



Animal Agriculture Economic Analysis: Pennsylvania, 2000-2010

**A report prepared for
United Soybean Board**

June 2011

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CONTENTS

EXECUTIVE SUMMARY	2
SECTION 1: INTRODUCTION	2
SECTION 2: ANIMAL AGRICULTURE SBM USE: PENNSYLVANIA	2
SECTION 3: THE IMPACT OF ANIMAL AGRICULTURE IN PENNSYLVANIA	3
3.1 Output, earnings and employment multipliers	3
3.2 Impact estimates for output, earnings, employment, and taxes	4
3.3 Long term impact of animal agriculture	4
SECTION 4: RECENT DEVELOPMENTS AND LONG TERM TRENDS	5
4.1 Recent developments	5
4.2 Long term trends	5
APPENDIX	9

EXECUTIVE SUMMARY

Soybean meal (SBM) plays an important role in animal agriculture in Pennsylvania, which in turn has a significant impact on the state's economy. In Pennsylvania:

- Animal agriculture in 2010 used an estimated 742,000 tons of SBM across many products: the largest categories were broilers (26%), eggs (23%), milk (19%), and pork (18%);
- At the state level, animal agriculture represented \$8.3 billion in revenues, \$1.5 billion in household income, and 60,000 jobs. In addition to the effect on income and jobs, animal agriculture is a significant source of tax revenues. In Pennsylvania in 2010, it yielded an estimated \$354 million in income taxes, and \$212 million in property taxes; and
- Over the past decade, the expansion of animal agriculture has led to an increase of \$129 million in economic output, \$22 million in household wages, over 350 jobs, and \$5.2 million in additional tax revenue.

This report provides a concise look at the positive impact animal agriculture has on Pennsylvania's economy.

SECTION 1: INTRODUCTION

Domestic livestock industries are by far the major source of demand for US soybean meal, and future soybean demand is tightly linked to the health of those industries. In order to act at the state and local levels, one needs data and analysis on the economic importance of animal agriculture at those levels. This report addresses this constraint.

On behalf of the United Soybean Board, Promar International has compiled data on the breakdown of animal agriculture by species in each state, estimated soy feed consumption by species, and analyzed the economic impact of animal agriculture by calculating its effect on output, wages, employment and tax revenue. We have also highlighted long-term trends and recent developments, where relevant.

For explanations on data sources and our analysis, please review our national report, "Animal Agriculture Economic Analysis: 2000-2010."

SECTION 2: ANIMAL AGRICULTURE SBM USE: PENNSYLVANIA

In this section, we provide information on soybean meal use in animal agriculture in the state. The state database contains information such as: livestock production and value data, agricultural and economic census data, taxation data, and computation of meal use by livestock and poultry.

Animal agriculture in Pennsylvania used an estimated 742,000 tons of soybean meal in 2010.

SBM use by animal agriculture category: Pennsylvania

2010 Pennsylvania SBM usage (%)		
PA	SBM Usage	Percent Usage
2010	1,000 short tons	%
beef	22	2.9%
pork	134	18.0%
broilers	194	26.1%
turkeys	43	5.7%
eggs	172	23.2%
milk	141	19.0%
other	37	5.0%
TOTAL	742	100%

Source: NASS, Promar International

SBM usage in Pennsylvania is used across many products: the most important are broilers (26%), eggs (23%), milk (19%) and pork (18%).

SECTION 3: THE IMPACT OF ANIMAL AGRICULTURE IN PENNSYLVANIA

3.1 Output, earnings and employment multipliers

To estimate the impact of livestock production on Pennsylvania’s economy, we applied RIMS II multipliers from the Department of Commerce for cattle and dairy farming, poultry and egg production, and other animal production using SBM (mostly hogs and pigs). The table below shows the multipliers for Pennsylvania. They represent the impact associated with \$1 million of industry sales.

Economic impact multipliers: Pennsylvania

	Output (\$)	Earnings (\$)	Employment (jobs)
Cattle & calves	1.9530	0.3343	13.5063
Dairy	2.0661	0.3838	16.8626
Poultry & eggs	2.4894	0.4452	14.7219
Hogs & pigs and other	1.8119	0.3221	12.2488

Source: RIMS II, BEA, Department of Commerce

The economic impact of animal agriculture in Pennsylvania is substantial. \$1 million in production in the above segments yields \$1.81-2.49 million in total economic activity, \$320,000- \$450,000 in household wages, and 12.2-16.9 additional jobs.

3.2 Impact estimates for output, earnings, employment, and taxes

When applied to production values for each livestock category, the multipliers above yield an estimate of the overall economic impact, household earnings, and jobs supported in Pennsylvania by the livestock industries.

Economic impact of animal agriculture - Pennsylvania

Total Economic Impact	2010	Change 2000 - 2010	% change 2000 - 2010
Output (\$1,000's)	\$ 8,349,546	128,993	1.57%
Earnings (\$1,000's)	\$ 1,514,757	22,183	1.49%
Employment (jobs)	59,683	358	0.60%
Income taxes (\$1,000's)	\$ 354,453	5,191	1.49%
Property Taxes (\$1,000's) *2007	\$ 211,603		

Source: RIMS II, BEA, Department of Commerce; NASS; USDA Census; Promar International

At the state level, animal agriculture in Pennsylvania represents \$8.3 billion in revenues, \$1.5 billion in household income, and 60,000 jobs. In addition to the effect on income and jobs, animal agriculture is a significant source of tax revenues. In Pennsylvania in 2010, it yielded an estimated \$354 million in income taxes, and \$212 million in property taxes.

3.3 Long term impact of animal agriculture

The expansion of animal agriculture in Pennsylvania over the past ten years has led to an increase of \$129 million in economic output, \$22 million in household wages, over 350 jobs, and \$5.2 million in additional tax revenue.

Note: In order to remove the influence of price changes, we used production unit values (at 2010 prices) as the basis for comparison over time. In addition, our multipliers are for categories that aggregate beef and dairy production, poultry and egg production, and hogs and pigs and “other.” Thus, for example, a decline in dairy can be masked by an increase in beef cattle.

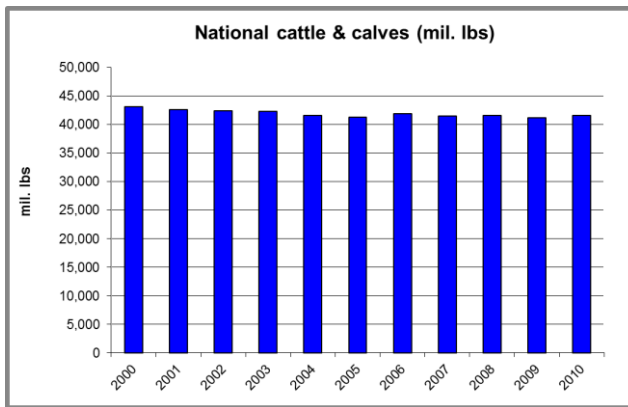
SECTION 4: RECENT DEVELOPMENTS AND LONG TERM TRENDS

4.1 Recent developments

A bill passed the Pennsylvania House on June 2 licensing the use of “PA Preferred” trademark for all Pennsylvania agricultural commodities. The bill is headed to the Senate.

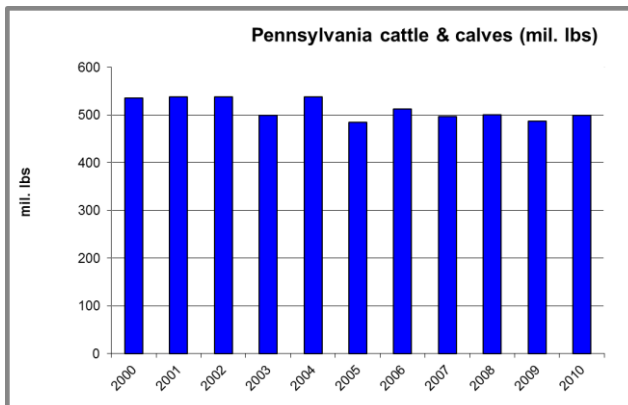
The EPA’s proposed pollution diet for the Chesapeake Bay will increase enforcement and compliance of state requirements of agriculture and commit state funds to developing and implementing state-of-the-art-technologies for converting animal manure to energy for farms, if it stands after being challenged in court.

4.2 Long term trends

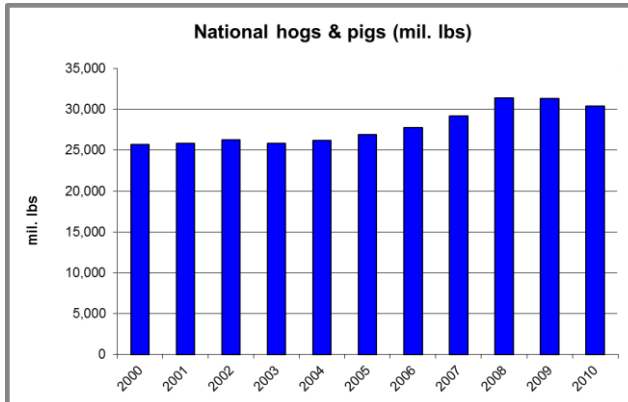


Cattle

- Nationally, cattle production has decreased by 3.4% in the last ten years.
- There has been volatility as well: production has varied by up to 2% from year to year.

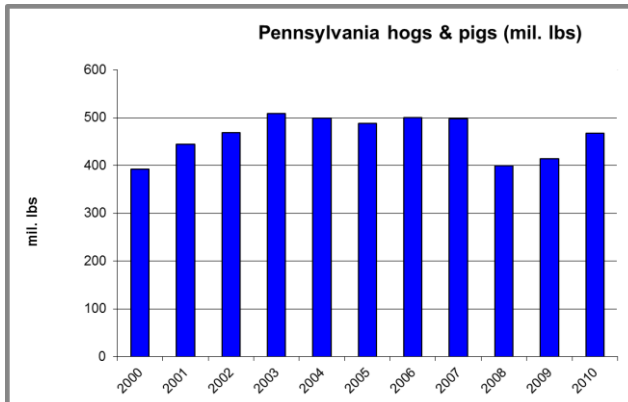


- In Pennsylvania, cattle production has decreased by 7% over the past decade.

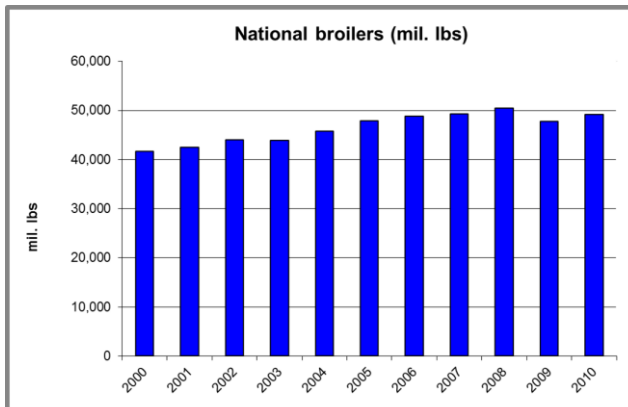


Hogs

- Production peaked in 2008, at over 31.4 billion pounds, but has since declined, to 30.3 billion pounds in 2010.

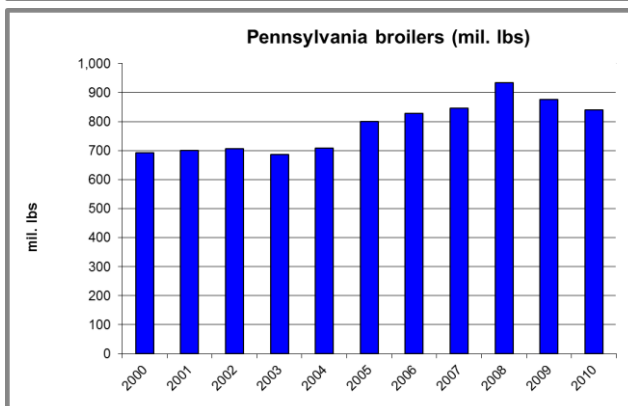


- In Pennsylvania, production expanded to 500 million tons by 2003, remained stable until 2007, dropped 20% in 2008 and has since partly recovered to 470 million pounds.

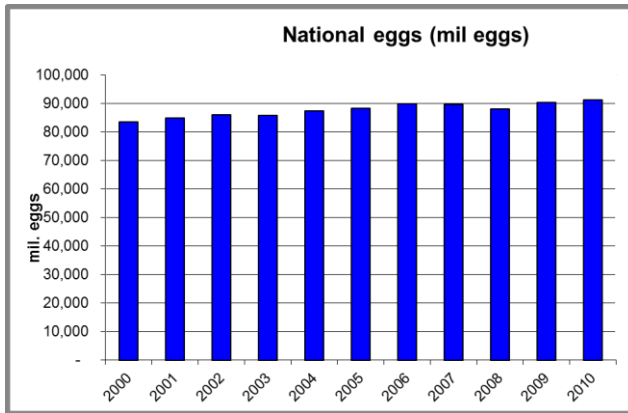


Broilers

- National broiler production has increased on average by more than 1.5% the past decade, topping 50 billion pounds in 2008.
- Production in dropped in 2009, with a partial recovery in 2010.

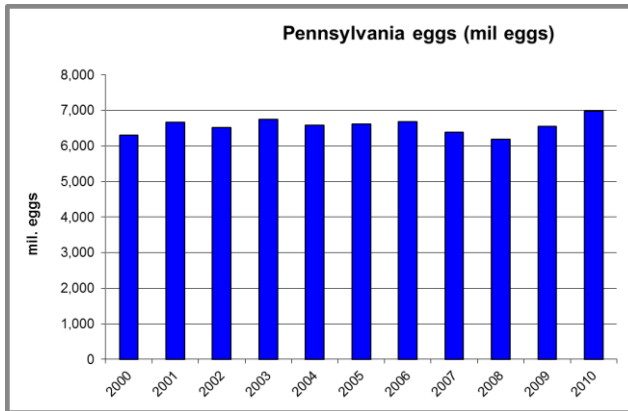


- Pennsylvania's broiler production was stable through 2004, and then increased, to a peak of 930 million pounds in 2008.
- Production has since declined; it was 840 million pounds in 2010.

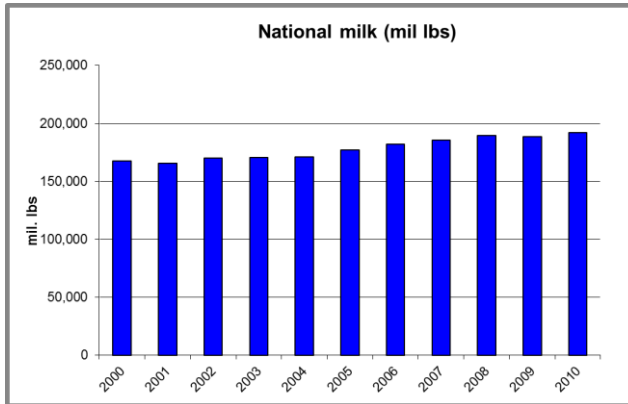


Eggs

- National egg production has increased steadily, by an average of about 1% annually over the past decade.
- Production hit an all-time high in 2010 at 91.4 billion eggs.

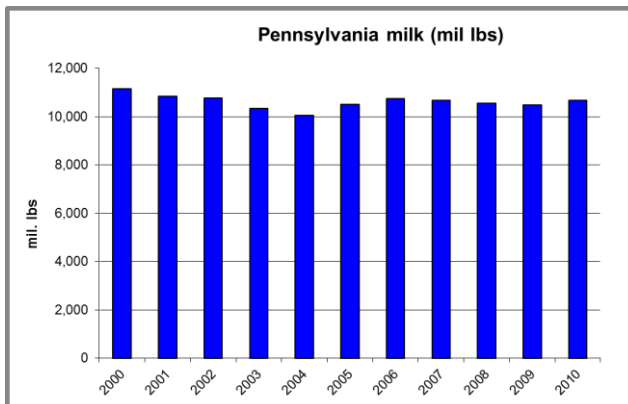


- In Pennsylvania, production peaked in 2010 at 7 billion eggs.

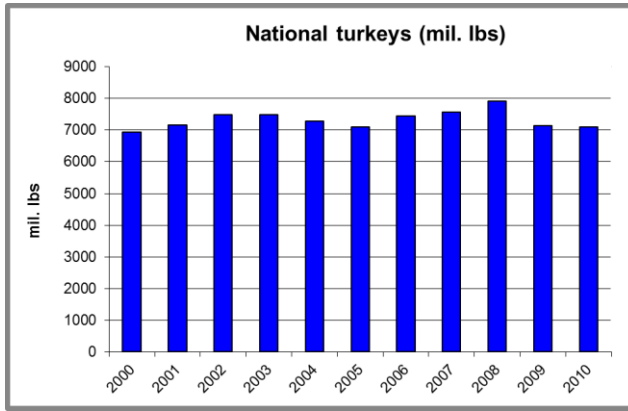


Milk

- Of all segments evaluated, milk has exhibited the most consistent growth, continuing to expand even through the recession in 2009.
- National milk production has increased by over 18% in the past decade. Production in 2010 was 191.8 billion pounds.

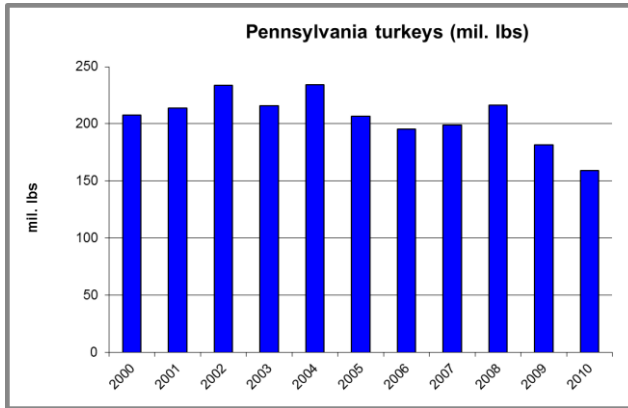


- Milk production in Pennsylvania has remained stable, at about 10.5 billion pounds.



Turkeys

- National turkey production grew by approximately 2.4% over the decade ending in 2010.
- Production peaked in 2008 then dropped by 10% as stocks in storage had built up too much in the wake of falling demand.



- In Pennsylvania, production was variable through 2008. In the past two years, output has dropped sharply, to 159 million pounds.

APPENDIX

Appendix - Basic Livestock and Economic Impact Data – Pennsylvania

Inventories	PA	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Jan ('98 - '11)	cattle & calves (1,000 head)	1,640	1,640	1,630	1,640	1,620	1,610	1,590	1,600	1,590	1,590	1,620	
Dec ('97 - '10)	hogs & pigs (1,000 head)	1,030	1,060	1,130	1,110	1,080	1,100	1,080	1,170	1,120	1,120	1,140	
Quantity of output	cattle & calves (1,000 lbs)	535,940	538,450	538,505	499,865	538,485	484,744	512,658	496,505	501,117	487,535	499,580	
	hogs & pigs (1,000 lbs)	391,764	444,220	468,796	508,374	498,619	488,277	499,473	497,553	399,000	414,382	467,673	
	broilers (1,000 lbs)	493,200	701,200	706,000	686,900	707,600	799,700	808,900	846,700	933,200	875,000	839,100	
	turkeys (1,000 lbs)	207,390	213,750	233,640	215,650	234,000	206,850	195,300	199,100	216,200	181,800	159,100	
	eggs (mil eggs)	6,309	6,662	6,520	6,754	6,585	6,608	6,687	6,392	6,189	6,543	6,976	
	milk (mil lbs)	11,156	10,849	10,775	10,338	10,062	10,503	10,742	10,682	10,551	10,485	10,680	
Value of production (\$1,000)	cattle & calves (\$1,000)	349,085	368,500	330,351	379,824	412,965	395,912	381,645	385,260	387,881	349,765	404,963	
	hogs & pigs (\$1,000)	151,708	177,916	461,420	175,506	224,313	221,729	198,241	191,906	161,145	161,580	238,980	
	broilers (\$1,000)	242,620	287,492	225,920	247,284	325,496	357,930	306,693	381,015	429,272	399,875	404,446	
	turkeys (\$1,000)	93,326	98,325	91,120	101,356	119,320	111,010	105,462	103,532	138,368	99,990	95,460	
	eggs (\$1,000)	286,402	303,470	279,025	371,170	339,744	214,188	238,351	389,119	488,056	367,224	408,227	
	milk (\$1,000)	1,521,522	1,800,934	1,486,950	1,447,320	1,769,680	1,774,162	1,568,332	2,232,538	2,115,000	1,519,344	1,964,322	
	other	13,083	12,460	11,932	13,792	14,061	13,363	12,930	11,630	13,715	14,230	15,371	
	sheep & lambs (\$1,000)	5,329	5,057	5,427	7,325	7,205	7,654	7,390	5,174	5,901	5,351	6,392	
	catfish (\$1,000)												
	trout (\$1,000)	5,439	4,894	4,865	4,678	4,223	4,807	4,790	5,212	5,149	5,149	5,249	
	mink (\$1,000)	2,315	2,509	1,640	1,789	2,633	902	750	1,244	2,665	3,730	3,730	
	Total		2,657,746	3,049,097	2,886,718	2,736,252	3,198,579	3,088,294	2,811,654	3,695,000	3,733,437	2,912,008	3,531,769

Census of AG		1997	2002	2007
Number of farms	Beef cattle ranching and farming (112111)	7,083	7,677	8,350
(NAICS classification)	Cattle feedlots (112112)	2,463	3,197	1,611
	Dairy cattle and milk production (11212)	9,591	8,678	7,434
	Hog and pig farming (1122)	1,130	1,366	1,072
	Poultry and egg production (1123)	1,320	1,655	2,691
	Sheep and goat farming (1124)	993	1,524	2,010
	Animal aquaculture and other animal prdxn (1125,1129)	2,947	6,736	8,062
Value of sales \$1,000	cattle & calves	372,761	441,671	556,192
	hogs & pigs	236,740	269,318	336,437
	poultry & eggs	756,800	745,624	1,015,843
	milk & other dairy products	1,330,978	1,393,992	1,890,190
	aquaculture (first Census, 1998)	7,632	15,325	44,519
	other (calculated)	89,814	70,115	95,916
	Total (livestock, poultry & their products)	2,794,725	2,936,045	3,939,097
Input purchases	Livestock and poultry purchased.....farms	16,075	17,996	15,367
	\$1,000	290,987	333,396	482,913
	Breeding livestock purchased.....farms	NA	8,990	6,716
	\$1,000	NA	66,562	76,826
	Other livestock and poultry purchased.....farms	NA	11,417	10,712
	\$1,000	NA	266,834	406,087
	Feed purchased.....farms	26,901	36,011	32,576
	\$1,000	973,221	937,355	1,267,184

Economic impacts		Output (\$1,000)	Earnings (\$1,000)	Employment (jobs)	Tax (\$1,000)
2010 Animal Ag	cattle & calves (\$1,000)	\$ 790,893	\$ 135,379	5,470	\$ 31,679
	hogs & pigs (\$1,000)	\$ 460,859	\$ 81,927	3,115	\$ 19,171
	broilers (\$1,000)	\$ 3,039,308	\$ 543,545	17,974	\$ 127,189
	dairy (\$1,000)	\$ 4,058,486	\$ 753,907	33,124	\$ 176,414
	Total impact	\$ 8,349,546	\$ 1,514,757	59,683	\$ 354,453
Change 2000 - 2010	cattle & calves	\$ (57,562)	\$ (9,853)	(398)	\$ (2,306)
	hogs, pigs, & oth	\$ 70,283	\$ 12,494	475	\$ 2,924
	poultry & eggs	\$ 297,156	\$ 53,143	1,757	\$ 12,435
	dairy	\$ (180,884)	\$ (33,601)	(1,476)	\$ (7,863)
	Total impact	\$ 128,993	\$ 22,183	358	\$ 5,191
RIMS II		Output (\$)	Earnings (\$)	Employment (jobs)	
Multipliers	cattle & calves	1.953	0.3343	13.5063	
	dairy	2.0661	0.3838	16.8626	
	poultry & eggs	2.4894	0.4452	14.7219	
	hogs & pigs and other	1.8119	0.3221	12.2488	
Tax rates	Federal effective income tax rate		12.7%		
	Federal Social Security tax rate		7.7%		
	Pennsylvania average effective income tax rate		3.1%		
	Total		23.4%		

Average effective tax rate, Best available data 2007 Sources: Tax Policy Institute, <http://www.taxpolicycenter.org/taxfacts/displayfact.cfm?Docid=533> and Self Employed and Employee/Employer combined rate. Source: Tax Foundation <http://www.taxfoundation.org/taxdata/show/24682.html>
Promar estimated income tax rate/ Tax Foundation