptcies in 2018
- 100% - 17%
- 17% - 70%
- 70% - 200%
- 1100%

Production and Intermediate Term Loans

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Credit East</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greater than 90 Days - Accruing Charge-Offs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>0.911%</td>
<td>0.806%</td>
<td>0.561%</td>
<td>0.624%</td>
<td>0.678%</td>
</tr>
<tr>
<td>2015</td>
<td>0.899%</td>
<td>0.810%</td>
<td>0.565%</td>
<td>0.620%</td>
<td>0.683%</td>
</tr>
<tr>
<td>2016</td>
<td>1.809%</td>
<td>1.616%</td>
<td>1.126%</td>
<td>1.244%</td>
<td>1.361%</td>
</tr>
</tbody>
</table>

Source: Court filings, regulatory reports
2019 insurance payouts (to date) very high for field crop producers

New York Crop Insurance Loss Ratios

Note: Loss ratio = 1 implies total premiums (including premium subsidy) are equivalent to indemnities; typically farm operations pay less than 40 percent of total premiums, with the remainder as premium subsidy.
Another wet year in 2019, much higher payouts than 2018

**New York Crop Insurance**

Indemnities by Peril ($millions)

- All Others
- Cold
- Drought
- Excess Moisture
- Hail
- Heat

Note: Based on indemnities as reported January 06, 2020
Source: USDA Risk Management Agency
Similar weather experiences across NY state

2019 - Crop Insurance Indemnities (millions)

- $0 - $1.03
- $1.03 - $2.77
- $2.77 - $5.47
- $5.47 - $8.29

Note: Cause of Loss (for crop insurance indemnities), 2019 indemnities as reported on 1/16/20
Source: USDA Risk Management Agency
Large prevented planting indemnities in many counties

2019 Prevented Planting Indemnities (thousands)

Insured Acres Receiving Prevented Planting Indemnities
- 0% - 20%
- 20% - 40%
- 40% - 60%

"Note: Cause of Loss (for crop insurance indemnities), 2018 indemnities as reported on 1/15/19
Source: USDA Risk Management Agency"
Selected 2017 Census highlights

- About 2,000 less farms than 2012
  - 4% decline in land in farms
  - Increase in farm wealth (asset value)
  - More younger, older producers

- Declining middle
  - More than 700 farms with 1-9 acres added
  - All others declined, other than >2,000 acre farms

- Half of producers have a primary occupation *other* than agriculture
  - Larger number work off farm

- Increase in rental income, forest products, agritourism, maple, mushrooms, greenhouses, organic production
  - Less Christmas trees, short rotation woody crops, floriculture

- 3,300 farms with renewable energy – doubled from 2012

- More hired managers
Mixed trends in land in farms

Source: USDA NASS Census of Agriculture
Note: Acres farms increase or decrease by county
Vegetable production changes: 2017 Census of Agriculture

Increase

More farms, lower acreage

Decrease
Fruit production changes: 2017 Census of Agriculture

Increase

Mixed

Decrease
Decline in small dairy farms continues in most NY counties

Source: USDA NASS Census of Agriculture
Medium size dairy farm numbers largely stable from 2012-17

Source: USDA NASS Census of Agriculture
Larger dairy farm numbers grew in most counties from 2012-17

Source: USDA NASS Census of Agriculture
Long term trend – dairy concentrated in Western NY

Absolute and Percentage Change of Dairy Cows between 1997 to 2017

Source: USDA NASS Census of Agriculture
**Cost of production study**

**Strong economy...**

**Economy ranking, 2019**

- Texas
- Washington
- Oregon
- Florida
- New York
- Georgia
- California
- Wisconsin
- Michigan
- Pennsylvania

Source: CNBC report, America's top states for business in 2019

**High costs**

**Cost of doing business ranking, 2019**

- Texas
- Wisconsin
- Michigan
- Georgia
- Florida
- Pennsylvania
- Oregon
- Washington
- New York
- California

Source: CNBC report, America's top states for business in 2019
Cost of production study

- **Approach**
  - Comparison with "competitor states" for dairy and specialty crop production
  - Apples-to-apples, would be ideal but prohibitive
  - Major categories for many farm inputs and capital expenses
## Cost of production study: categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed (1)</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Labor (2)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Construction (3-4)</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Property taxes (6)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Fuel (7)</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Electricity (12)</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Irrigation</td>
<td>?</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>General cost of business</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Note: approximate NY ranking for expenses levels in () based on USDA Economic Research Service data
Moderate corn price

Corn price, 2018

- Wisconsin
- Michigan
- Washington
- Oregon
- Texas
- New York
- Pennsylvania
- Georgia
- California
- Florida

Source: USDA, NASS
Moderate alfalfa price

**Premium alfalfa price October, 2019**

- Michigan: 200 $/TON
- California: 215 $/TON
- Texas: 225 $/TON
- New York: 235 $/TON
- Wisconsin: 245 $/TON
- Pennsylvania: 255 $/TON

Source: USDA, NASS
Hay, alfalfa, premium, price received
Near-highest minimum wage

Minimum wage applicable to farm workers

Source: www.dol.gov
Wages are increasing in general.

Crop & animal workers wage rate, 2019

- Florida
- Southeast (Georgia)
- Southern plains (Texas)
- Northeast II (Pennsylvania)
- Northeast I (New York)
- Lake (Michigan & Wisconsin)
- California
- Pacific (Oregon & Washington)

Source: USDA, NASS
Labor, hired, crop & animal workers-wage rate
Moderate construction costs

Construction cost

Georgia  | Texas  | Florida | Michigan | Pennsylvania | New York | Washington | Wisconsin | Oregon | California

$ per square foot

0  | 20  | 40  | 60  | 80

Note: Average lump sum cost, excludes major metropolitan areas
Source: www.buildingjournal.com
High property tax rate

Property tax as a % of farm real estate value, 2018

- Florida
- Texas
- Oregon
- California
- Georgia
- Wisconsin
- Washington
- Pennsylvania
- Michigan
- New York

Source: ERS
Moderate fuel costs

Diesel price December, 2019

- Gulf Coast (Texas)
- Lower Atlantic (Georgia & Florida)
- Midwest (Michigan & Wisconsin)
- U.S.
- Rocky Mountain
- New England
- Central Atlantic (New York & Pennsylvania)
- West Coast less CA (Washington & Oregon)
- California

Source: EIA
Average electricity costs

Average retail price of industrial electricity, 2018

- Washington
- Texas
- Oregon
- Georgia
- New York
- Pennsylvania
- Michigan
- Wisconsin
- Florida
- California

Source: EIA
Agricultural and irrigation prices are included in the industrial sector.
Relatively low real estate costs

Farm real estate value, 2019

- California
- Pennsylvania
- Florida
- Michigan
- Wisconsin
- Georgia
- Washington
- New York
- Oregon
- Texas

Source: USDA, NASS
Ag land, incl building - asset value
Moderate farmland affordability

**Cropland value/cropland cash rent, 2019**

- Washington
- Oregon
- Georgia
- California
- Wisconsin
- Michigan
- New York
- Texas
- Florida
- Pennsylvania

*Source: USDA, NASS*
Moderate farmland affordability

Cropland value/corn yield, 2019

- Washington
- Texas
- New York
- Georgia
- Wisconsin
- Michigan
- Pennsylvania

Source: USDA, NASS
Irrigation costs relatively affordable

On farm irrigation energy expenses, 2018

Source: USDA, NASS
Energy, Irrigation, On farm pumping, In the open only-Expense
Overall business climate is right in the middle

America's top states for business overall ranking, 2019

- California (31)
- Pennsylvania (26)
- Michigan (23)
- Oregon (21)
- Wisconsin (19)
- Florida (13)
- Georgia (12)
- Washington (9)
- Texas (5)

Source: CNBC report, America's top states for business in 2019
NY doesn’t have a cost advantage in general, tends to be on the high cost side
- But usually not the worst
- Similar to many competitors

Implications
- Competitive edge not based on underlying costs
- NY advantage lies elsewhere
  - Innovation
  - Marketing and market access
  - Human capital
Nontraditional finance - introduction

Traditional finance

- USDA
- FSA

Nontraditional finance

- MetLife
- ARM
- John Deere Financial
- Nutrien Financial

Farmland Partners Announces Loan Agreement with Rabo AgriFinance

Company Release - 12/18/2017 4:05 PM ET
Nontraditional finance: why does it matter?

• Farm management
  • Maturing agricultural credit market with increasingly complex alternatives
  • Influences cost of production

• Important during periods of farm stress

Nontraditional finance: what do we know?

- Nontraditional finance is growing
  - Less or “differently” regulated
  - Data is not always available
- May lead to higher input costs
- Research finding: (implicit) feed supplier financing has been important for NY dairy industry

The largest single beneficiary of Trump’s tariff payments? An alternative farm lender.

By Sky Chadde/Gannett Ag Data Fellow and Lucille Sherman/Gannett Data and Investigations Reporter

December 26, 2019

Nontraditional finance: research NE feed supplier credit

• MS thesis project – Chad Fiechter

• Partnership with NEAFA
  • Survey of feed manufacturers, representing > 70% of NE feed industry

• Goals: establish industry norms, estimate feed supplier credit volume, compare to lenders

• Trade credit terms & financial metrics, 2014-18
  • Sales, volume for dairy feed & ingredients
  • Value of sales past due
  • Value of sales >90 days past due
  • Current terms

• Project report in progress
Demand for financing driven by milk prices

**DFBS Average Cost of Production vs Milk Price**

Source: Fiechter and Ifft, 2019
Data: Cornell Dairy Farm Business Summary
Smaller farms use countercyclical supplier credit

Source: Fiechter and Ifft, 2019
Data: Cornell Dairy Farm Business Summary
Midsize farms have higher AP than OC balance recently

Source: Fiechter and Ifft, 2019
Data: Cornell Dairy Farm Business Summary
Supplier credit less important for large than midsize farms

Data: Cornell Dairy Farm Business Summary

Source: Fiechter and Ifft, 2019
Looking forward

- The current 2020 outlook is stable to “cautiously optimistic”, as usual a lot could go wrong

- Politics continue to be a source of volatility
  - TRADE is a continued source of uncertainty but may be stabilizing with new trade deals
  - Government programs ($) have supported positive incomes for grain farms, might create longer-term uncertainty

- Labor supply and cost will continue to be an issue

- Many NY farms are struggling in the current farm economy, lots of signposts for a (continued) “shrinking middle”

- There are many opportunities for NY agriculture, competitive advantages lies in innovation and market access, not cost
Jennifer Ifft
Assistant Professor
Mueller Family Sesquicentennial Faculty Fellow in Agribusiness and Farm Management
Phone: (607) 255-4769
Email: jifft@cornell.edu
Webpage: http://dyson.cornell.edu/people/profiles/ifft.php
Appendix: MFP

Figure 1. Average per Acre Payments by County, 2018 MFP

Source: Farm Service Agency, USDA
Figure 2. County Payment Rates, 2019 MFP

Source: Farm Service Agency, USDA
Figure 1. 2019 MFP Payments for Livestock, Non-Specialty Crops and Specialty Crops

Source: USDA FSA, Farm Bureau Calculations

Updated January 6, 2020
Figure 3. Estimated County-Level Payments for the Last Tranche of the Market Facilitation Program
Figure 4. Estimated County-Level Payment Rates for the Last Tranche of the Market Facilitation Program

Source: USDA FSA, Farm Bureau Calculations and Projections
Appendix: cost of production information

Access to capital ranking, 2019

- California
- New York
- Texas
- Florida
- Pennsylvania
- Washington
- Georgia
- Michigan
- Oregon
- Wisconsin

Source: CNBC report, America’s top states for business in 2019
Appendix: cost of production information

Alfalfa price, 2018

- Michigan
- Wisconsin
- New York
- Washington
- Pennsylvania
- Oregon
- California
- Texas

Source: USDA, NASS
Hay, alfalfa - price received, marketing year
Appendix: cost of production information

Animal workers wage rate, 2019

- Florida
- Southeast (Georgia)
- Southern plains (Texas)
- Northeast II (Pennsylvania)
- Northeast I (New York)
- Lake (Michigan & Wisconsin)
- Pacific (Oregon & Washington)
- California

Source: USDA, NASS
Appendix: cost of production information

Business Friendliness ranking, 2019

- Florida
- Georgia
- Texas
- Michigan
- Wisconsin
- Pennsylvania
- Washington
- Oregon
- New York
- California

Source: CNBC report, America's top states for business in 2019
Concrete delivery cost

- Texas
- Georgia
- Michigan
- Wisconsin
- Pennsylvania
- Florida
- Washington
- Oregon
- New York
- California

Note: Average cost
Source: www.concrete.promatcher.com
Appendix: cost of production information

Concrete foundation installation cost

- Texas
- Georgia
- Michigan
- Wisconsin
- Pennsylvania
- Florida
- Washington
- Oregon
- New York
- California

Note: Average cost
Source: www.concrete.promatcher.com
Appendix: cost of production information

Cost of living ranking, 2019

- Michigan
- Georgia
- Texas
- Wisconsin
- Pennsylvania
- Florida
- Washington
- Oregon
- New York
- California

Source: CNBC report, America's top states for business in 2019
Appendix: cost of production information

Corn price August, 2019

- Wisconsin
- Texas
- New York
- Georgia
- Michigan
- Pennsylvania

Source: USDA, NASS
Appendix: cost of production information

Cost of doing business ranking, 2019

- Texas
- Wisconsin
- Michigan
- Georgia
- Florida
- Pennsylvania
- Oregon
- Washington
- New York
- California

Source: CNBC report, America’s top states for business in 2019
Appendix: cost of production information

Cost of living ranking, 2019

- Michigan
- Georgia
- Texas
- Wisconsin
- Pennsylvania
- Florida
- Washington
- Oregon
- New York
- California

Source: CNBC report, America’s top states for business in 2019
Appendix: cost of production information

Crop workers wage rate, 2019

- Florida
- Southeast (Georgia)
- Southern plains (Texas)
- Northeast II (Pennsylvania)
- Northeast I (New York)
- California
- Lake (Michigan & Wisconsin)
- Pacific (Oregon & Washington)

Source: USDA, NASS
Appendix: cost of production information

Cropland value, 2019

- Texas
- Washington
- New York
- Oregon
- Georgia
- Michigan
- Wisconsin
- Pennsylvania
- Florida
- California

Source: USDA, NASS
Ag land, cropland - asset value
Appendix: cost of production information

Economy ranking, 2019

- Texas
- Washington
- Oregon
- Florida
- New York
- Georgia
- California
- Wisconsin
- Michigan
- Pennsylvania

Source: CNBC report, America’s top states for business in 2019
Appendix: cost of production information

Equipment operators wage rate, 2019

- Florida
- Southeast (Georgia)
- Southern plains (Texas)
- Northeast II (Pennsylvania)
- Lake (Michigan & Wisconsin)
- California
- Northeast I (New York)
- Pacific (Oregon & Washington)

Source: USDA, NASS
Graders and sorters wage rate, 2019

Source: USDA, NASS
Appendix: cost of production information

Hired labor wage rate, 2019

- Southeast (Georgia)
- Florida
- Southern plains (Texas)
- Northeast II (Pennsylvania)
- Lake (Michigan & Wisconsin)
- Northeast I (New York)
- California
- Pacific (Oregon & Washington)

Note: Includes field workers, livestock workers and supervisors. Source: USDA, NASS
Appendix: cost of production information

Infrastructure ranking, 2019

- Georgia
- Texas
- Florida
- Oregon
- Pennsylvania
- Wisconsin
- California
- Michigan
- Washington
- New York

Source: CNBC report, America's top states for business in 2019
Appendix: cost of production information

Off farm irrigation water expenses, 2018

- Wisconsin
- Oregon
- Georgia
- Texas
- Florida
- Washington
- New York
- California
- Pennsylvania

Source: USDA, NASS
Water, irrigation, source = off farm-expenses
Appendix: cost of production information

Pastureland value, 2019

- Oregon
- Washington
- New York
- Texas
- Wisconsin
- Michigan
- California
- Pennsylvania
- Georgia
- Florida

Source: USDA, NASS
Ag land, pastureland - asset value
Appendix: cost of production information

Property tax as a % of operational expenses, 2018

- Georgia
- Washington
- California
- Oregon
- Florida
- Wisconsin
- Michigan
- Pennsylvania
- Texas
- New York

Source: ERS
Appendix: cost of production information

Workforce ranking, 2019

- Washington
- Texas
- California
- Georgia
- Florida
- Oregon
- Wisconsin
- Michigan
- New York
- Pennsylvania

Source: CNBC report, America's top states for business in 2019