

**How Continuous
Incremental Advances
in Broiler Performance
Have Affected Costs of Production
and Broiler Availability
Over the Last Forty Five Years**

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Presentation for the

American Association of Avian Pathologists

Portland, Oregon July 29, 2025

Topics

- **Forty years of history**
 - **Breeders, Broilers, Processing**
- **Changes in Consumer Demand**
- **Changes in the Body Structure of the Chicken**
- **How Feeding Programs have Adapted**
- **Disease and Other Challenges**
- **Success in the Future**

1980s

- **Size of the U.S. Broiler Industry. (Watt: Companies)**
 - **# 1 Broiler Company: Gold Kist – 6.1 Million Chickens/Week**
 - Holly Farms #2, Perdue # 4, Tyson #6, Wayne # 10, Mountaire # 14, Sanderson Farms #24. (1.0 Million Chickens/Week).
 - Other notable names: Con Agra, Country Pride, Valmac, Central Soya, Lane, all in top 10
- **1980 Per Capital Consumption of Chicken 45.8 lbs., behind beef, ahead of pork.**

1980s: The Broiler Genetics Industry

- **25 independent broiler genetic selection companies, now there are two.**

Primary broiler breeder companies: 1970's & 1980's

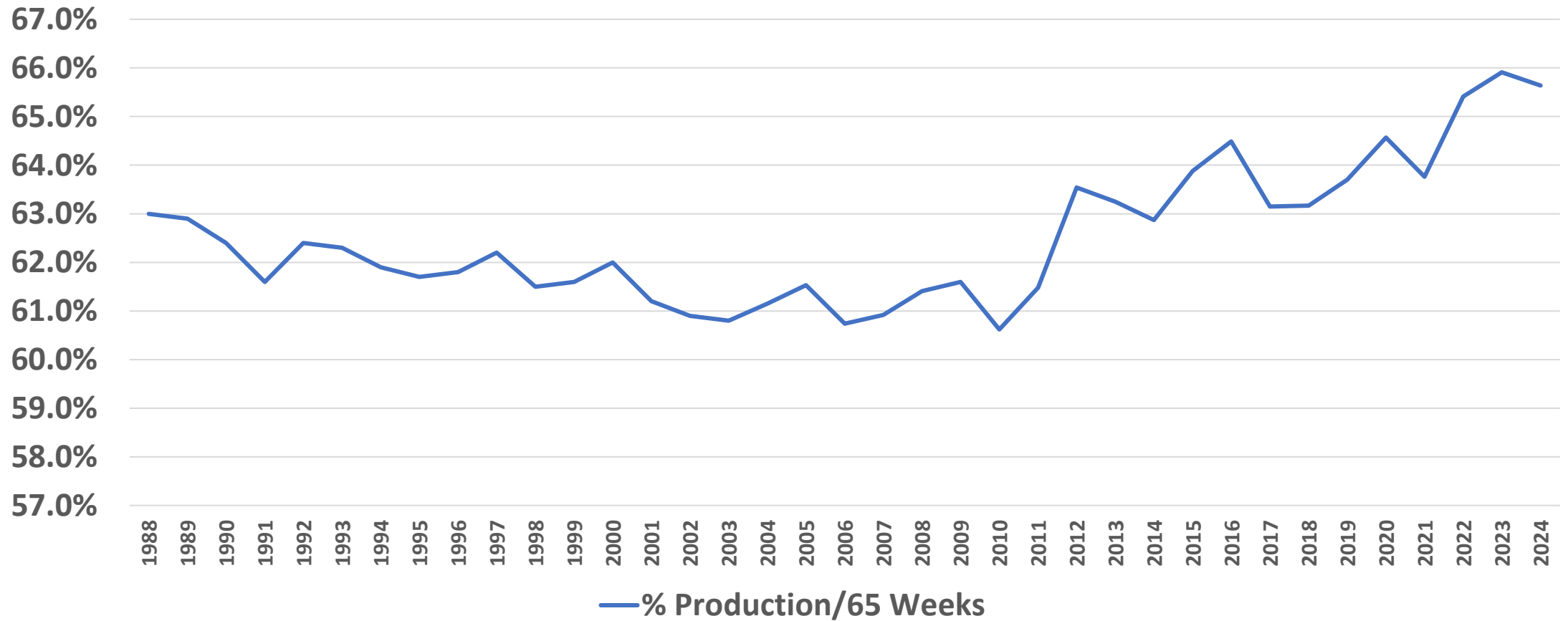
- | | |
|-----------------|---------------------|
| 1) Arbor Acres | 14) Perdue |
| 2) Ross | 15) Avian Farms |
| 3) Hubbard | 16) Heritage |
| 4) Vantress | 17) Case |
| 5) Cobb | 18) Kennebec |
| 6) Indian River | 19) ISA |
| 7) Pilch | 20) Shaver |
| 8) Penobscot | 21) Hendrix/Hybro |
| 9) Tegle | 22) Chester |
| 10) Steegle | 23) H & N |
| 11) Marshall | 24) Anak (Israel) |
| 12) Browns | 25) Tetra (Hungary) |
| 13) Peterson | |



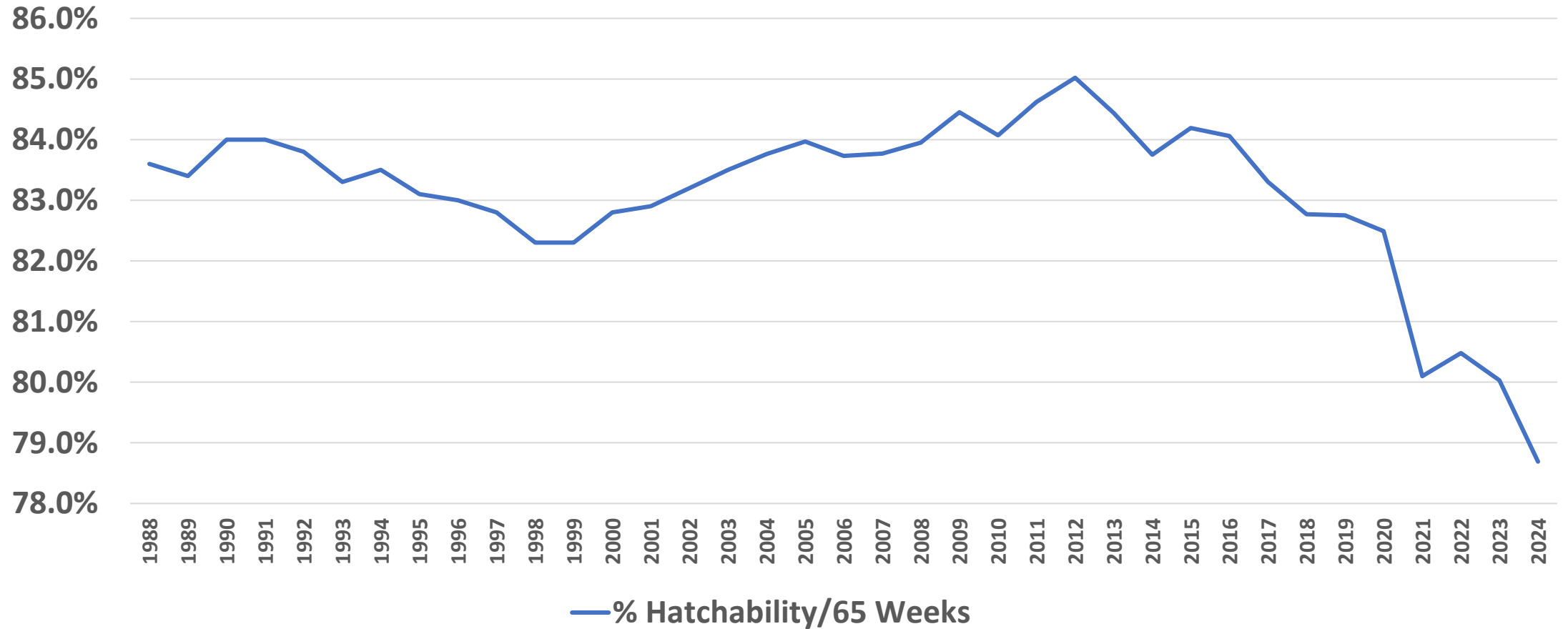
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% Hen Day Production (Adj. to 65 Weeks of Age) U.S. Broiler Breeder Industry 1988 through 2024

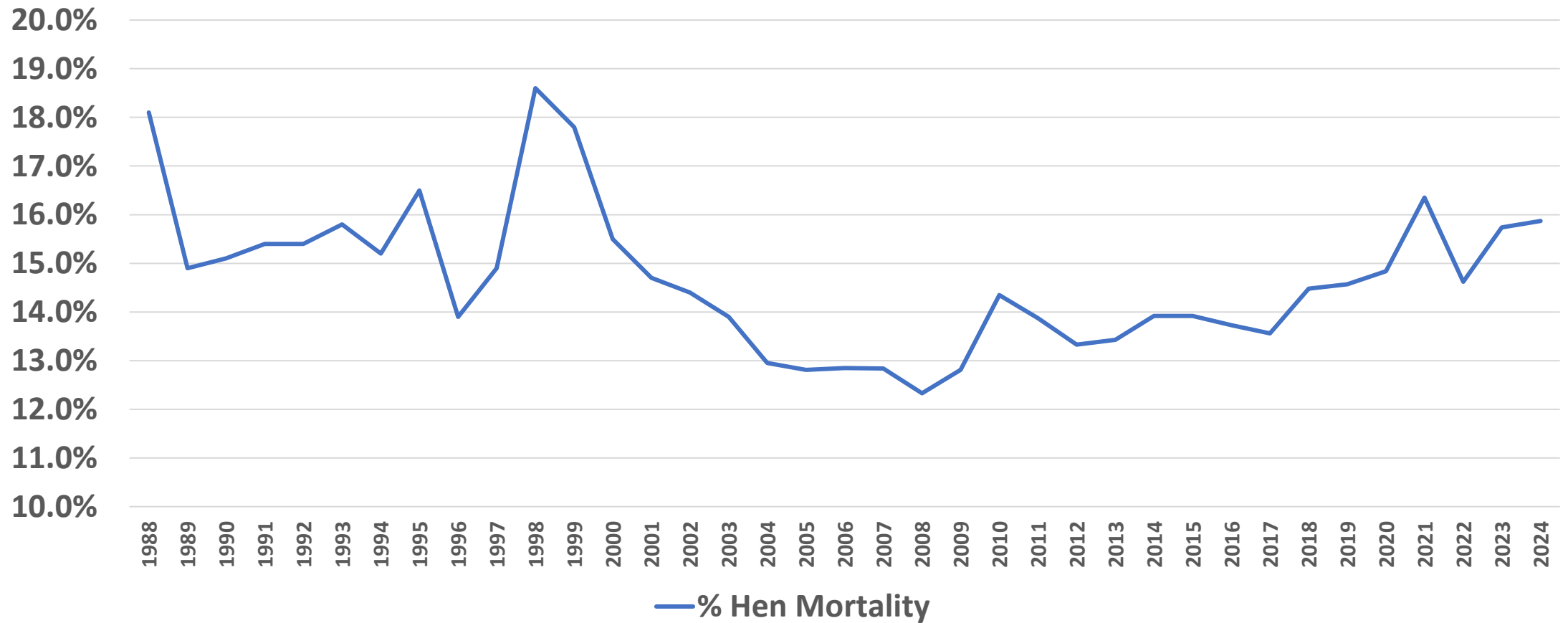


% Hatchability (Adj. to 65 Weeks of Age) U.S. Broiler Breeder Industry 1988 through 2024

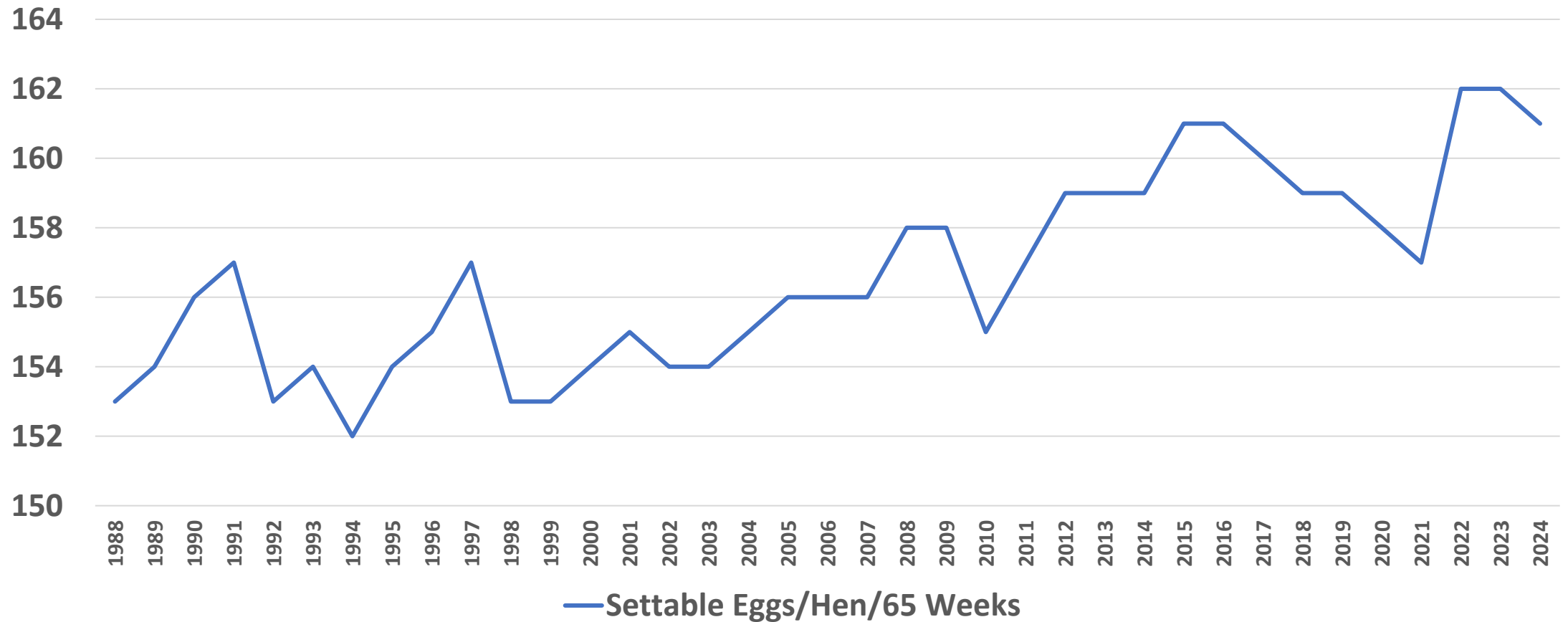


% Hen Mortality during Production

U.S. Broiler Breeder Industry 1988 through 2024

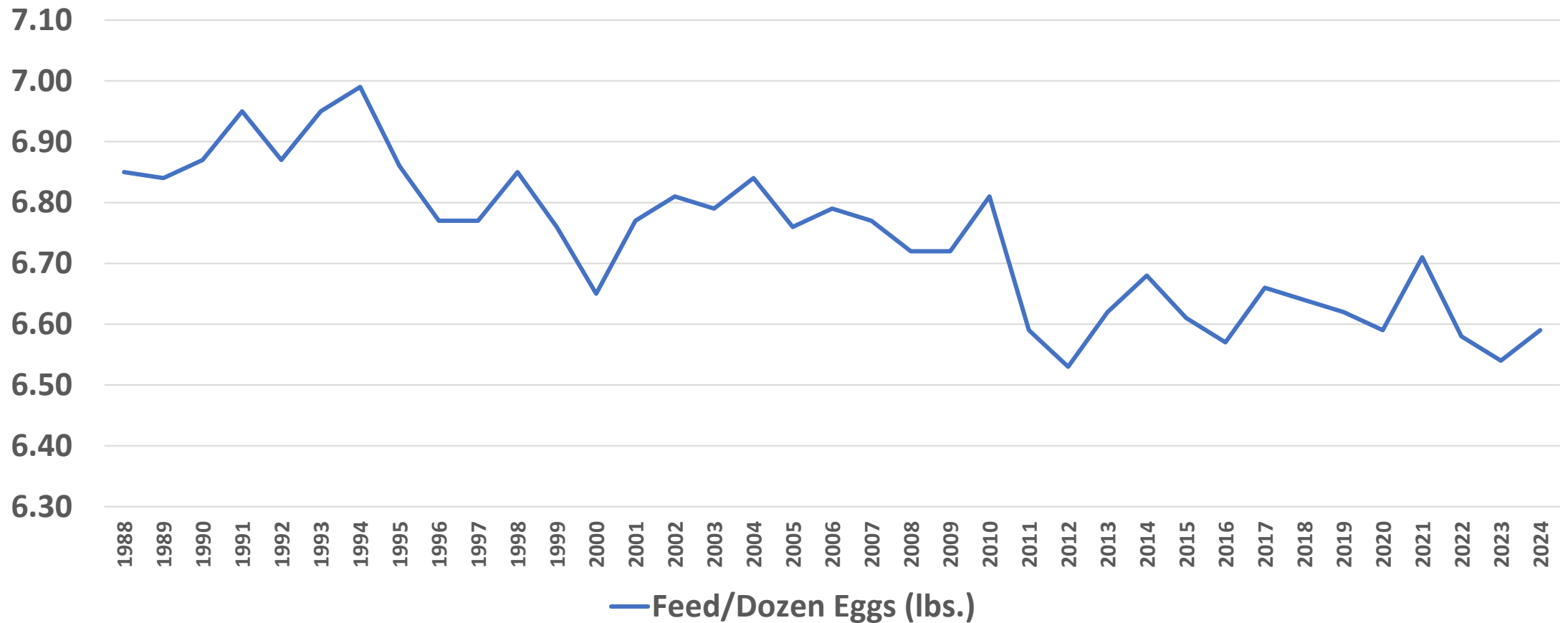


Hatching Eggs per Hen Housed (Adj. to 65 Weeks of Age) U.S. Broiler Breeder Industry 1988 through 2024

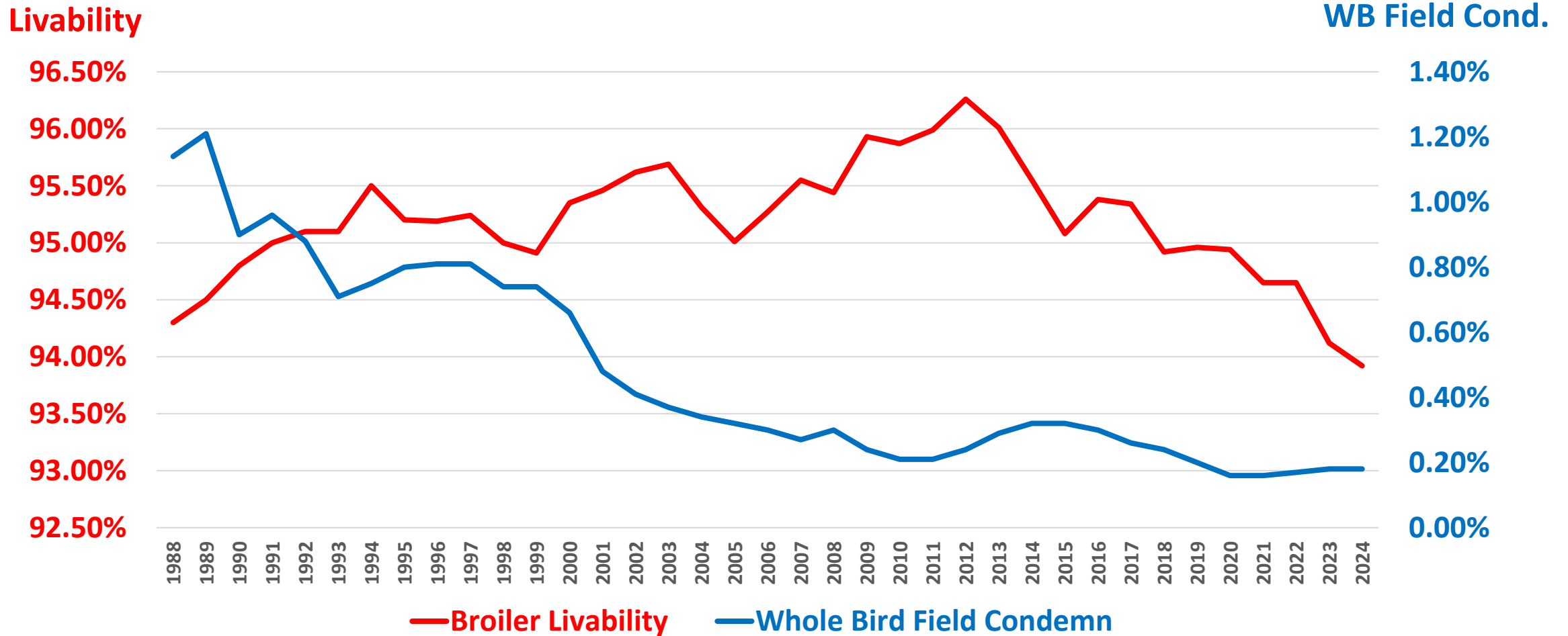


Lbs. of Feed per Dozen Eggs

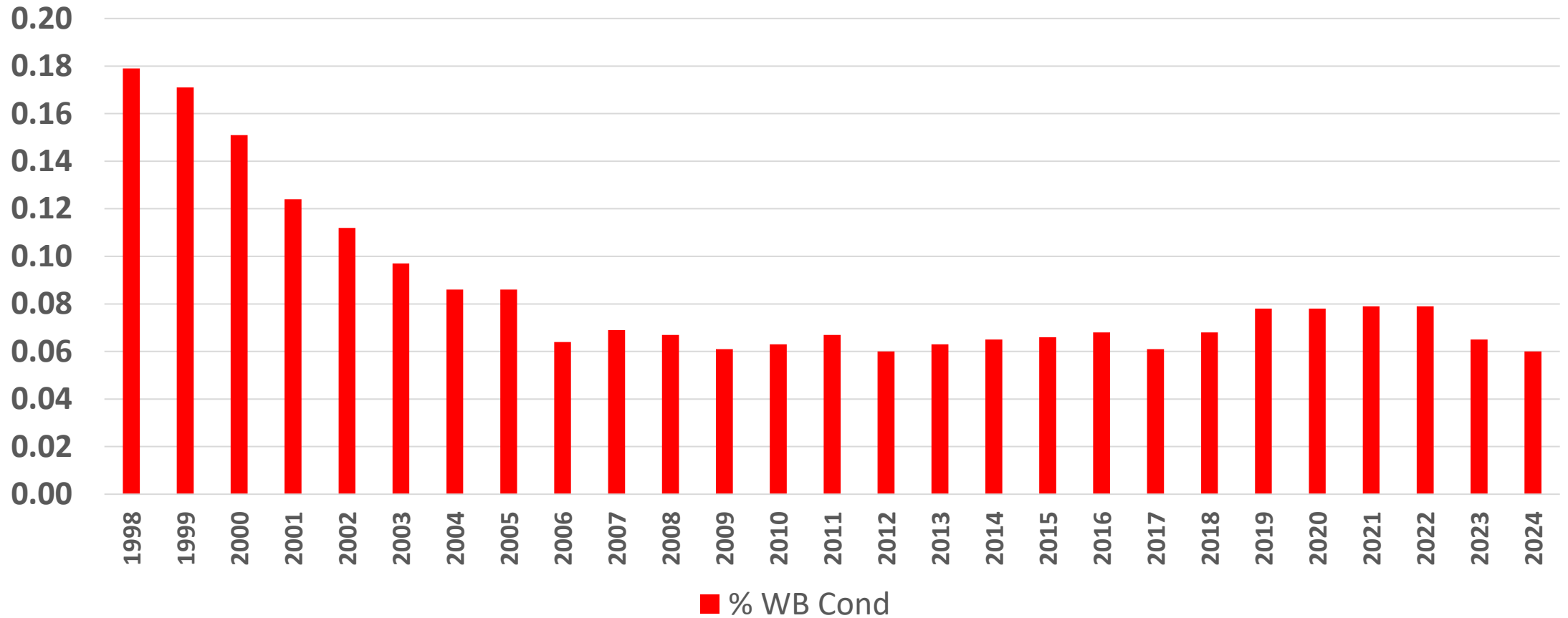
U.S. Broiler Breeder Industry 1988 through 2024



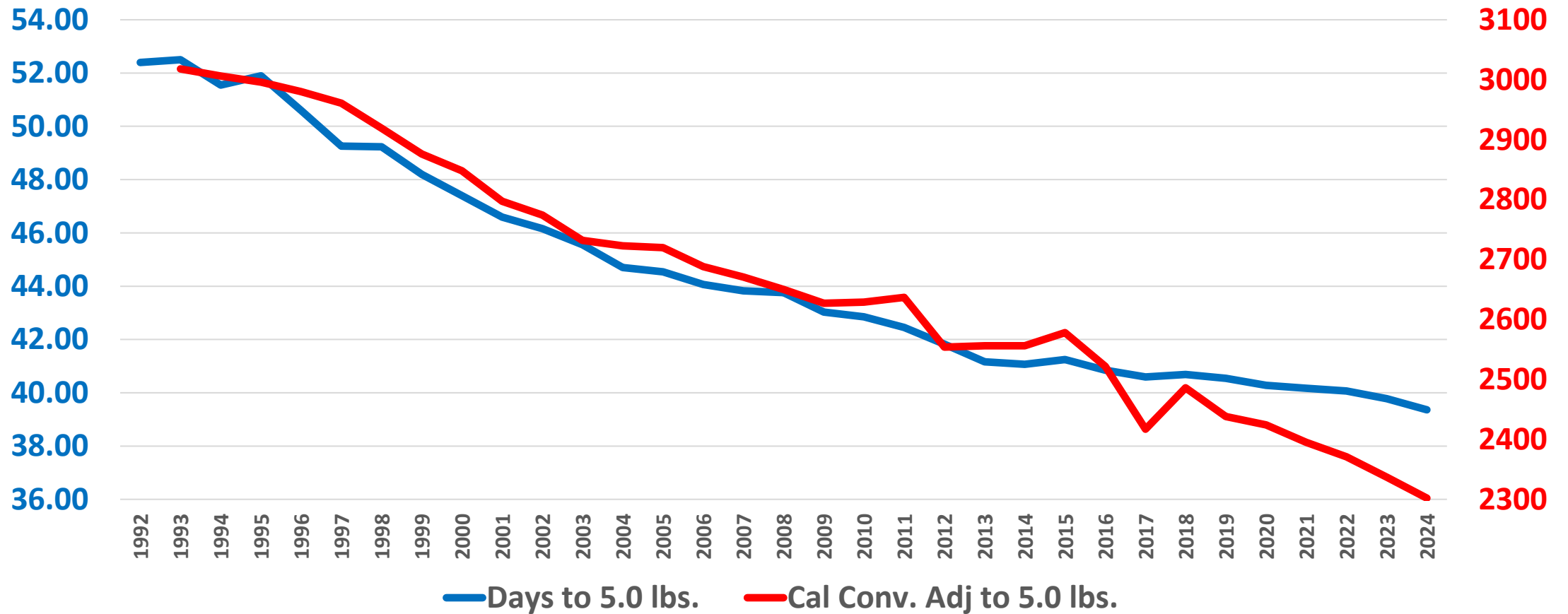
% Broiler Livability and Whole Bird Field Condemnation U.S. Broiler Industry 1988 through 2024



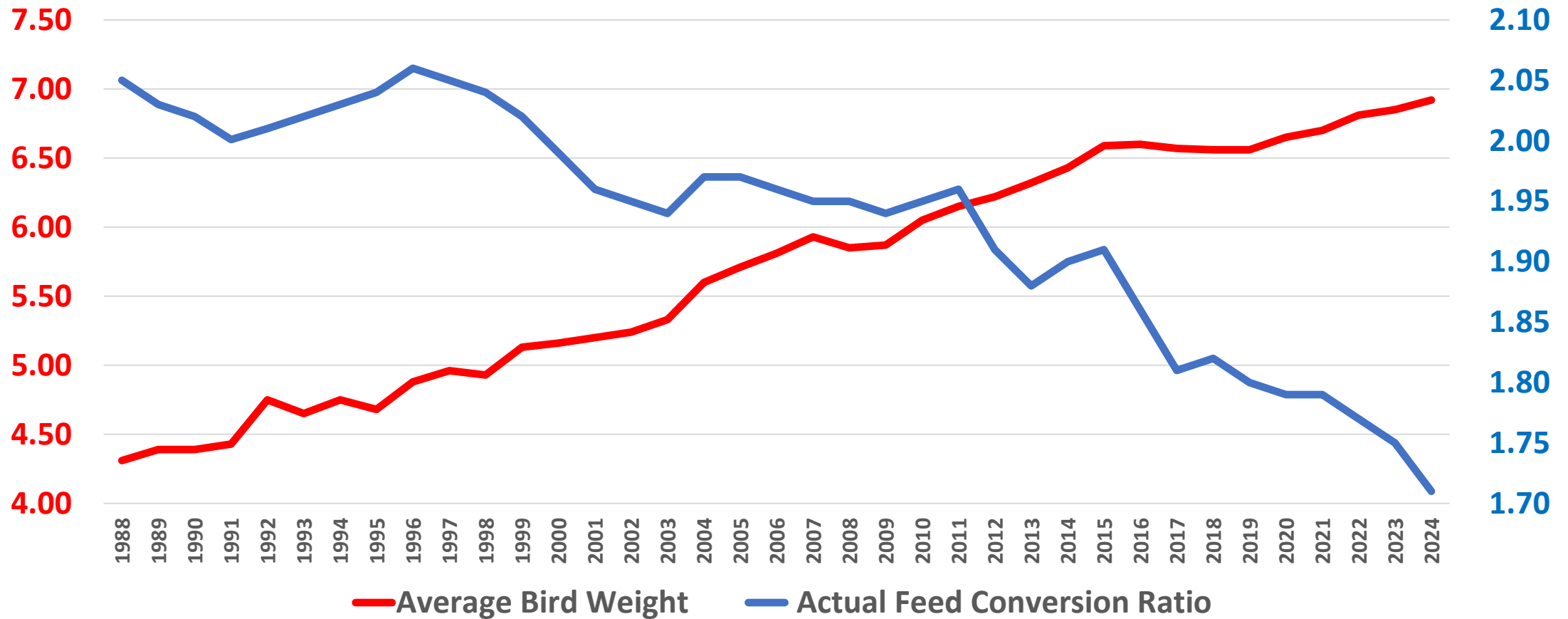
% Whole Bird Plant Condemnation



Days to 5.0 Lb. Live Wt. and Adj. Calorie Conversion U.S. Broiler Industry 1992 through 2024

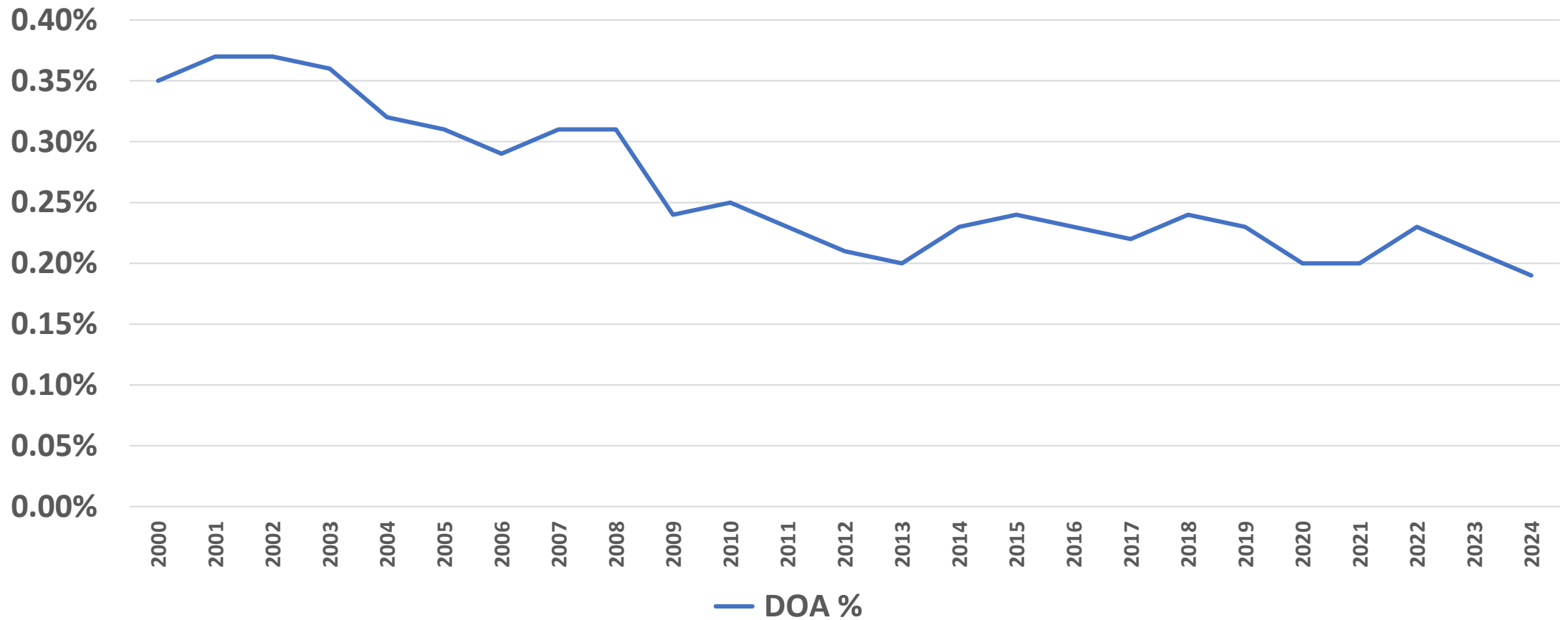


Actual Feed Conversion Ratio and Average Live Wt. (Lbs.) U.S. Broiler Industry 1988 through 2024



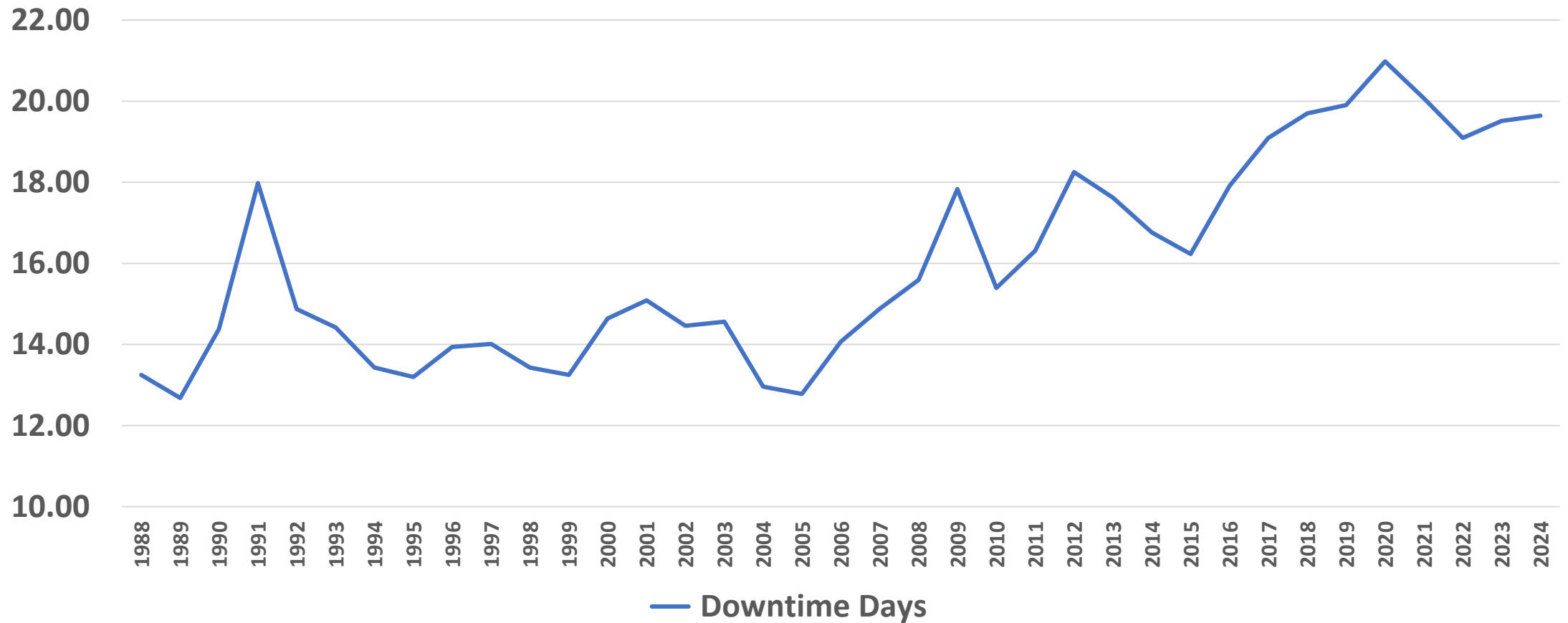
% DOA's

U.S. Broiler Industry 2000 through 2024

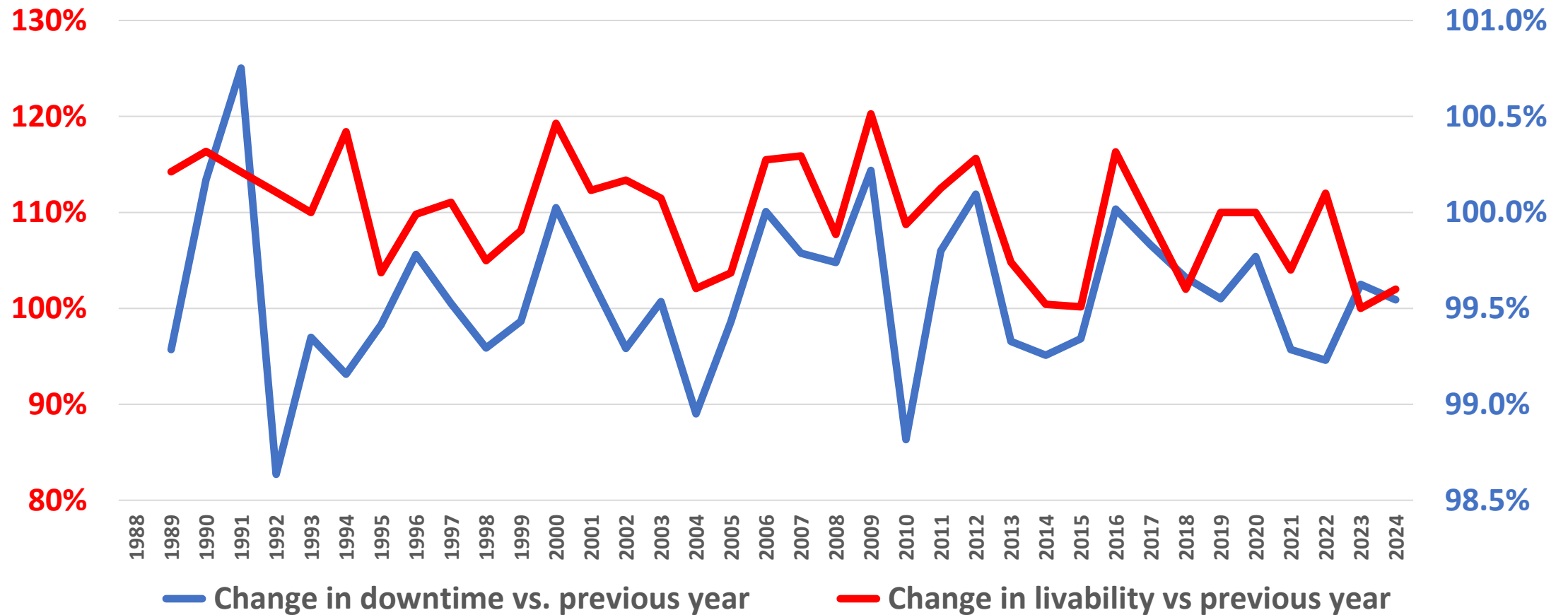


Days Downtime between Flocks

U.S. Broiler Industry 1988 through 2024

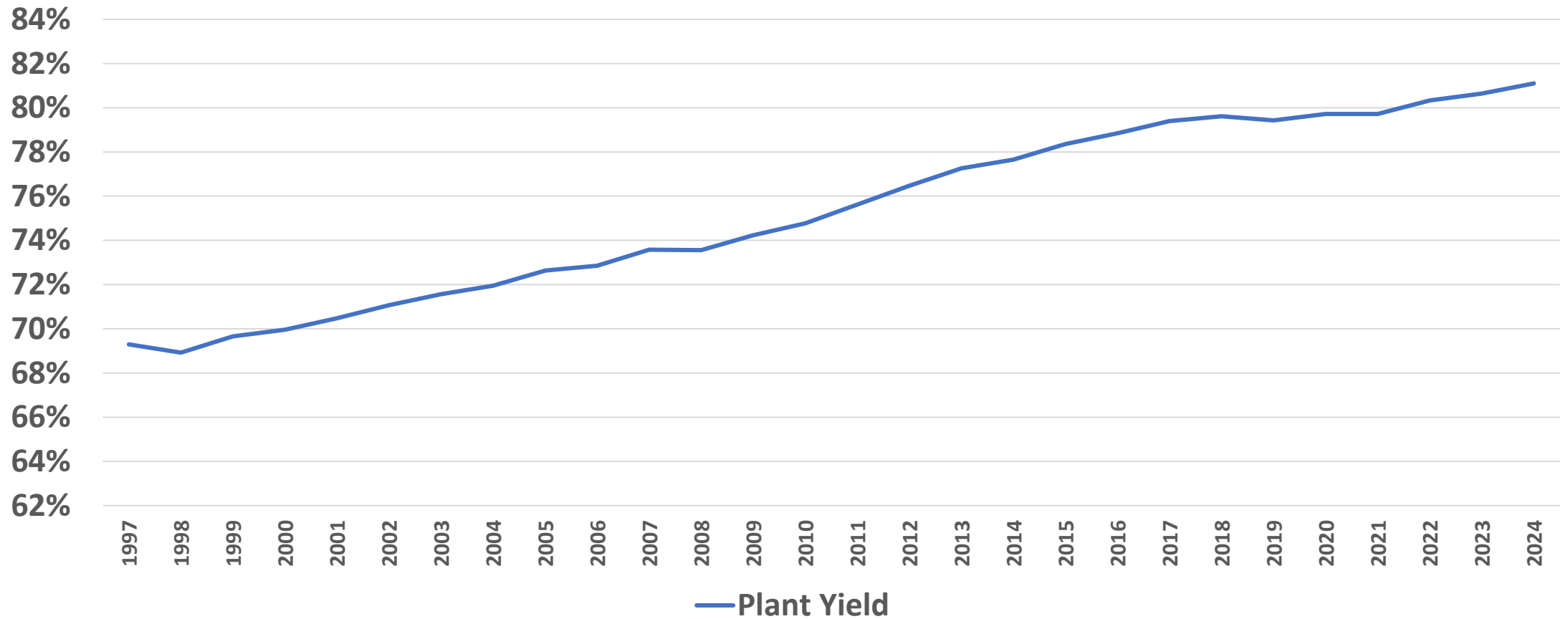


Change in Downtime vs. Previous Year and Change in Livability vs. Previous Year U.S. Broiler Industry 1988 through 2024

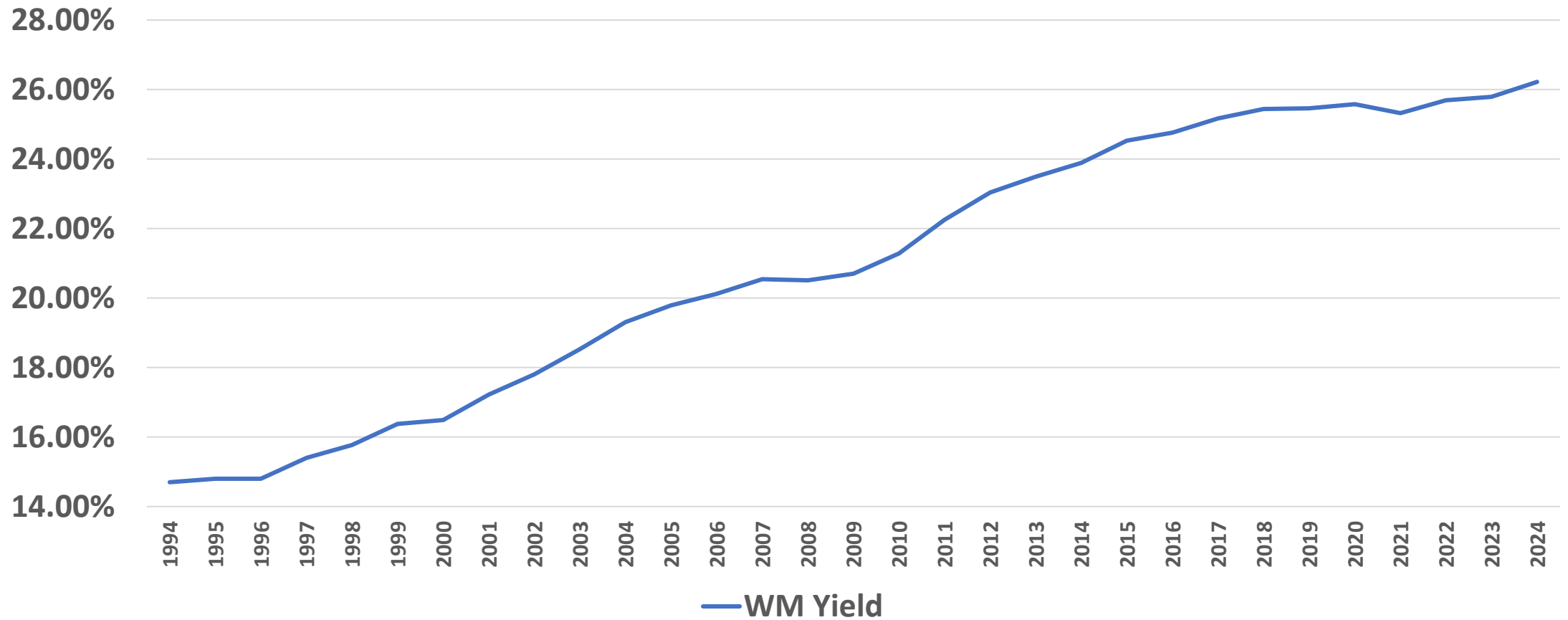


% Eviscerated Yield

U.S. Broiler Industry 1998 through 2024



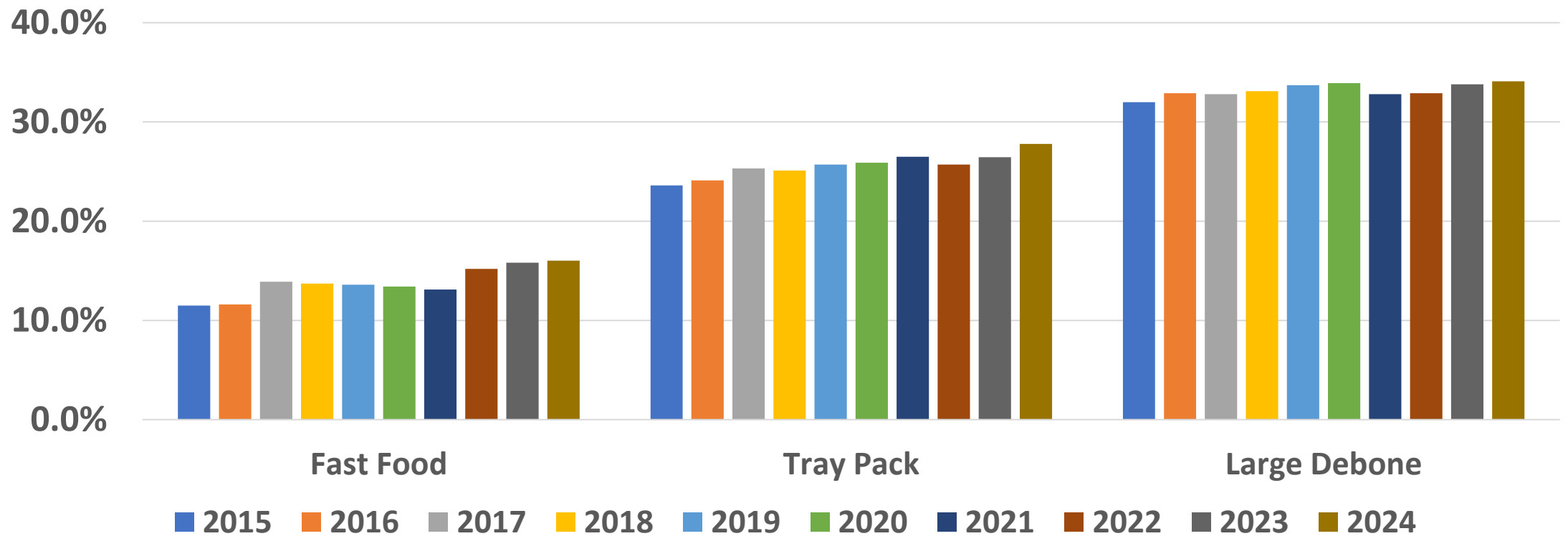
Boneless Breast Meat Yield (% of Live Wt.) U.S. Broiler Industry 1988 through 2024



Topics

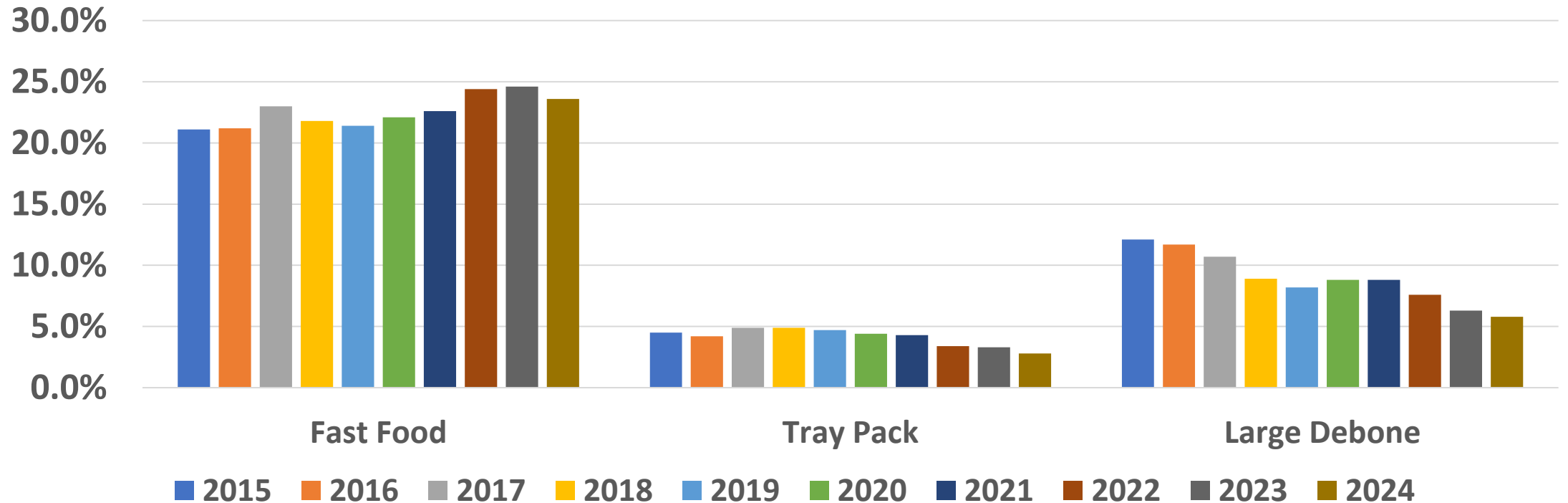
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% of Product Mix produced as Deboned Breast Meat U.S. Industry : 2015 through 2024 by Industry Sector

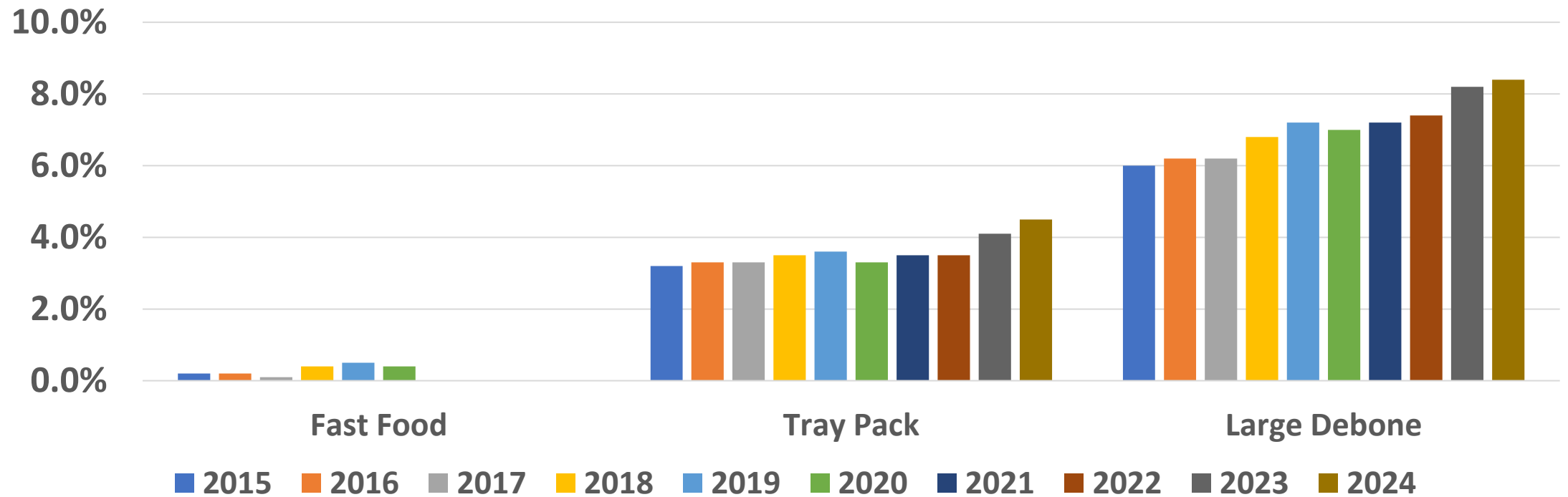


% of Product Mix produced as Leg Quarters

U.S. Industry : 2015 through 2024 by Industry Sector



% of Product Mix as Deboned Dark Meat U.S. Industry : 2015 through 2024 by Industry Sector



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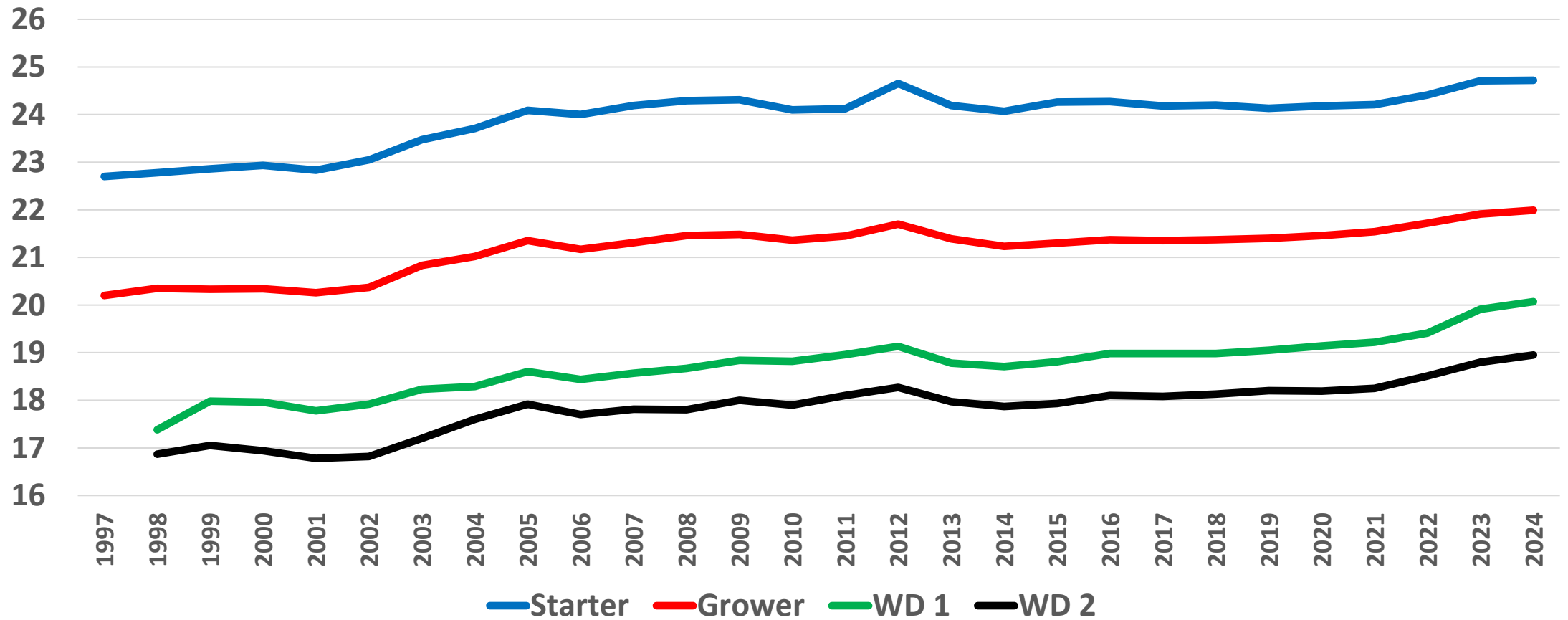
Changes in Yield Percentages 1995 through 2024

	<u>1995</u>	<u>2005</u>	<u>2024</u>
WOG Yield	68.24	72.75	82.29
Front ½ of Live	35.07	40.11	49.19
Front ½ of WOG	51.38	55.12	59.70
Back ½ of Live	33.18	32.64	33.10
Back ½ of WOG	48.62	44.88	40.30
Live Wt. Lbs.	4.75	5.83	6.69

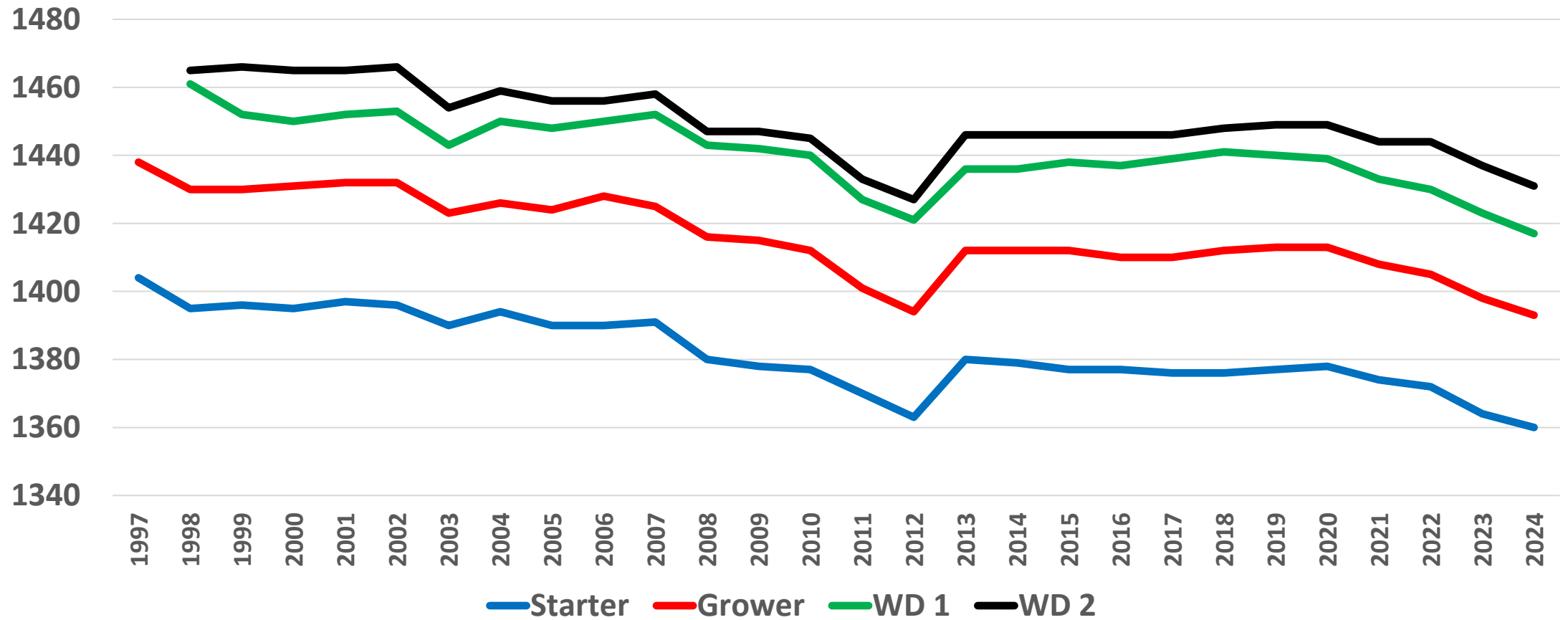
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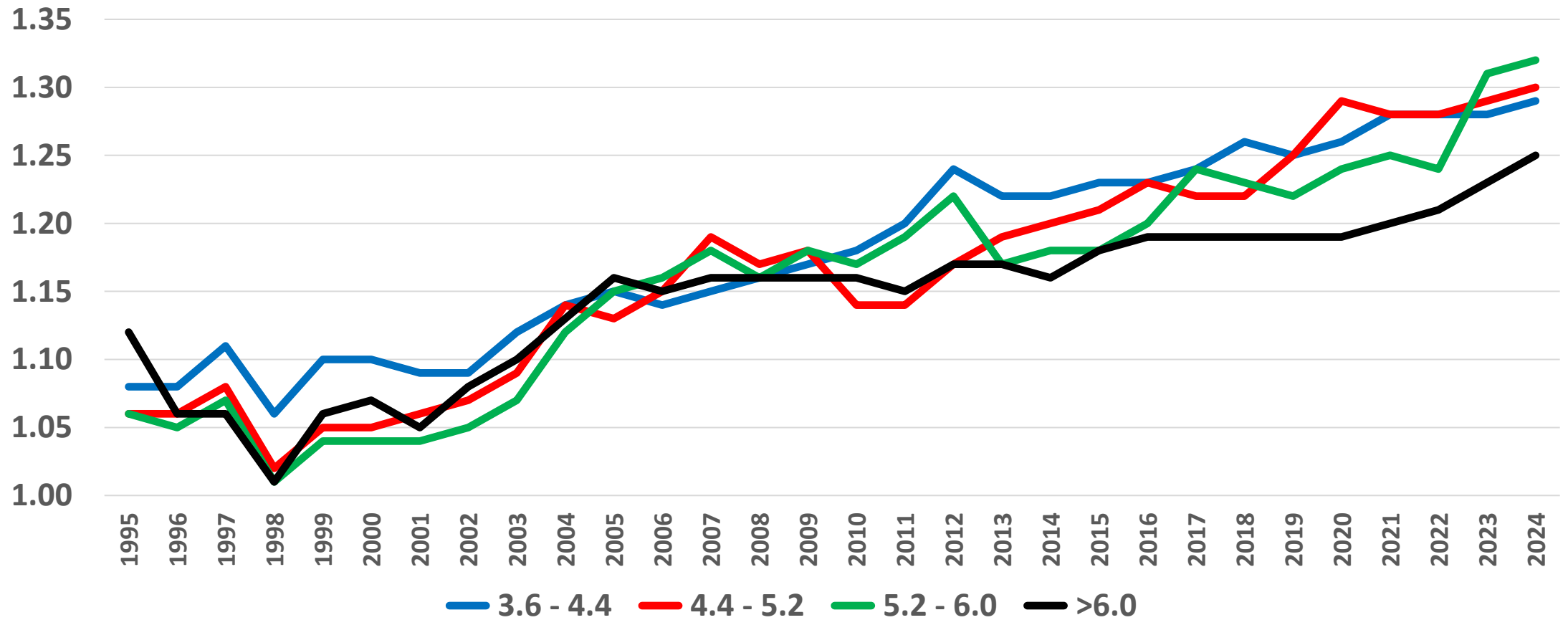
% Protein in Broiler Feeds



Calories in Broiler Feeds

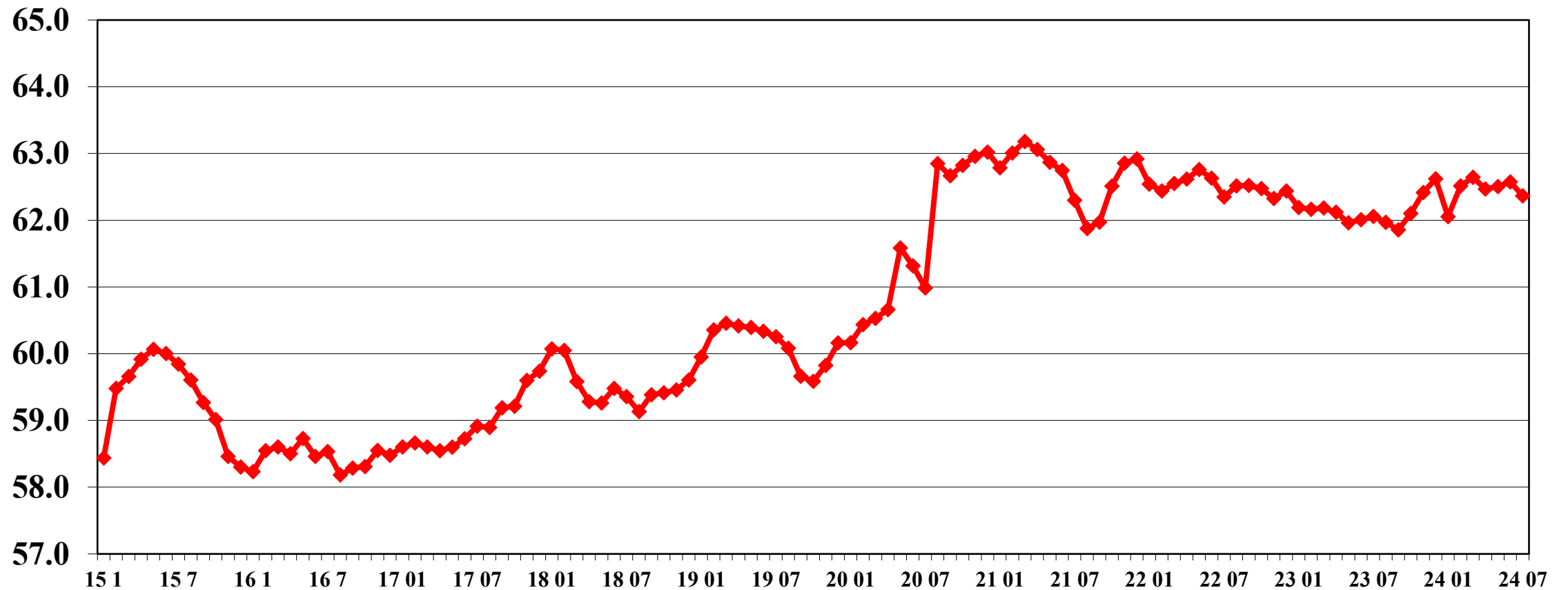


% Lysine Fed to Broilers at Different Wt. Ranges



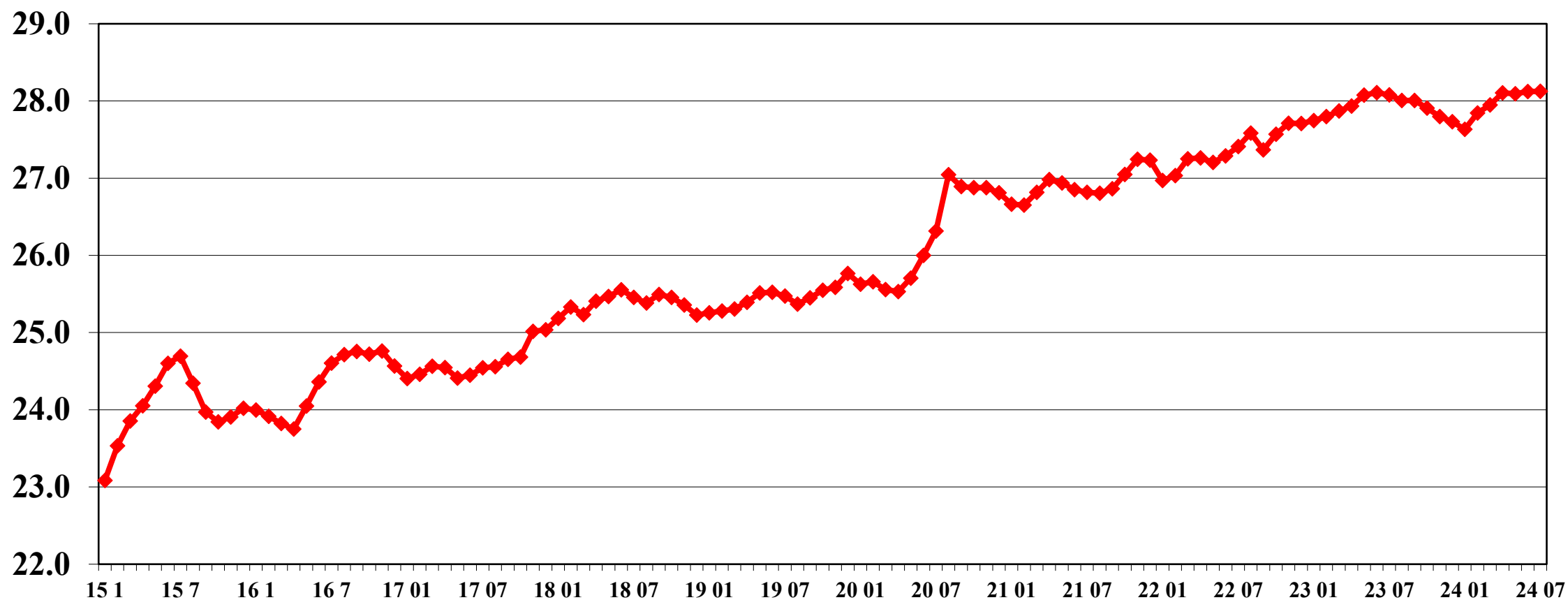
Corn as a % of a Ton of Feed

January 2015 through July 2024



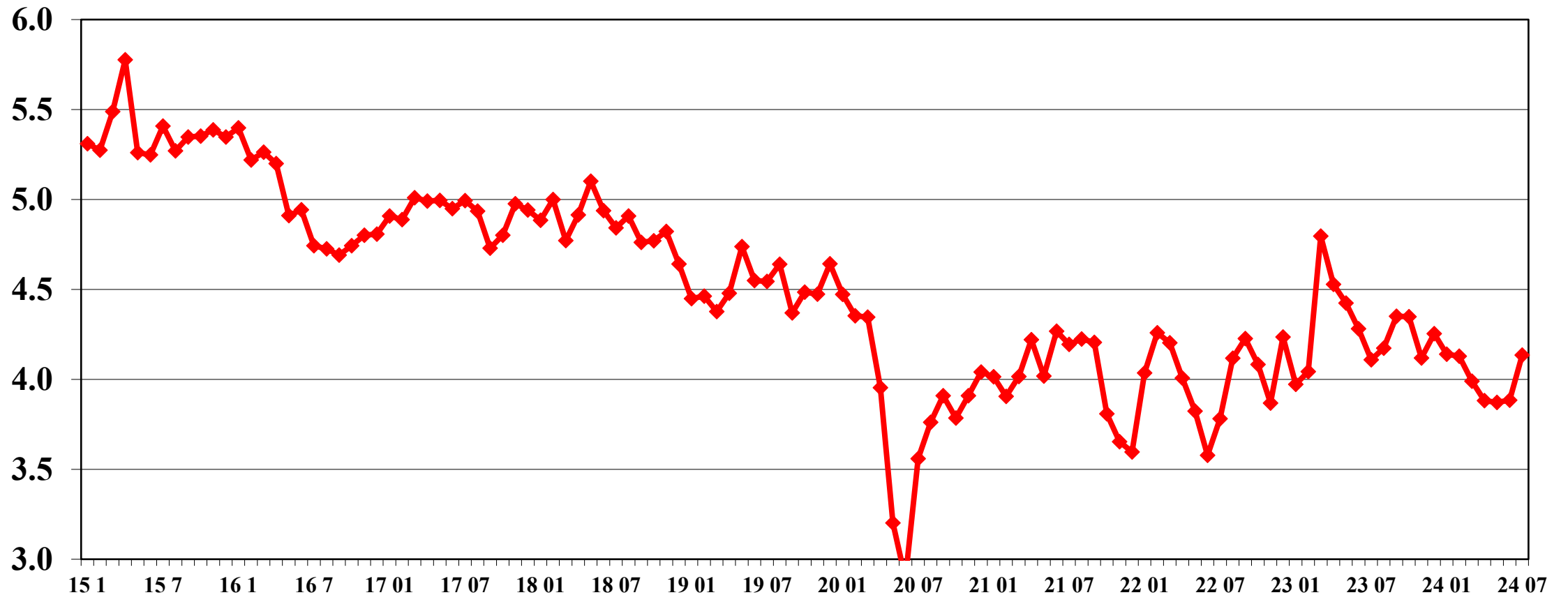
Soybean Meal as a % of a Ton of Feed

January 2015 through July 2024



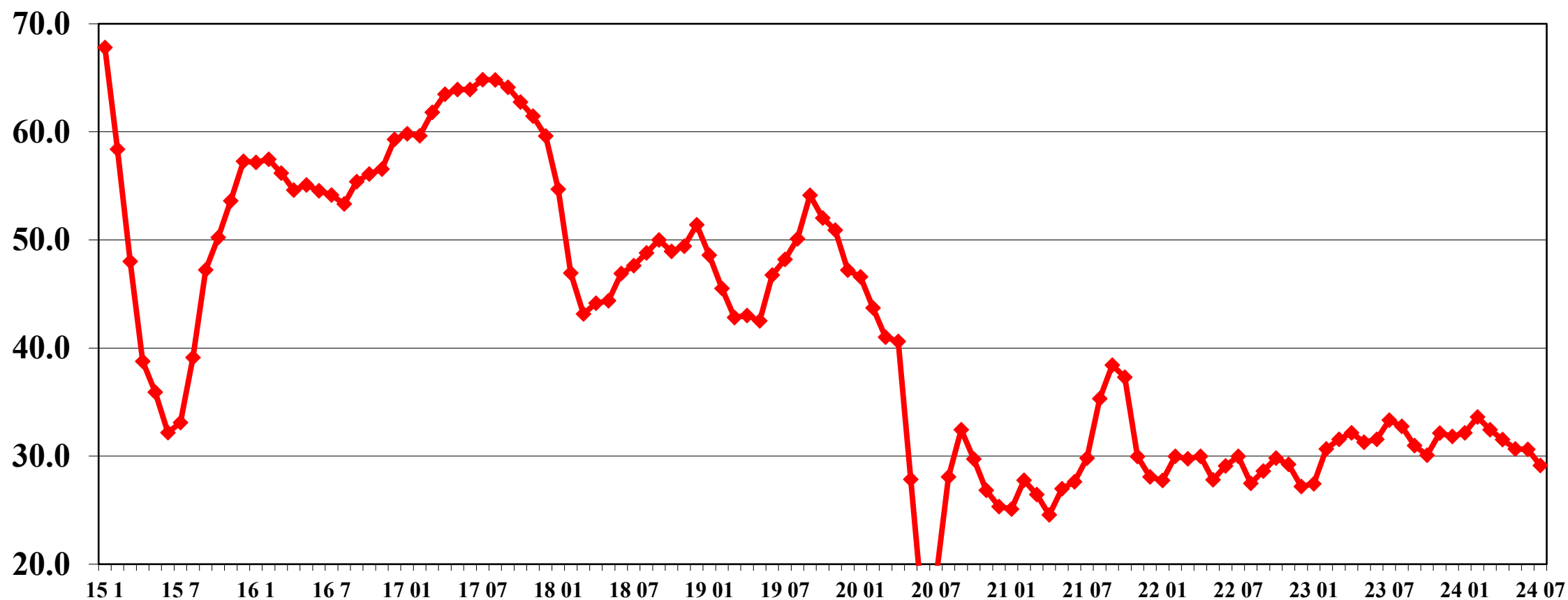
DDGS as a % of a Ton of Feed

January 2015 through July 2024



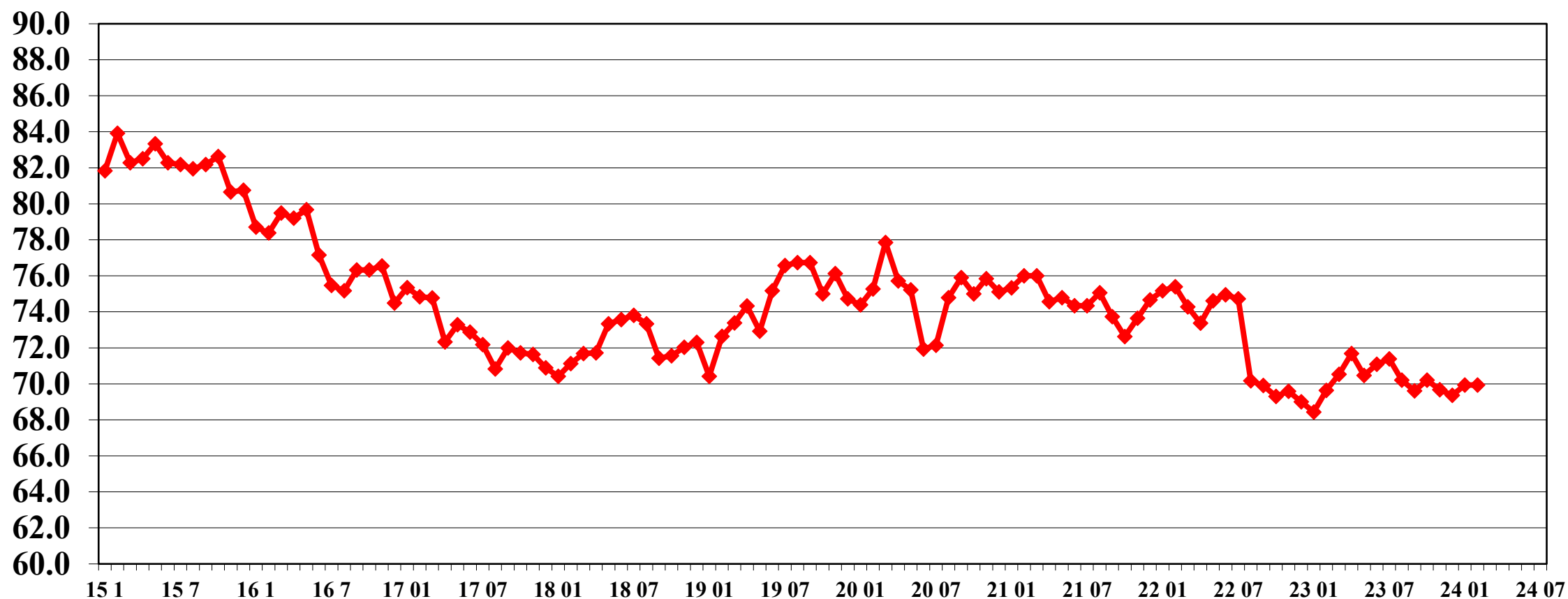
% of Feeding Programs using DDGS

January 2015 through July 2024



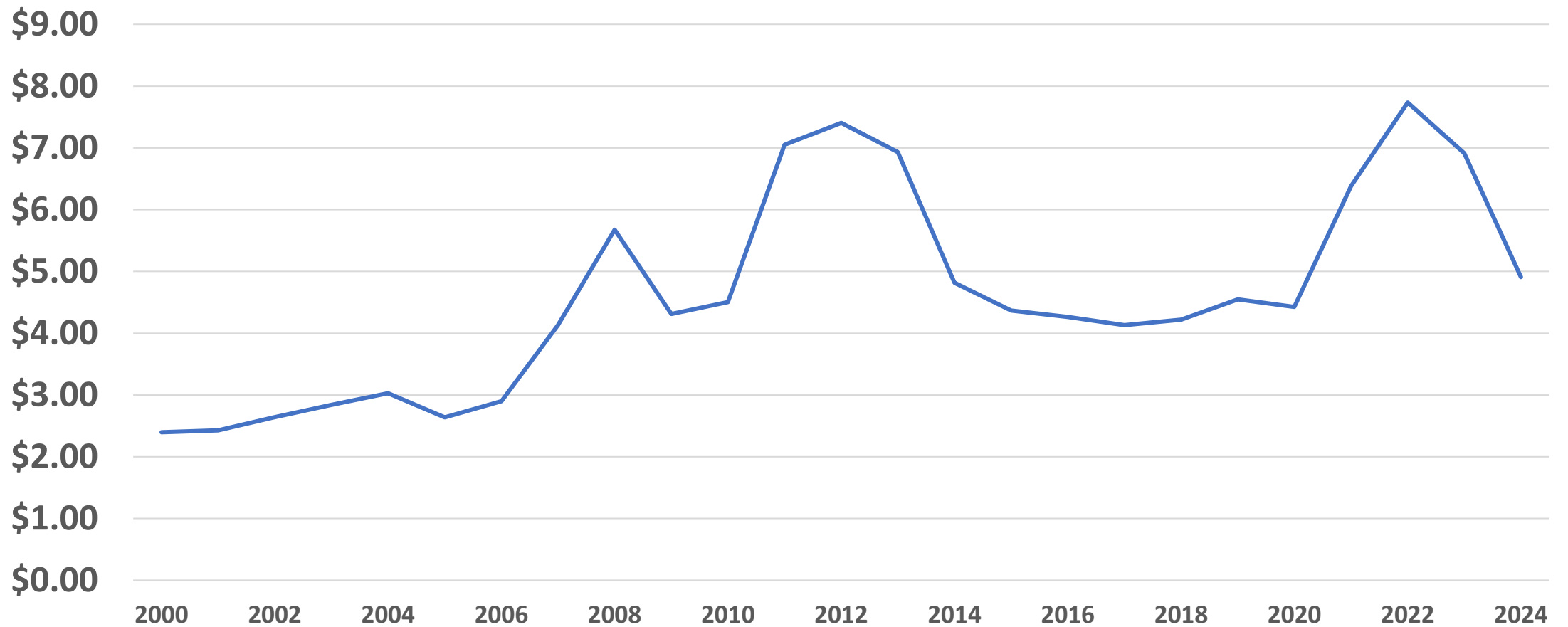
% of Feeding Programs using Animal Protein

January 2015 through July 2024



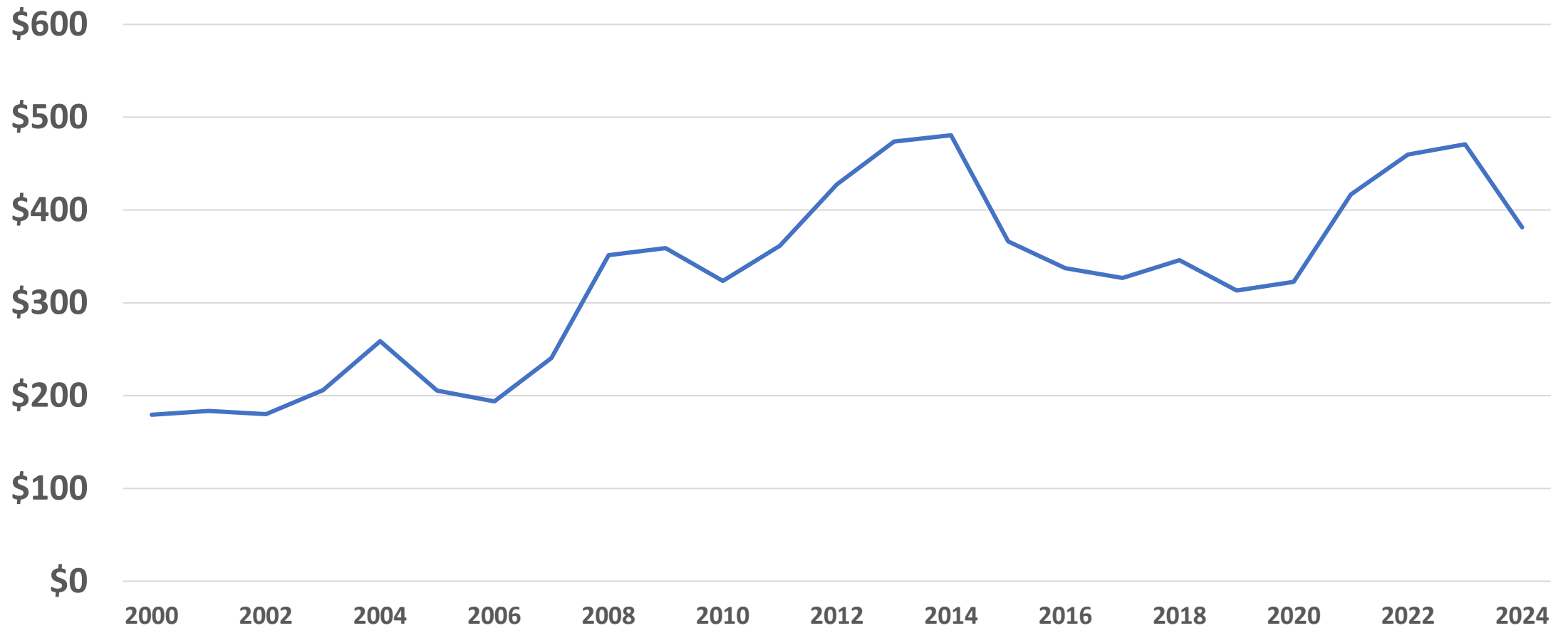
Actual Corn Cost \$/Bushel

U.S. Broiler Industry 2000 through 2024

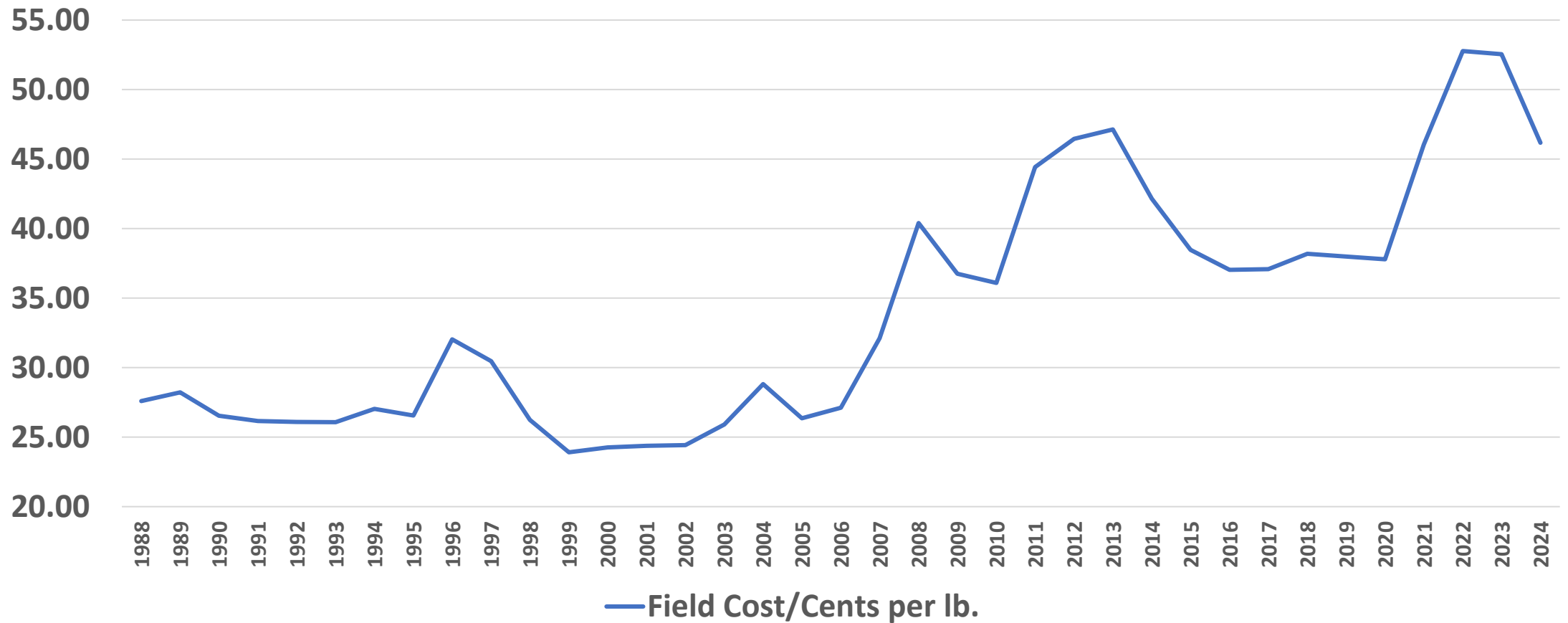


Actual Soybean Meal Cost \$/Ton

U.S. Broiler Industry 2000 through 2024



Live Production Cost (Cents/Live Lb.) U.S. Broiler Industry 1988 through 2024



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First HPAI challenges

- **1983: First experience with HPAI in Pennsylvania, Chicken Exports small at that time except for genetic breeding stock.**
 - **17 Million chickens and turkeys euthanized to control the infection**
- All broiler exports, 2.5 to 3 lb. WOGs, markets primarily Middle East, major exporting countries France and Brazil
- Gumboro and Infection Bronchitis major challenges. Also still lots of concerns about Marek's Disease.

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- **Marek's Disease**

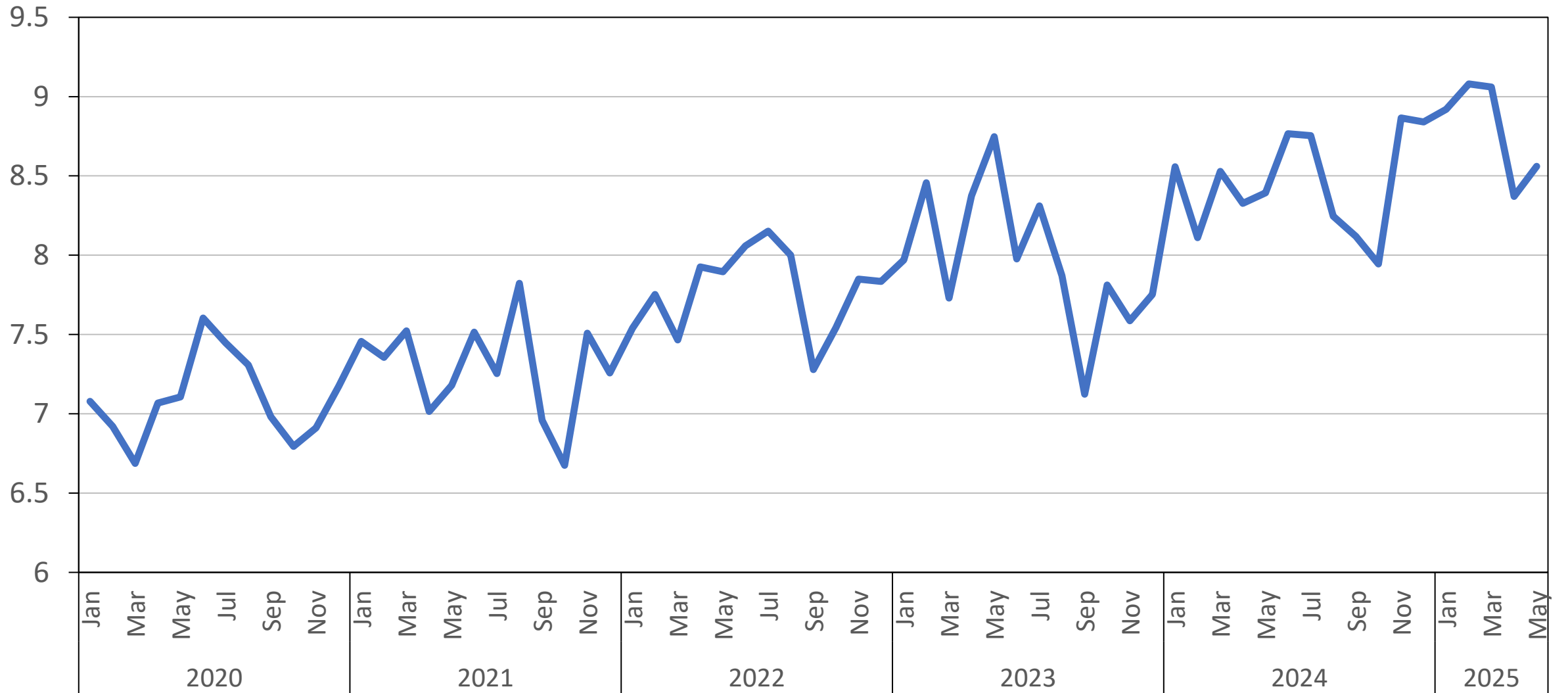
'J' Virus

- **1996/1997 - Avian Leucosis 'J' Virus becomes more pathogenic**
 - **Average Hen Mortality increases from 14% to over 18%**
- **1998 through 2001 Chicken Prices increase due to shortage of eggs/chicks/broilers.**
- **Pullet chick placements increase to offset higher pullet and hen mortality**
- **Genetics companies blood test all Pure Lines and Great Grandparent Flocks, eliminating all birds testing positive for Leucosis**
- **2001/2002 – Pullet Mortality returns to 'normal' levels**
- **2002 - Large increases in broiler availability.**

2020s: Major Challenges

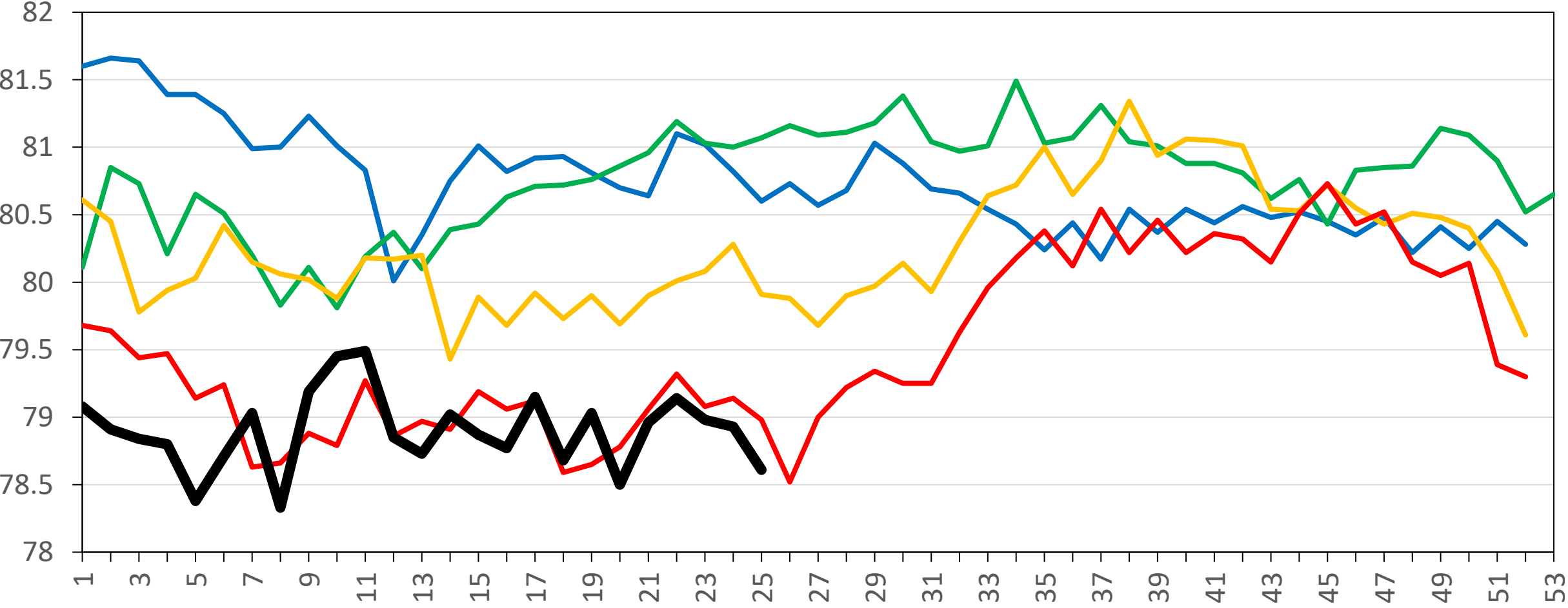
- **Widespread HPAI across North America and around the world.**
- **‘New’ disease challenges, AMPV.**
- **Hatchability**
- **Pullet and Hen Mortality**
- **Broiler Mortality**

US Pullet Mortality at Capitalization



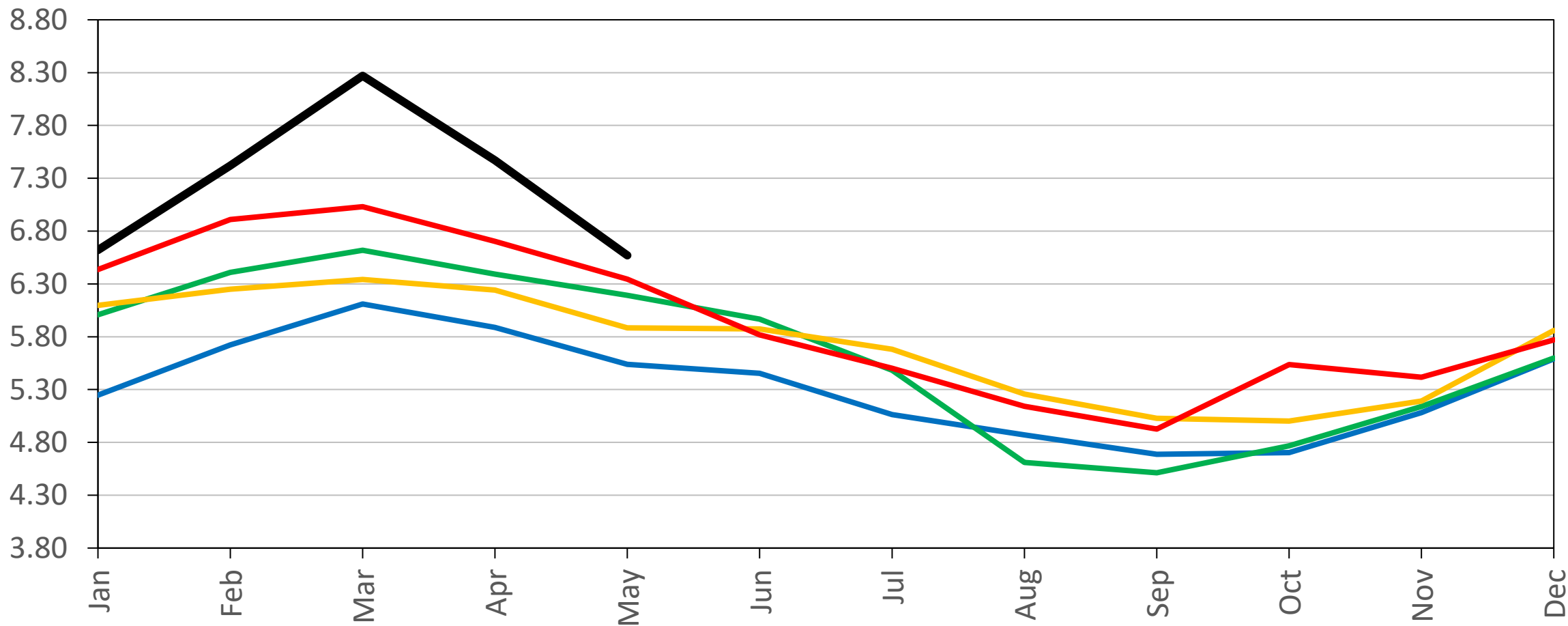
Average Hatchability Adjusted to 45 Weeks of Age Full Year

—2021 —2022 —2023 —2024 —2025



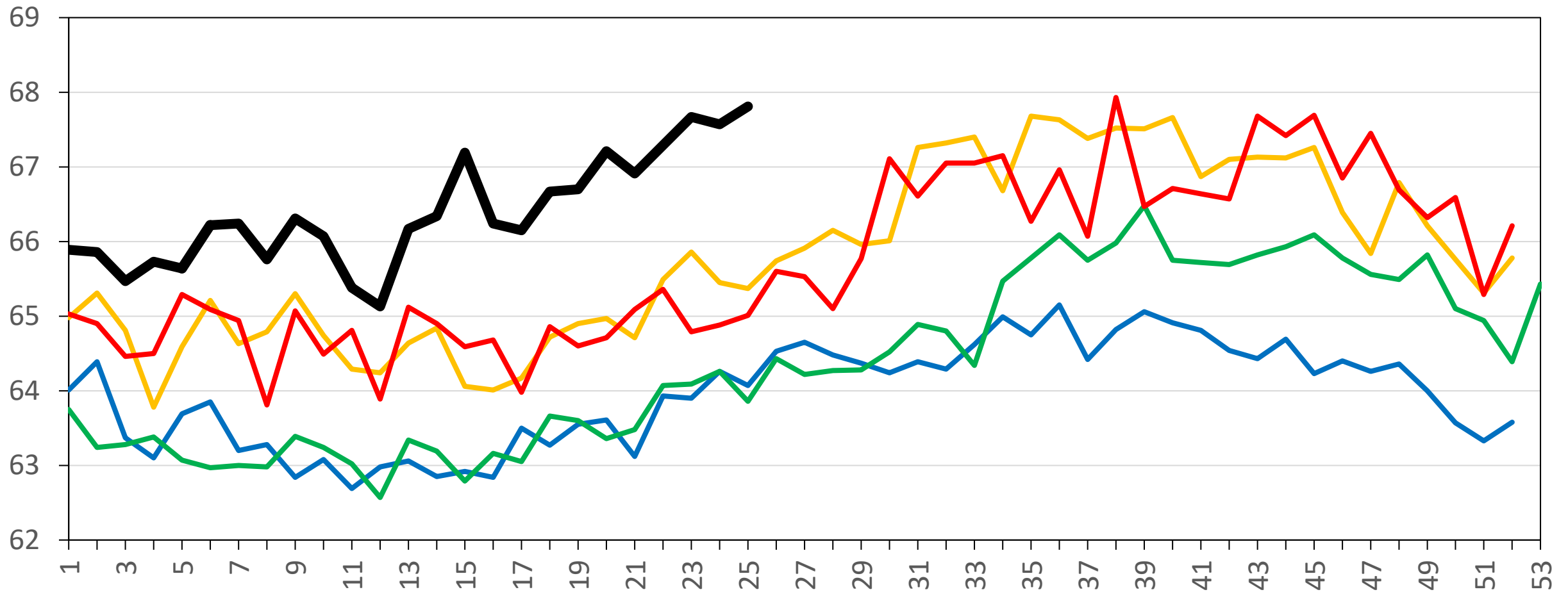
Average Total Broiler Mortality %

—2021 —2022 —2023 —2024 —2025



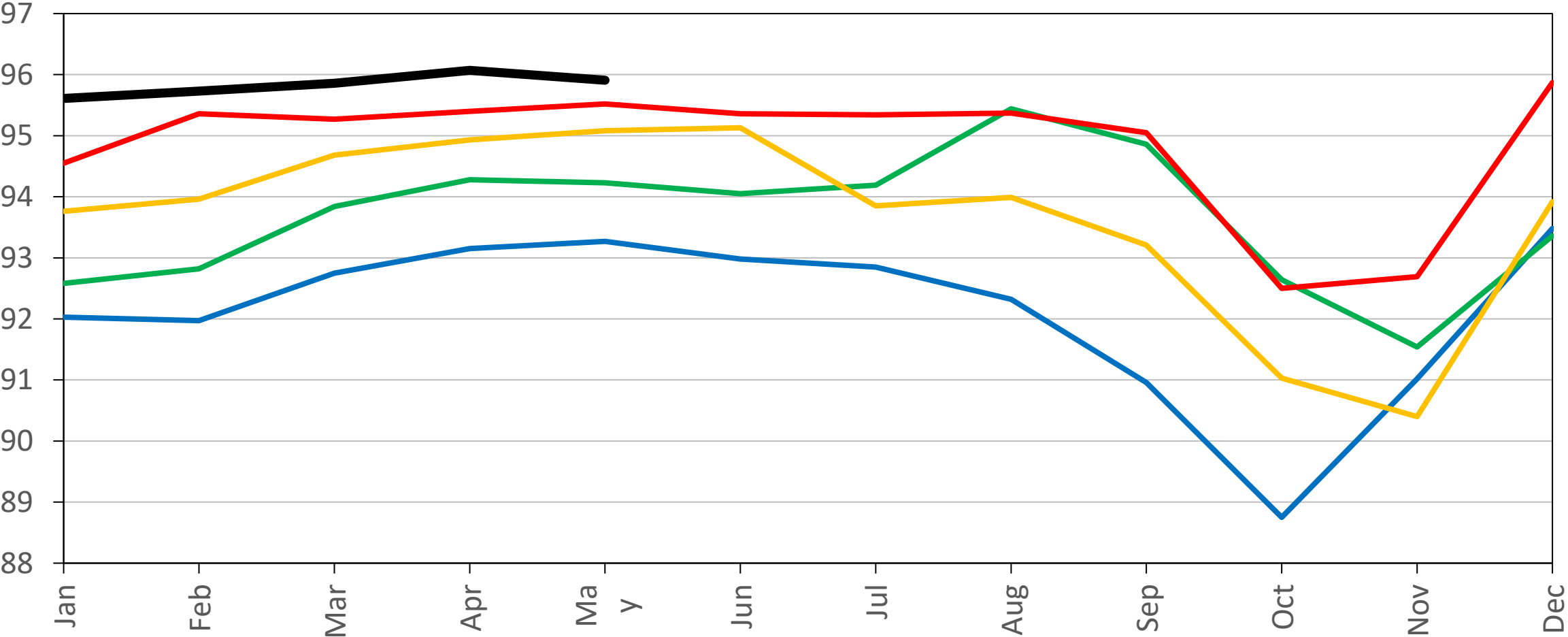
Hen Day Production Adjusted to 45 Weeks of Age

—2021 —2022 —2023 —2024 —2025



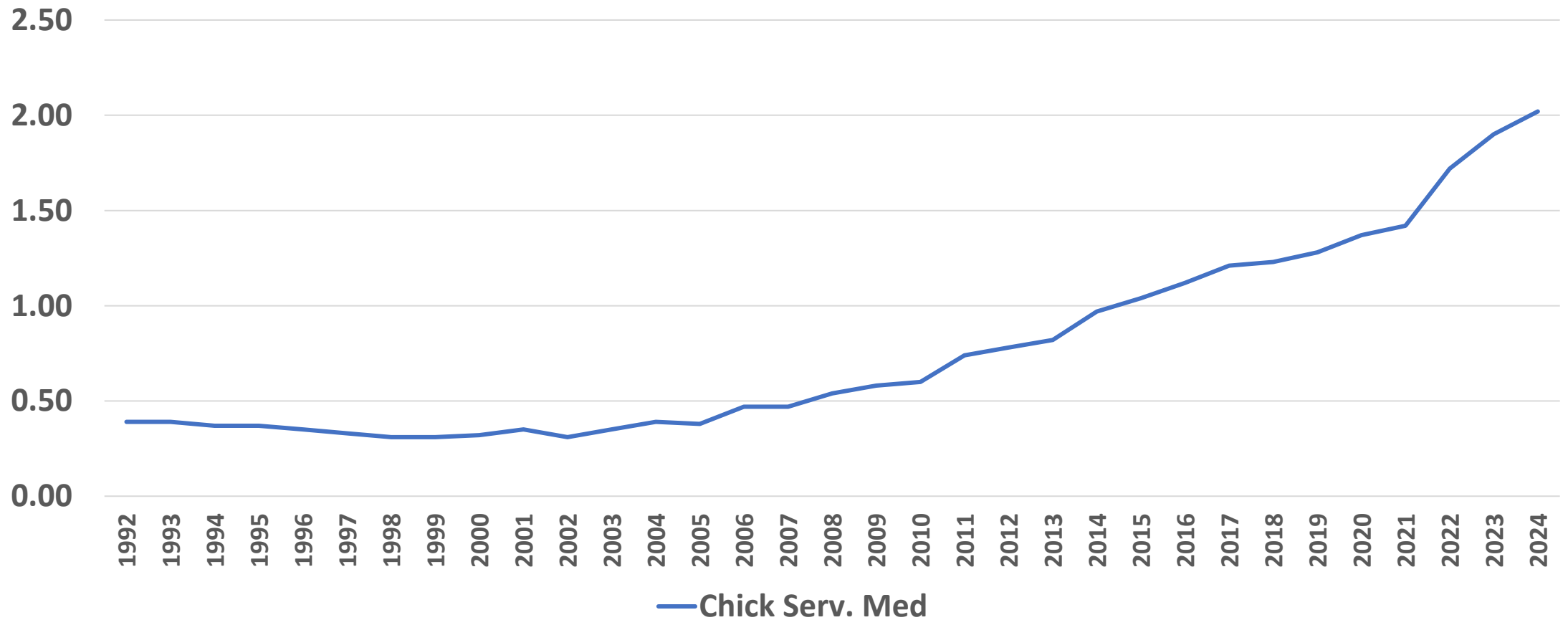
U.S. Industry % Hatchery Utilization: Weighted Average

—2021 —2022 —2023 —2024 —2025



Costs and Efficiencies : 1992 – 2024

Vaccine Cost (Cents/Chick)



Broiler Feed Medication Cost/Ton (incl. coccidiostats and antibiotics) 2015 through 2023

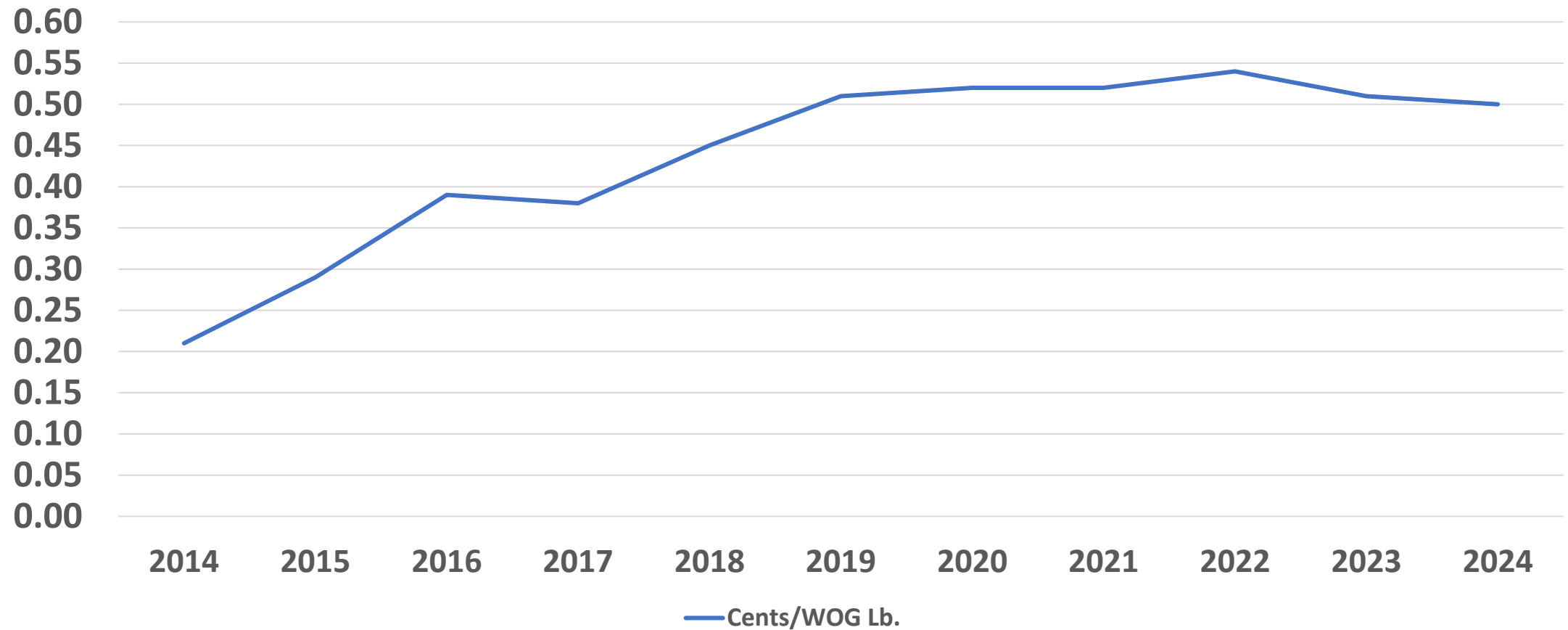
	<u>Broiler Feed Med. Cost/Ton</u>	<u>% of Total Feed Cost</u>
2015	\$ 4.15	1.66%
2016	\$ 4.05	1.72%
2017	\$ 3.71	1.62%
2018	\$ 3.27	1.37%
2019	\$ 3.85	1.64%
2020	\$ 4.02	1.73%
2021	\$ 3.73	1.19%
2022	\$ 3.57	0.96%
2023	\$ 3.27	0.91%

Tons of Feed Produced 2023:
Feed Medication/Ton: \$ 3.27
Total Value: \$ 178,468,105

**Total Spending on All Vaccination and Medication Costs per Live Lb.
Pullets, Breeders, Hatchery, Feed Meds and Field Meds.
2015 through 2023**

	<u>USDA Live Lbs. (000)</u>	<u>Total \$'s Spent</u>
2015	53,169,030	\$ 397,482,283
2016	54,037,067	\$ 405,491,716
2017	55,314,913	\$ 407,038,868
2018	56,541,518	\$ 396,353,197
2019	58,286,994	\$ 448,244,071
2020	59,135,024	\$ 476,048,013
2021	59,472,913	\$ 455,818,374
2022	61,175,503	\$ 511,749,041
2023	61,370,551	\$ 517,693,843

Processing Anti-microbial Cost : Cents per WOG Lb. U.S. Broiler Industry : 2014 through 2024



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- **1980 – 4.0 lb. live weight chicken at 52 days with a 2.10 FCR**
- **2024 – 4.0 lb. live weight chicken at 34 days with a 1.58 FCR**

- **1980 Per Capital Consumption of Chicken 45.8 lbs**
- **2024 Per Capita Consumption of Chicken 102.1 lbs.**

Thank you!