CONCENTRATION OF AGRICULTURAL MARKETS
April 2007

Mary Hendrickson and William Heffernan

Department of Rural Sociology -- University of Missouri
Columbia, MO 65211 (573)882-3776
e-mail: HendricksonM@missouri.edu ***email:*** HeffernanW@missouri.edu

CR4 is the concentration ratio (relative to 100%) of the top four firms in a specific food industry.

BEEF PACKERS CR4 = 83.5%*

	Daily Slaughter Capacity**
1. Tyson	36,000 head
2. Cargill	28,300 head
3. Swift & Co.	16,759 head
4. National Beef Packing Co.	13,000 head

Historical CR4

1990	1995	1998	2000	2005
72%	76%	79%	81%	83.5%

Source: *Cattle Buyer's Weekly: Steer and Heifer Slaughter reported in *Feedstuffs* 6/16/03. **Feedstuffs Reference Issue 2006 (9/13/06) as reported in *Feedstuffs* 1/29/07.
Note: Smithfield Foods is the 5th largest beef packer after a series of acquisitions.

BEEF FEEDLOTS

	One-time Capacity
1. Five Rivers (Smithfield and ContiBeef)	811,000
2. Cactus Feeders Inc.	510,000
3. Cargill (Caprock Cattle Feeders)	330,000
4. Friona Industries	275,000

Source: *Feedstuffs* Reference Issue 9/13/06 as quoted in *Feedstuffs* 10/23/06

Top Cattle Feedlots 1998	
1. Continental Grain Cattle Feeding	405,000
2. Cactus Feeders Inc.	350,000
3. ConAgra Cattle Feeding	320,000
4. National Farms Inc.	274,000
5. Caprock Industries (Cargill)	263,000

Source: *Beef Today,* Nov-Dec. 1998

PORK PACKERS CR4 = 66% (Estimated)*

	Daily Capacity**
1. Smithfield Foods	102,900
2. Tyson Foods	72,800
3. Swift & Co.	46,000
4. Cargill	36,000

Historical CR4

1987	1989	1990	2001**	2005***
37%	34%	40%	59%	64%

** *Feedstuffs Reference Issue* 2001.
*** 2007 *Feedstufs* Reference Issue

Source: *Smithfield is reported to process 27 million hogs per year and account for 26% of the total market. From this figure, we estimated the CR 4. *New York Times* 1/26/07 ** Daily Capacity from 2007 *Feedstuffs* Reference Issue.

PORK PRODUCTION

	Number of Sows*
1. Smithfield Foods	1,200,115
2. Triumph Foods	399,800
3. Seaboard Corporation	213,600
4. Iowa Select Farms	150,000

Number of Sows In 2001**	
Smithfield Foods	710,000
PSF	211,100
Seaboard	185,000
Triumph	140,000

** *Successful Farming Pork Powerhouses* (October 2001)

Source: * *Successful Farming Pork Powerhouses* (October 2006). Notes: Smithfield includes sow numbers from PSF that is pending acquisition. Triumph markets pork through Seaboard.

Prepared with financial assistance from National Farmers Union.

BROILERS CR4 = 58.5%*

1. Pilgrim's Pride
2. Tyson
3. Perdue
4. Sanderson Farms

Historical CR4

1986	1990	1994	1998	2001
35%	44%	46%	49%	50%

Source: **Feedstuffs* 1/15/07
Note: The CR2 in this sector is 47%.

TURKEYS CR4 = 55%*

	Slaughter Capacity
1. Butterball LLC**	1,420 Million #s
2. Hormel Foods (Jennie-O Turkey Store)	1,265 Million #s
3. Cargill	961 Million #s
4. Sara Lee	260 Million #s

Historical CR4

1988	1992	1996	2000	2005
31%	35%	40%	45%	51%

Source: **Feedstuffs* 10/9/06 (CR 4 is extrapolated from market share of new company.)
** Butterball LLC was created through a joint venture between Smithfield (49%) and Maxwell Foods (51%) that bought ConAgra's turkey operations.

ANIMAL FEED PLANTS

	ANNUAL CAPACITY*
1. Land O'Lakes LLC/Purina Mills	12.5 million tons
2. Cargill Animal Nutrition (Nutrena)	8.0 million tons
3. ADM Alliance Nutrition	3.2 million tons
4. J.D. Heiskell & Co.	2.8 million tons

Source: * 2007 *Feedstuffs Reference Issue* (9/13/06)

FLOUR MILLING CR4 = unknown

		Daily Milling Capacity*
1. Cargill/CHS (Horizon Milling)	CR3=55%**	291,500 cwts
2. ADM		277,800 cwts
3. ConAgra		248,600 cwts

Historical CR4

1982	1987	1990	2005
40%	44%	61%	63%

Source: * *Milling and Baking News* 10/10/06 and 2006 *Grain and Milling Annual*
** Total US 24-Hour Milling Capacity is 1,492,456 cwts (*Milling and Baking News* 6/20/06)

SOYBEAN CRUSHING CR4 = 80%*

Historical CR4

1977	1982	1987
54%	61%	71%

Census of Manufacturing

1. ADM
2. Bunge
3. Cargill
4. Ag Processing Inc.

(1–3: CR3=71%**)

Source: *2002 Census of Manufacturing (released 6/06); ***Wall Street Journal* 7/22/02

ETHANOL PRODUCTION CR4 = 31.5%

	Million Gallons/Year (Capacity)
1. ADM	1070
2. US Biofuels	250
3. VeraSun Energy Corporation	230
4. Hawkeye Renewables	220

Historical CR4

1987	1995	1999	2002
73%	73%	67%	49%

Source: http://www.ethanolrfa.org/industry
Note: Farmer owned ethanol plants accounted for 39% of total capacity.

TOP DAIRY PROCESSORS IN U.S. AND CANADA

	Annual Sales*
1. Dean Foods	$10,106 Million
2. Kraft Foods (Majority owner is Philip Morris)	$ 4,400 Million
3. Land O'Lakes	$ 3,901 Million
4. Saputo Inc.**	$ 3,461 Million

Source: **Dairy Foods*: Dairy 100* (2006)
Notes: ** Over 40% of Saputo Inc. plants are in Canada.

INPUT MARKET NOTES

Corn Seed: CR2=58%*

The CR2 in the U.S. corn seed market has remained relatively stable, changing little from a CR2 of 56%** that existed in 1997. However, while Pioneer dominated the market 10 years ago, now DuPont (Pioneer) and Monsanto have roughly equal shares.
Source: **Wall Street Journal*, 1/22/2007; ** Jorge Fernandez-Cornejo, 2004, USDA-ERS, The Seed Industry in the US.

Globally, Monsanto has its genetically modified seeds for corn, cotton, soybeans and canola on more than 90% of acreage that uses GMO seeds. By comparison, Syngenta is in 2nd place with about 4% of global biotech acreage using its seed.
Source: *Financial Times*, 11/16/2006.

Globally, four seed firms, DuPont (Pioneer), Monsanto, Syngenta and Limagrain have about 29% of the world market for commercial seeds.
Source: *Tracing the Trend Towards Market Concentration*. UN Conference on Trade and Development. 2006.

Global Phosphate, Nitrogen, Potash and Feed Phosphate Fertilizer Companies
1. Yara (6% of world's fertilizer market)*
2. Mosaic (Cargill owns 67% with ICM owning 33%)
3. Potash Corp

Source: * Dow Jones Commodities Service 2/14/07

U.S. Food Retailing CR5 = 48%*

	Historical CR5	
1997	2001	2004
24%	38%	46%

Supermarket	Sales in Thousands 2006	2005	2004	Change '04-'06
1)Wal-Mart	$ 98,745,400	$ 79,704,300	$66,465,100	48.57%
2)Kroger	$ 58,544,668	$ 54,161,588	$46,314,840	26.41%
3)Albertson's**	$ 36,287,940	$ 36,733,840	$31,961,800	13.54%
4)Safeway	$ 32,732,960	$ 29,359,408	$29,572,140	10.69%
5)Ahold	$ 23,848,240	$ 21,052,200	$25,105,600	-5.01%

Source: * *Progressive Grocer's Super 50* (5/1/05) *Progressive Grocer* reports only grocery sales from supermarkets and does not report general merchandise, drug or convenience sales. **Note the CR5 is from 2005, and has most likely grown larger given the rates of change from 2004 to 2005.** In February 2005, the top 50 supermarkets accounted for 82% of total supermarket sales nationally.
** Supervalu completed their acquisition of 60% of Albertsons in June 2006. The remaining 40% was sold to Cerebus Capital Management. **Supervalu is now the 3rd largest supermarket**. *Progressive Grocer* 2/1/07.

World's Top Grocery Retailers 2006

1.	Wal-Mart Stores (United States)	$312.4 billion annual sales
2.	Carrefour (France)	$ 92.6
3.	Tesco (United Kingdom)	$ 69.6
4.	Metro Group (Germany)	$ 69.3
5.	Kroger (United States)	$ 60.6
6.	Ahold (The Netherlands)	$ 55.3
7.	Costco (United States)	$ 52.9
8.	Rewe (Germany)	$ 51.8
9.	Schwarz Group (Germany)	$ 45.8
10.	Aldi (Germany)	$ 45.0

Source: *Supermarket News* 5/29/06

Top U.S. Food Processing Companies:

Company (Fiscal year in parentheses if different from calendar year)	2005 Food Sales ($ millions)	2002 Food Sales ($ millions)
1. Tyson Foods Inc. (10/1/05)	23,899	21,285
2. Kraft Foods Inc.	23,293	21,485
3 Pepsico Inc.	21,186	17,363
4. Nestle (US & Canada)	19,941	13,110
5. Anheuser-Busch Cos. Inc.	11,546	10,574
6. Dean Foods Co.	10,505	8,992
7. General Mills (5/28/06)	9,803	9,206
8. Smithfield Foods Inc. (4/30/06)	9,614	7,356
9. ConAgra Foods Inc. (5/28/05)	8,195	22,521
10. Swift & Company (5/29/05)	7,847	8,476

Source: Food Processing, Vol. 67(8):34-48, August 2006.