



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



Economic Impact of U.S. Pork Trade, 1986-2008

Glenn Grimes

and

Ron Plain

Department of Agricultural Economics Working Paper No. AEWP 2009-02

April 2009

The Department of Agricultural Economics is a part of the Division of Applied Social Sciences of the
College of Agriculture, Food and Natural Resources at the University of Missouri
200 Mumford Hall, Columbia, MO 65211 USA
Phone: 573-882-3545 • Fax: 573-882-3958 • <http://dass.missouri.edu/agecon>

Economic Impact of U.S. Pork Trade, 1986-2008

*Glenn Grimes, Professor Emeritus, Agricultural Economics, University of Missouri-Columbia
Ron Plain, Professor, Agricultural Economics, University of Missouri-Columbia*

Dept. of Agricultural Economics Working Paper No. AEWP 2009-2

The changes in U.S. pork trade in the past 23 years are quite impressive. U.S. pork exports have grown from 86 million pounds carcass weight equivalent in 1986 to 3.1 billion pounds in 2007. Another comparison shows that the U.S. has gone from a negative 1.036 billion pounds net export in 1986 to a positive 3,836 billion pounds in 2008 (Table 1).

The value of pork and pork byproduct exports has grown from \$1.97 per hog slaughtered in 1986 to \$41.94 per head slaughtered in 2008 (Table 2).

These changes in trade have permitted the pork industry to grow at an additional rate of about 1.09% per year on average over the last 23 years. In other words, the U.S. pork industry was about 27 million head larger in 2008 than it would have been had pork imports and exports remained at 1986 levels.

Not only has the increase in the quantity of pork traded allowed the industry to grow without lowering prices, but it has also added to producers' incomes in the years when net exports grew. Table 3 shows our efforts to calculate the effect of imports and exports on the price of hogs between 1986 to 2008. We believe these estimates are conservative because they show that prices increased only in the year when net exports grew. In other words, we assumed producers reacted to higher prices by increasing the U.S. herd enough to offset any price benefits from net export growth in the following years. Some observers do not believe producers could react this quickly or increase production enough to completely offset benefits in the following years.

Pork producers can take credit for much of this export growth. They have funded promotion efforts and improved the quality of pork which has made it more competitive. Efforts by the U.S. government to liberalize trade, as well as improved per capita incomes in many countries were also important factors in increasing exports. Japan is the largest U.S. pork customer, purchasing about 28% of our exports in 2008. China is second and Mexico is third in tonnage purchased from the U.S. Table 4 shows our most important pork customers by their percentage share of U.S. pork exports purchased in 2008 based on carcass weight equivalent.

Three major groups in the U.S. have contributed to the promotion of pork exports. They are USDA, the U.S. meat packing industry, and hog producers. No studies have been made, that we are aware of, to determine the amount of credit each of these groups should receive for increasing the growth in pork exports. Pork producers alone have spent nearly \$69 million in the last 23 years to promote exports through Pork Checkoff funds.

We believe the total income of all U.S. pork producers has been improved by \$12.2 billion over the last 23 years by the increase in exports (Table 3). Less than 8% of this would be required to repay all of the \$952 million in Checkoff contributions by producers during this period.

Table 1
U.S. Pork Imports and Exports
(million pounds)

Year	Pork Imports	Pork Exports	Net Pork Exports
1986	1122	86	- 1036
1987	1195	109	- 1086
1988	1137	195	- 942
1989	896	268	- 628
1990	898	243	- 655
1991	775	290	- 485
1992	646	420	- 226
1993	740	446	- 294
1994	744	549	- 195
1995	664	787	123
1996	619	970	351
1997	634	1044	410
1998	705	1230	525
1999	827	1277	451
2000	967	1287	320
2001	951	1559	608
2002	1071	1612	541
2003	1185	1717	532
2004	1099	2181	1082
2005	1024	2666	1642
2006	990	2995	2005
2007	969	3138	2169
2008	832	4668	3836

Table 2
Value of U.S. Pork and Byproduct Exports to the Pork Industry
per Head of Total U.S. Slaughter

Year	Value of Pork	Value of Byproducts	Total
1986	\$ 1.05	\$ 0.92	\$ 1.97
1987	1.59	1.10	2.69
1988	2.84	1.62	4.46
1989	3.72	1.35	5.07
1990	3.84	1.51	5.35
1991	3.79	1.71	5.50
1992	4.76	1.66	6.42
1993	5.20	1.61	6.81
1994	5.73	1.80	7.53
1995	8.79	1.83	10.62
1996	11.02	1.82	12.84
1997	11.36	2.46	13.82
1998	10.17	2.13	12.30
1999	10.86	1.83	12.69
2000	12.34	2.00	14.34
2001	14.17	2.23	16.40
2002	13.42	2.02	15.44
2003	13.80	2.38	16.18
2004	18.15	3.38	21.53
2005	22.01	3.43	25.44
2006	23.97	3.38	27.35
2007	25.21	3.68	28.89
2008	35.35	6.59	41.94

Table 3
Checkoff Funding of Export Promotion, Net Pork Trade, and
Estimated Benefit to Producers from Changes in Exports and Imports

Year	Checkoff funding mil. \$	Net Import or Export ² %	Benefit ¹ to Producers from Enhanced Pork Trade		
			Total ³ mil. \$	Per cwt. \$	Per hog \$
2008	4.9	16.43 net exp.	4,723.5	15.60	40.56
2007	4.7	9.91 net exp.	233.6	0.82	2.14
2006	4.2	9.53 net exp.	1,051.6	3.76	10.04
2005	4.8	7.94 net exp.	1,840.6	6.67	17.77
2004	4.4	5.27 net exp.	1,654.2	6.05	15.99
2003	4.7	2.67 net exp.	- 46.3	- 0.17	- 0.46
2002	4.8	2.75 net exp.	- 199.9	- 0.76	- 1.99
2001	5.2	3.18 net exp.	810.7	3.18	8.28
2000	5.2	1.69 net exp.	- 377.7	- 1.49	- 3.86
1999	4.9	2.33 net exp.	- 129.2	- 0.49	- 1.27
1998	5.7	2.76 net exp.	114.7	0.45	1.14
1997	4.8	2.37 net exp.	136.0	0.58	1.48
1996	2.5	2.05 net exp.	363.4	2.45	6.10
1995	1.8	0.69 net exp.	597.4	2.49	6.20
1994	1.3	1.11 net imp.	200.3	0.84	2.09
1993	1.2	1.73 net imp.	- 149.9	- 0.65	- 1.61
1992	1.1	1.31 net imp.	545.9	2.35	5.75
1991	1.0	3.04 net imp.	419.5	1.94	4.76
1990	0.7	4.28 net imp.	- 67.9	- 0.33	- 0.80
1989	0.5	3.98 net imp.	368.1	1.72	4.15
1988	0.3	6.03 net imp.	277.5	1.31	3.16
1987	0.1	7.59 net imp.			
Total	68.5		12,166.5	avg. 2.21	avg. 5.70

¹ Benefit is the increase in prices attributable to the changes in domestic supply resulting from trade.

² Net import or export as percent of U.S. production.

³ Used -0.5 elasticity 1988-1990
Used -0.3 elasticity 1991-1999
Used -0.2 elasticity 2000-2008

Table 4
U.S. Pork Exports by Country in 2008
Percent Share of Tonnage

Country	% of U.S. Exports
Japan	28.4
China (mainland) and Hong Kong	18.2
Mexico	14.4
Russia	9.2
Canada	9.0
South Korea	6.4
Australia	2.3
China (Taiwan)	1.2
Other	10.8

This study was funded by the University of Missouri and National Pork Board.