



United States Department of Agriculture
National Agricultural Statistics Service



Quarterly Hogs and Pigs
Estimation

Disclaimer

The findings and conclusions in this presentation are those of the author(s) and should not be construed to represent any official USDA or U.S. Government determination or policy.

Importance of Hog Report

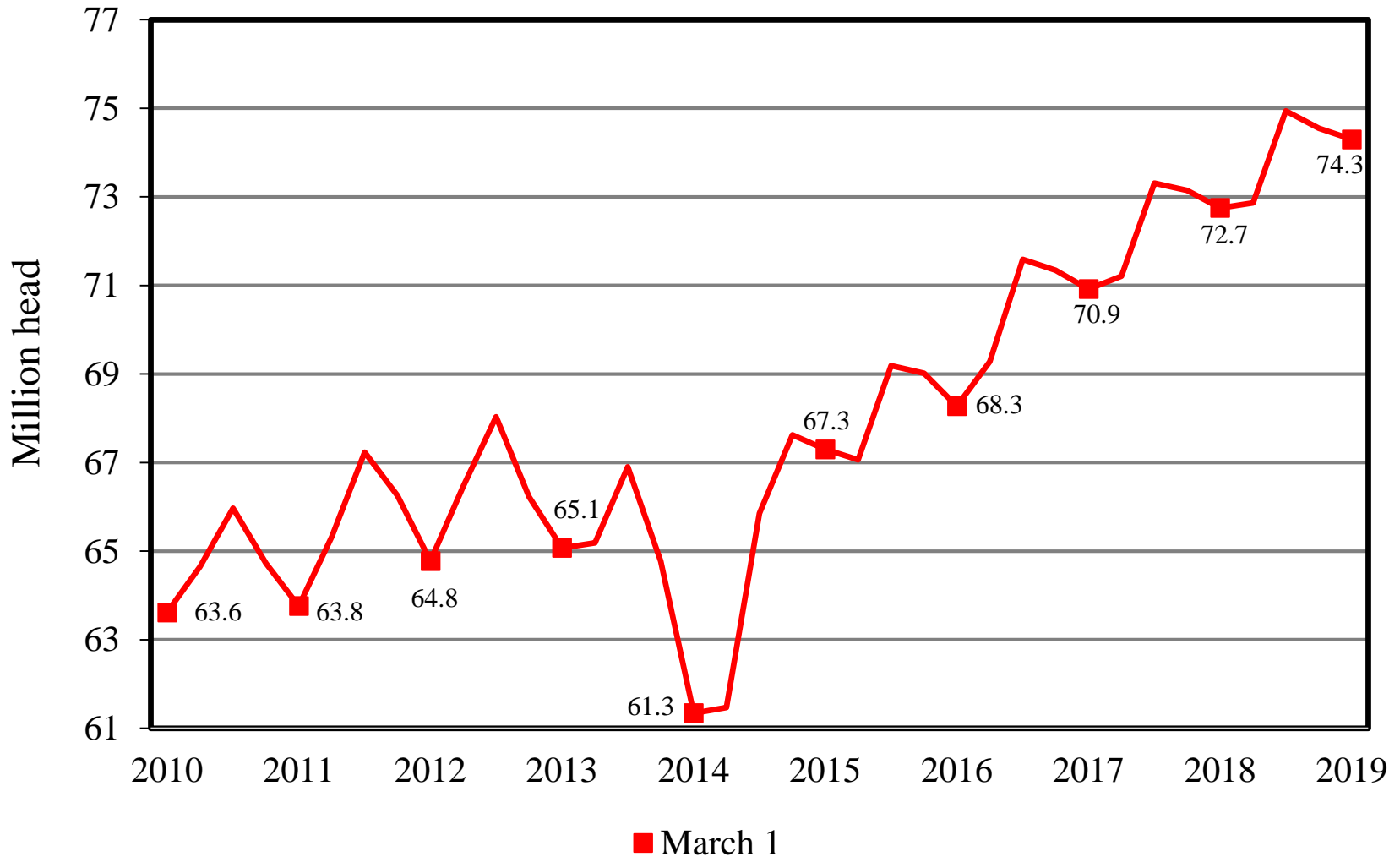
- Principal Economic Indicator
 - Percentage change in Inventory PQ/PY
 - Sows farrowed
 - Pig Crop
 - Sow Farrowing Intentions
 - Next three months and the following three months

A Few Definitions

- Market Hogs - Bacon
- Breeding Hogs – Eventually bacon
- Sows farrowed – Making bacon
- Pig Crop – Bacon to come
- Pigs Per Litter – Bacon production rate
- Farrowing Intentions – Promised Bacon
 - Two estimates, sequential quarters: 1st and 2nd

U.S. Quarterly Hogs and Pigs

2010 - 2019



Changes in the Hog Industry since 1994

Year	Number of Operations	Hog Inventory (million head)	Percent of Inv. on 2,000+ Head Ops.
1994 (December)	208,780	59.6	37%
2002 (Census)	78,895	60.4	75%
2007 (Census)	75,442	67.8	85%
2012 (Census)	63,246	66.0	90%
2017 (Census)	66,439	72.4	93%

Estimation Overview

- HQ Hog statistician determines if revisions are necessary for previous three quarters (seven in December)
- RFO statisticians run survey summaries
- HQ statistician reviews state level estimates
- Pre-board meeting
- Agricultural Statistics Board (ASB) sets national targets
- State estimates adjusted to reach national targets
- Executive briefing and publication

Revision Process

- In December, the previous 7 quarters are open to revisions
- March, June and September, previous 3 quarters
 - Commercial slaughter numbers
 - Updated information from large operators
- Census of Agriculture
 - Allows for five years of revisions (20 quarters)
 - Estimates are final at this point and never revised again
- Revisions are determined at the national level
 - State level estimates are revised to meet new national targets

Pre-Board Process

- HQ Hog Statistician, Livestock Branch Chief, Livestock Section Head, Methods Branch representative
- Compare the national indications with the state recommendations
- Primary data relationships:
 - Percentage changes from previous quarter/previous year
 - Sows farrowed/Pig Crop and the two small weight groups
 - Previous PC with the current 50-119, 120-180, and 180+ groups
 - 3, 6 and 12 month balance sheets
 - Deaths, imports and exports
- Balance Sheet, Residuals

Pre-Board State Est.

Year	Quarter	Weight Group	Number		% change	% change by Groups	Pig Crop				
			PY	CY			Quarter	Previous	Current	% change	
2025	Dec	ALL	94,915	97,860	103.10%						
		Mkt	86,724	89,545	103.25%						
		180 +	15,695	16,257	103.58%	103.2	Breeding=	11,392	Sows farrowed=	4,192	
		120-179	18,209	18,695	102.67%		Brd Chg=	101.5	Pigs/Litter=	10.55	
		50 - 119	24,931	25,799	103.48%		Dec-Feb	42,603	44,202	103.8	
		< 50	27,888	28,794	103.25%	103.3	Can Pigs:	1,585	1,630		
check		0.00			US & Can:	44,188	45,832	103.72			
						Ratio		0.41			
2026	Mar	ALL	98,334	99,845	101.54%						
		Mkt	90,091	91,505	101.57%						
		180 +	16,006	16,561	103.47%	102.5	Breeding=	11,425.0	Sows farrowed=	4,196	36.8%
		120-179	18,619	19,252	103.40%		Brd Chg=	101.2	Pigs/Litter=	10.65	
		50 - 119	26,401	26,497	100.36%		Dec-Feb	44,293	44,685	100.9	
		< 50	29,065	29,194	100.44%	100.4	Can Pigs:	1,554	1,530		
check		0.00			US & Can:	45,847	46,216	100.80			
						Ratio		0.38			
		Residuals:									
		3 month	(154)								
		6 month	(56)								
		12 mont	(455)								

Pre-Board Model

Year	Quarter	Weight Group	Number		% change	% change by Groups	Pig Crop				
			PY	CY			Quarter	Previous	Current	% change	
2025	Dec	ALL	94,915	97,860	103.10%	103.2					
		Mkt	86,724	89,545	103.25%						
		180 +	15,695	16,257	103.58%		Breeding=	8,315	Sows farrowed=	4,192	
		120-179	18,209	18,695	102.67%		Brd Chg=	1015	Pigs/Litter=	10.54	
		50 - 119	24,931	25,799	103.48%		Dec-Feb	42,603	44,202	103.8	
		< 50	27,888	28,794	103.25%		Can Pigs:	1,585	1,630	103.72	
		check		0.00		US & Can:	44,188	45,832	103.72		
					103.3	Ratio		0.41			
2026	Mar	ALL	98,334	98,678	100.35%	102.1					
		Mkt	90,091	90,215	100.14%						
		180 +	16,006	15,930	99.52%		Breeding=	8,463.0	Sows farrowed=	4,222	50.8%
		120-179	18,619	19,598	105.26%		Brd Chg=	102.70	Pigs/Litter=	10.35	
		50 - 119	26,401	26,648	100.94%		Dec-Feb	44,293	43,678	98.6	
		< 50	29,065	28,039	96.47%		Can Pigs:	1,554	1,530	98.61	
		check		0.00	97.7	US & Can:	45,847	45,209	98.61		
						Ratio		0.91			
		Residuals:									
		3 month	(271)								
		6 month	(173)								
		12 mont	(778)								

Pre-Board Scenario

Year	Quarter	Weight Group	Number		% change	% change by Groups	Pig Crop				
			PY	CY			Quarter	Previous	Current	% change	
2025	Dec	ALL	94,915	97,860	103.10%						
		Mkt	86,724	89,545	103.25%						
		180 +	15,695	16,257	103.58%	103.2	Breeding=	8,315	Sows farrowed=	4,192	
		120-179	18,209	18,695	102.67%		Brd Chg=	101.5	Pigs/Litter=	10.54	
		50 - 119	24,931	25,799	103.48%		Dec-Feb	42,603	44,202	103.8	
		< 50	27,888	28,794	103.25%		Can Pigs:	1,585	1,630	103.72	
check		0.00		US & Can:	44,188		45,832				
					Ratio		0.41				
2026	Mar	ALL	98,334	100,804	102.51%						
		Mkt	90,091	92,464	102.63%						
		180 +	16,006	16,630	103.90%	103.3	Breeding=	8,340.0	Sows farrowed=	4,257	51.2%
		120-179	18,619	19,348	103.92%		Brd Chg=	101.50	Pigs/Litter=	10.65	
		50 - 119	26,401	26,908	101.92%		Dec-Feb	44,293	45,333	102.3	
		< 50	29,065	29,577	101.76%		Can Pigs:	1,554	1,530	102.22	
check		0.00		US & Can:	45,847		46,864				
					Ratio		0.41				
		Residuals:									
		3 month	73								
		6 month	171								
		12 mont	(225)								

Agricultural Statistics Board Process

- ASB composed of:
 - Chairperson of the ASB, Statistics Division Director, HQ Hog Statistician, Livestock Branch Chief, Livestock Section Head, Methods Branch representative, Survey Administration representative, and two or three RFO representatives
- Survey overview
- Method's Branch presents overview of summary statistics
- HQ Hog statistician present scenarios developed in Pre-board process
- ASB deliberates over National Targets

Agricultural Statistics Board Process

- Methods branch representative discusses survey response rates, CVs, percent changes from PQ/PY for national and state level statistics, and slaughter forecasts
- Discussion on the largest 20 and largest 100 operations survey ratios
 - Total Inventory
 - Pig Crop
 - Farrowings
 - Breeding Herd
 - Pigs Per Litter

Agricultural Statistics Board Process

- Discussion on weather, industry news, slaughter plants, RFO comments
- Disease comments from survey process
- African Swine Fever
- Any comments from Extreme Operators on national or state level changes
- Imports and Exports – anything unusual from PQ/PY
- Hog Prices and Commercial Slaughter

- Scenarios presented to ASB
 - Ranges from Methods
 - Uses proposed revisions against current to previous ratio summaries
 - PQ, PY and 6 month ratios to develop the ranges, plot on high low graph to see overlap with point estimate and standard error range
 - One method compares matched record ratio
 - The other uses the ratio of survey indications

Agricultural Statistics Board Process

- Scenarios presented to ASB
 - Scenario using RDD's modeled numbers
 - Scenarios from Pre-board
 - Discussion of the balance sheets
 - Each board member enters targets
 - Roundtable discussion of individual targets
 - Consensus is reached on national targets for Total Inventory, Sows Farrowed, Pig Crop and Pigs Per Litter

Board and Publication Process

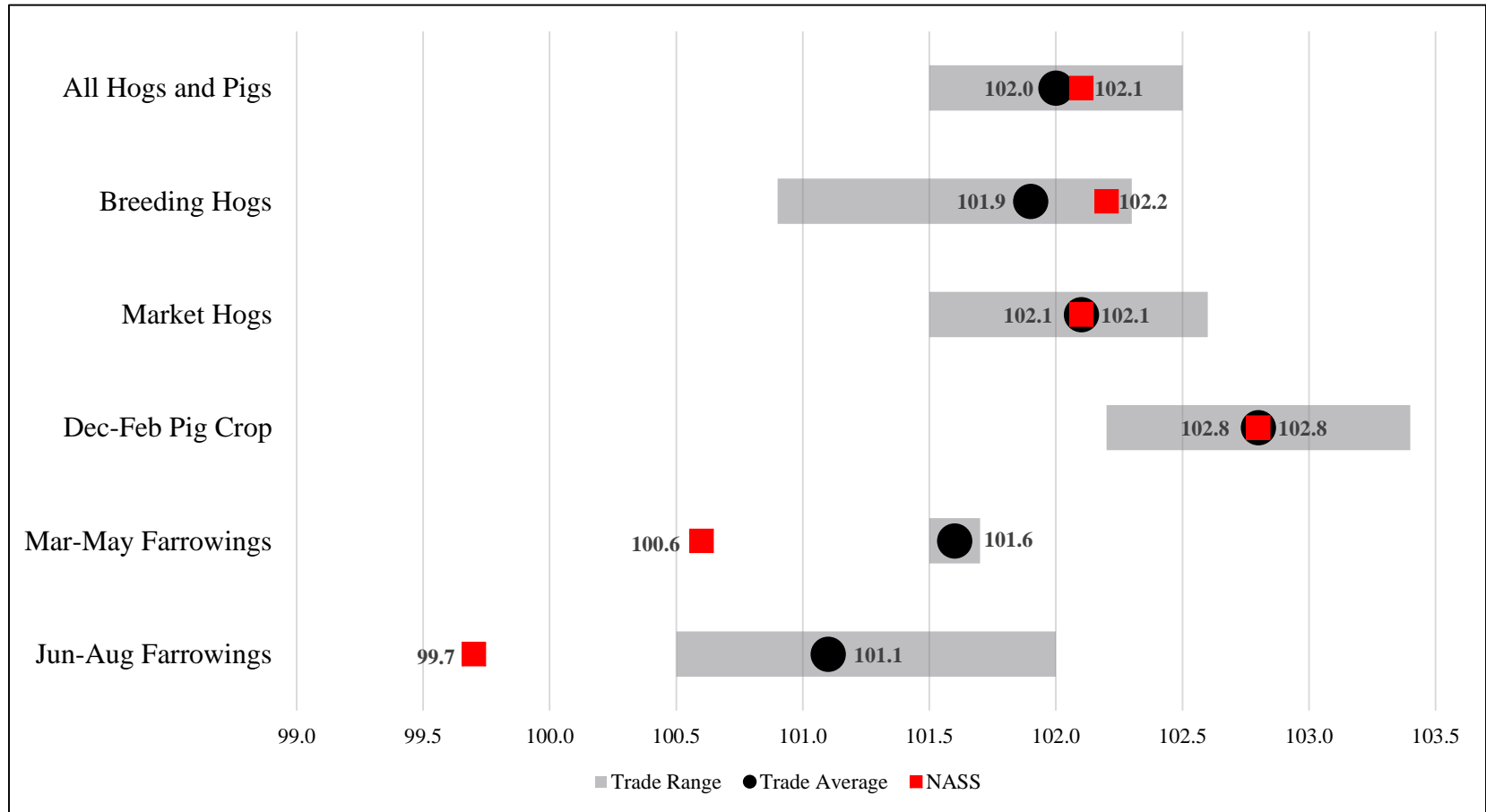
- National Targets set by the ASB
 - NASS employs a “top-down” approach to setting national and state level estimates
 - Once National targets are set, states are adjusted within indications to reach national targets
 - All states must still balance within weight groups
 - Sows farrowed, pig crop and pigs per litter are adjusted in the same fashion

Board and Publication Process

- Publication and Executive Briefing
 - Publication is one week after ASB usually, within 30 days of reference date
 - Confidential
 - Briefing given in “lock-up” to Secretary of Agriculture shortly before release
 - Informs the Secretary of the survey process, anything unusual in the industry, import/export, revisions, and trade expectations

Trade Expectations Compared to NASS Estimates

Percent of Previous Year (March 2019 example)





Questions