Hog Marketing Practices and Competition Questions

John D. Lawrence
Extension Livestock Economist
Iowa State University

Overview

- Recent history and trends
- Marketing methods and motivations
- Literature review
- Remaining questions

History

- In 1993, 87% of hogs were bought on the spot market.
- In 1994 there were approximately 200 buying stations and plants in Iowa.
- A representative producer had five or more different bids in a 50-mile radius.
- Avg. B&G slaughter was 1.65 M/week
- Carcass-merit pricing was new
- Backfat was 1.07” on a 179# carcass

Today

- Less than 10% of hogs are bought on the spot market
- There are fewer buying stations but independent buyers and commission firms still have a presence
- At least seven different packers buy hogs in Iowa each week
- Avg. B&G slaughter was 2.09 M/week
- Virtually all hogs are bought on merit
- Backfat is 0.75” on a 200# carcass

Percent of U.S. Hogs Sold Through Various Pricing Arrangements, January 1999-2009*

Year	99	00	01	02	03	04	05	06	07	08	09
Hog or meat market formula	44.2	47.2	54	44.5	41.4	41.4	39.9	41.8	38.3	37.1	41.2
Other market formula	3.4	8.5	5.7	11.8	5.7	7.2	10.3	8.8	8.5	11.0	7.9
Other purchase arrangement	14.4	16.9	22.8	8.6	19.2	20.6	15.4	16.6	15.2	13.4	11.6
Packer-sold				2.1	2.2	2.1	2.4	2.6	6.7	6.1	5.6
Packer-owned				16.4	18.1	17.1	21.4	20	22.7	23.1	25.7
Negotiated - spot	35.8	25.7	17.3	16.7	13.5	11.6	10.6	10.2	8.6	9.2	8.1

Source; Grimes and Plain, University of Missouri http://agebb.missouri.edu/mkt/vertstud09.htm

Mandatory Price Reporting Definitions

NEGOTIATED PURCHASES

Cash or spot market purchase of swine by a packer from a producer where there is an agreement on base price and a delivery day not more than 14 days after the date on which the livestock are committed to the packer.

OTHER MARKET FORMULA PURCHASES

T**he pricing mechanism is a formula price based on any market other than the market for swine, pork, or a pork product. It does include formulas based on futures or options contracts.**

SWINE OR PORK MARKET FORMULA PURCHASES

The formula price based on a market for swine, pork, or a pork product, other than any formula purchase with a floor, window, or ceiling price, or a futures or options contract for swine, pork, or pork product.

Mandatory Price Reporting Definitions

OTHER PURCHASE ARRANGEMENTS

This would include long term contract agreements, fixed price contracts, cost of production formulas, formula purchases with a floor, window, or ceiling price.

PACKER OWNED

Swine that a packer, including a subsidiary or affiliate of the packer, owns for at least 14 days immediately before slaughter.

PACKER SOLD

Swine that are owned by a packer, including a subsidiary or affiliate of the packer, for more than 14 days immediately before sale for slaughter; and sold for slaughter to another packer.

Motivations for Alternatives to Spot Survey responses

- Producers
  - Receive higher prices
  - Access to markets
  - Price risk management
  - Access to capital
- Packers
  - Secure higher quality hogs consistently
  - Food safety
  - Supply management and operational efficiency

Table 16a. Advantages and disadvantages of marketing contracts reported by producers with marketing contracts (6=very important, 1= not important at all).

Size class 1,000 Hd.	Access to capital	Increased price	Allowed for expansion	Allow to be in hog business	Locked out of higher prices	Reduced price risk	Not treated fairly by packer
1-2	2.25	3.75	2.14	2.91	2.19	3.14	1.84
2-3	2.85	3.71	2.18	2.90	2.30	3.67	1.77
3-5	2.76	3.89	2.11	2.95	2.53	3.61	2.18
5-10	3.46	4.13	2.96	3.47	2.57	4.29	2.20
10-50	3.35	3.85	2.73	3.55	2.51	3.50	2.06
1-50	3.00	3.90	2.47	3.18	2.45	3.73	2.04

Source: Lawrence and Grimes. Production and Marketing Characteristics of U.S. Pork Producers, 2000 http://www.econ.iastate.edu/faculty/lawrence/Acrobat/Staffppr343FNL.pdf

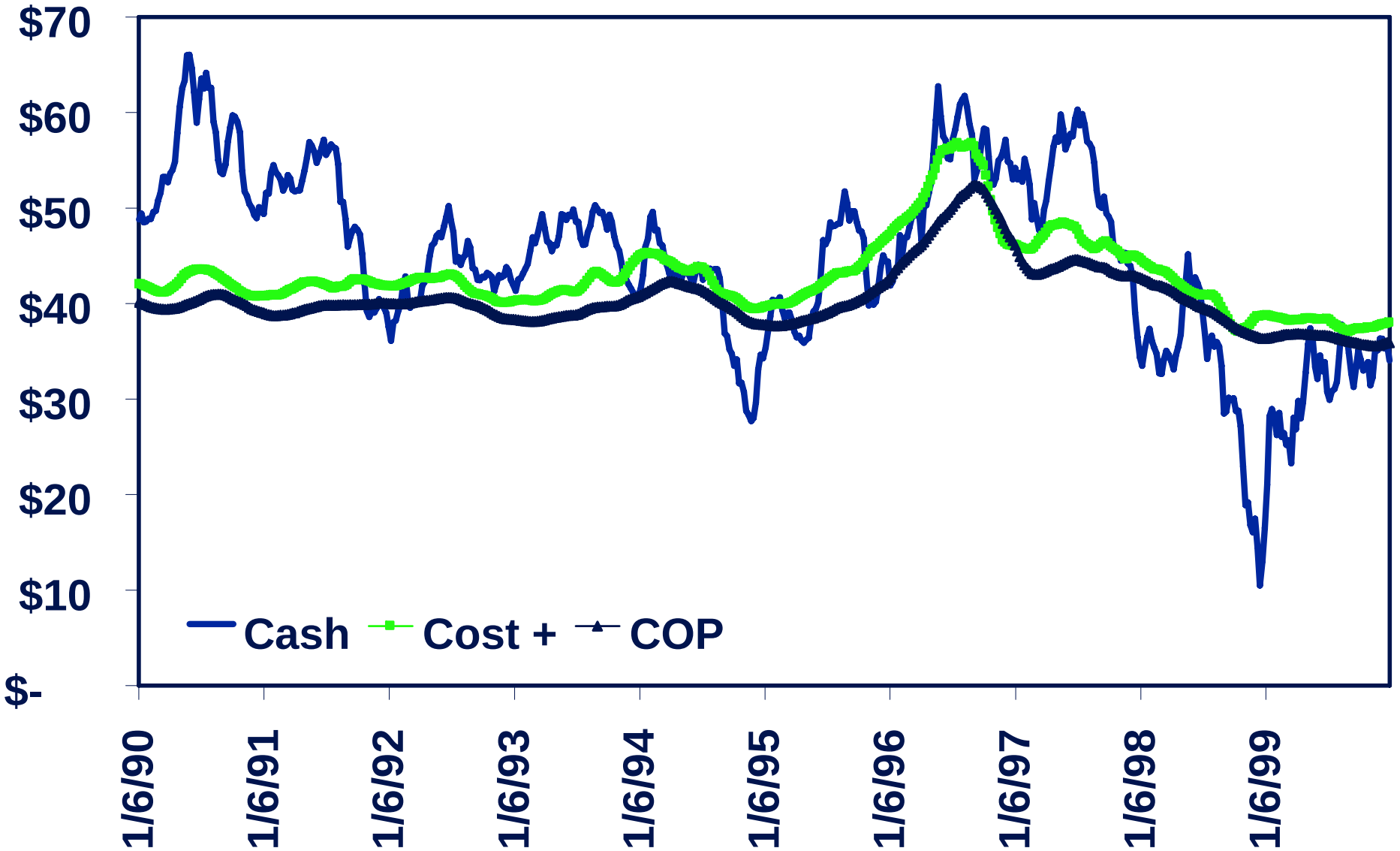
Table 2. Packer motivation for increased pork and beef marketing contracts, 1999.[a]

	Pork
Reduce plant operating costs by improving plant scheduling	3.5
Secure higher quality animals	4.0
Secure more consistent quality of animals	4.3
Assure food safety	3.8
Long run price risk management	3.0
Week-to-week supply/price management	3.5
Reduce costs of searching for animals to procure	3.5
Able to purchase animals for lower price	2.3

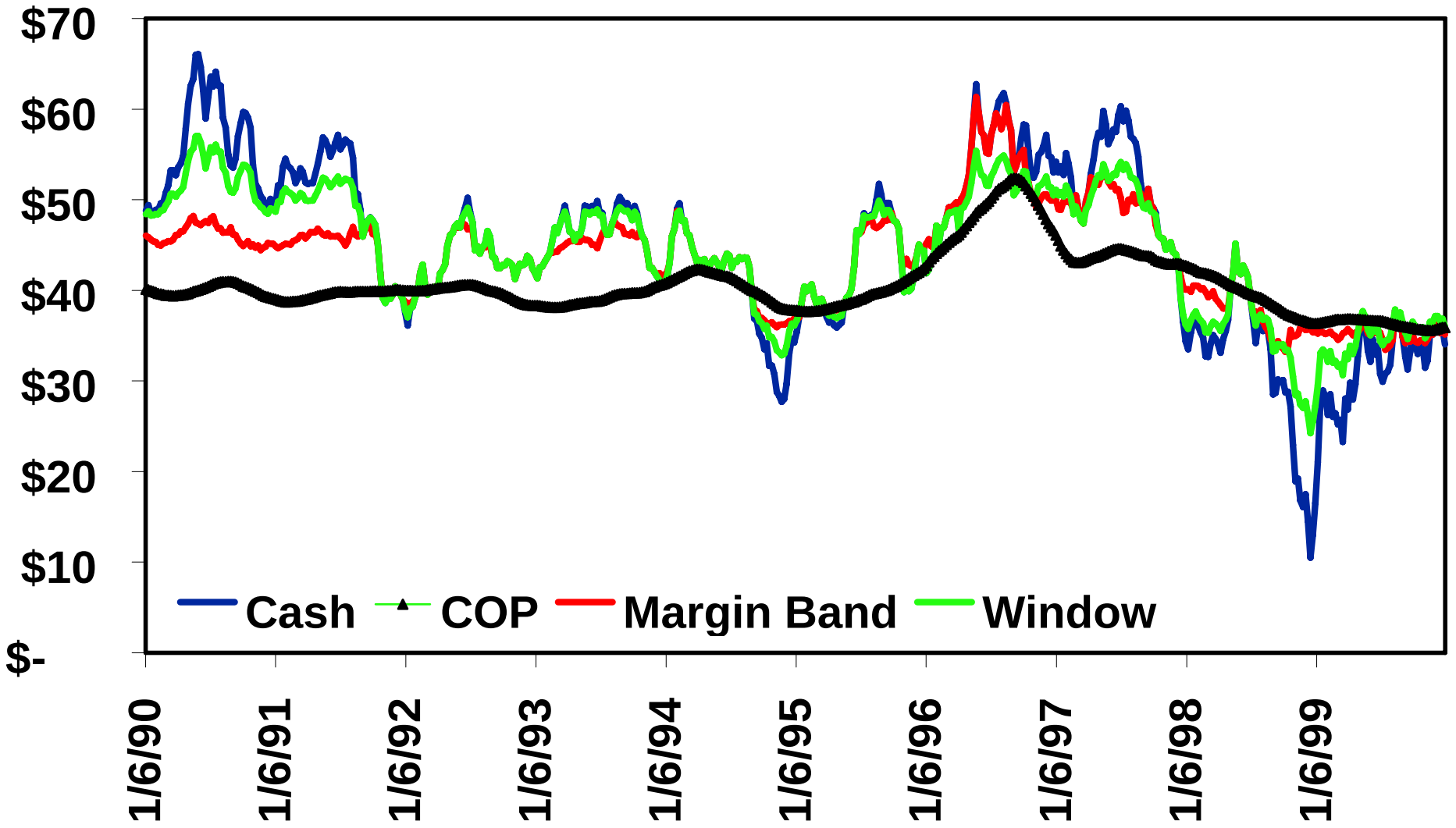
[a]Scale of 1 to 5, 1=not important to 5=very important

Source: Hayenga, et al (2000)

Weekly Hogs Prices, Cost of Production and Contract



Weekly Hogs Prices, Cost of Production and Contract



Hogs and Prices Differ

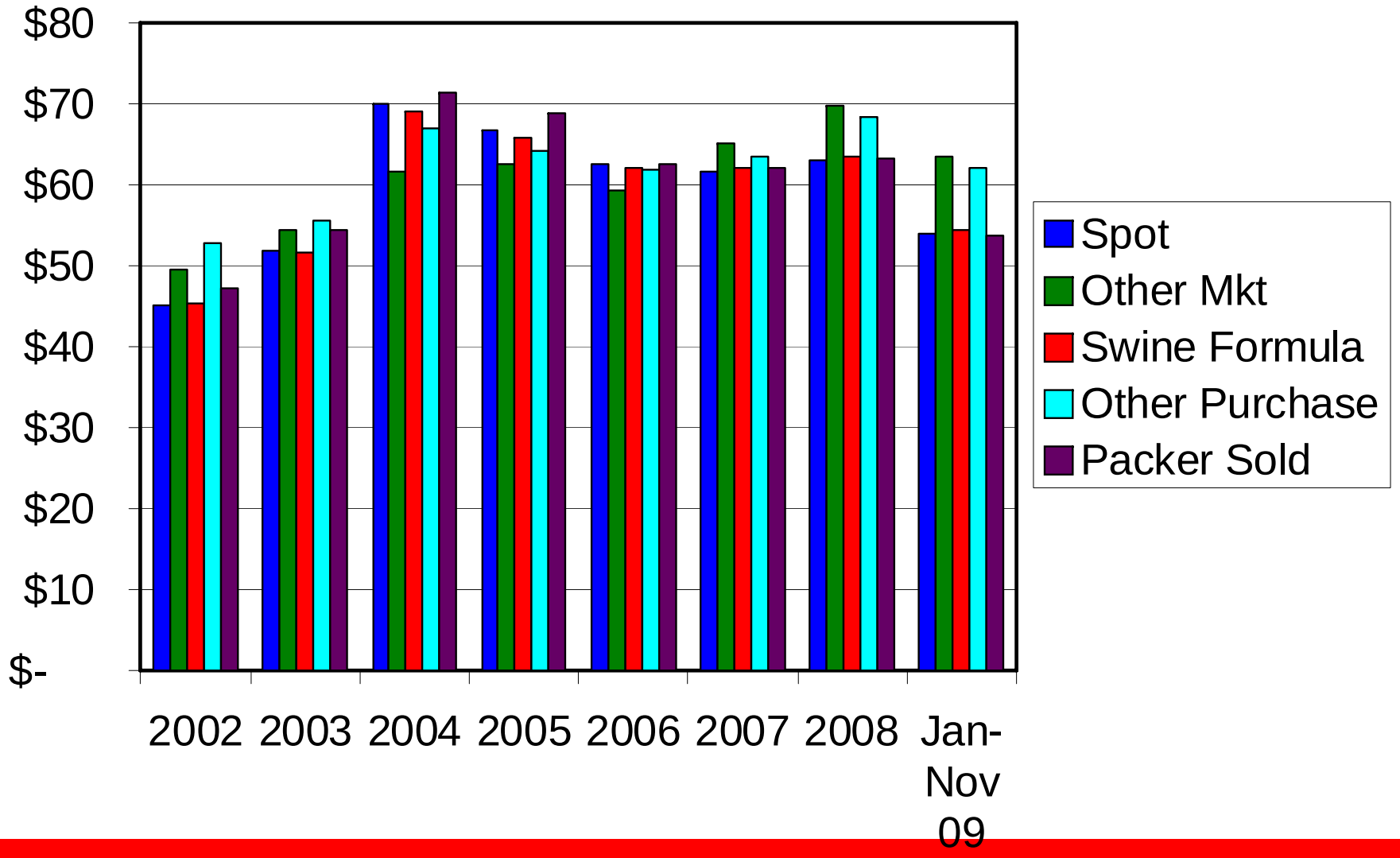
- USDA-AMS MPR reports volumes, carcass characteristics and prices by purchase method on prior day's slaughter
- http://www.ams.usda.gov/mnreports/lm_hg201.txt

NATIONAL DAILY DIRECT HOG PRIOR DAY REPORT - SLAUGHTERED SWINE

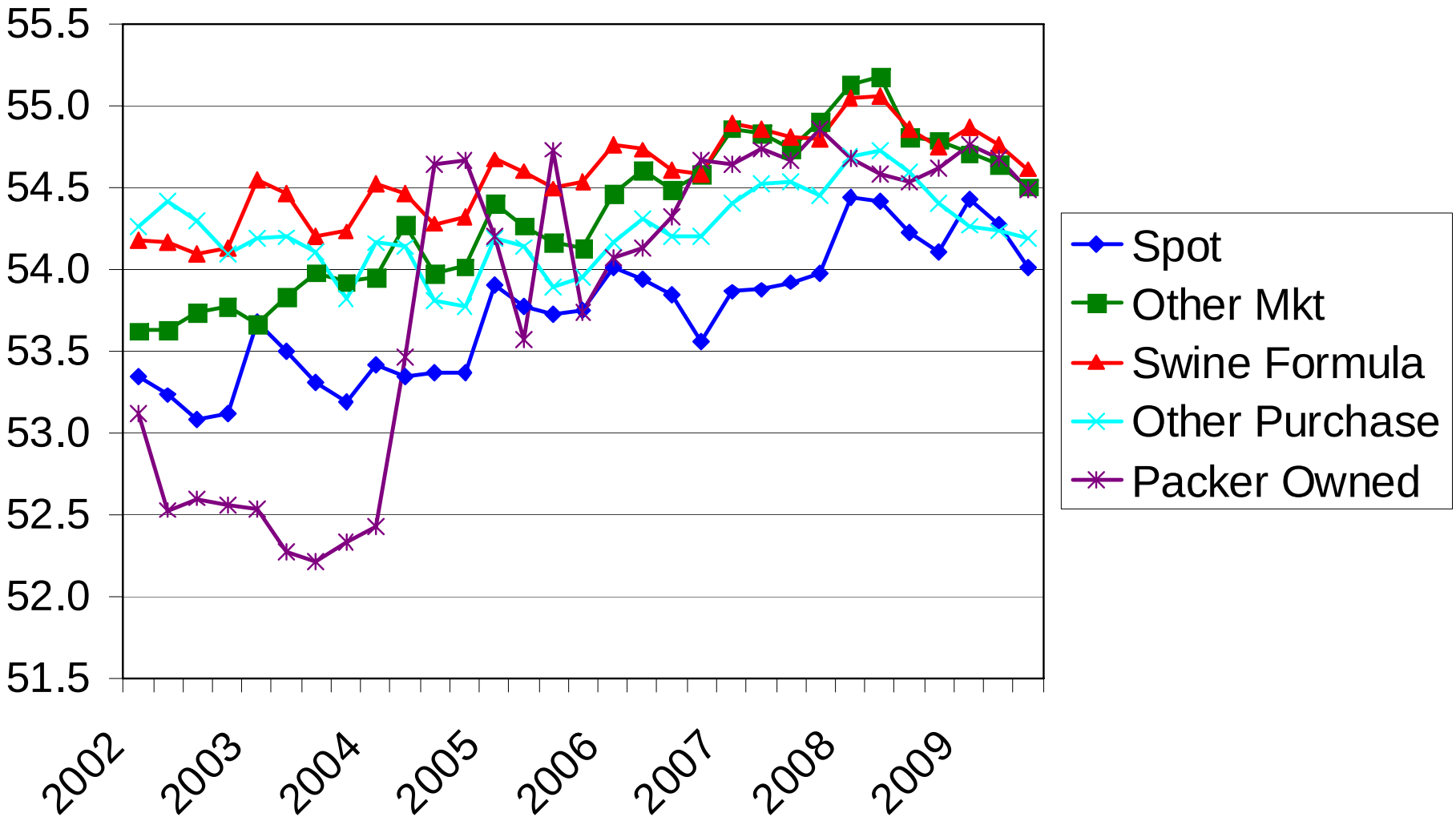
Slaughter Data for Thursday, December 3, 2009

Producer Sold:	NEGOTIATED	OTHER MARKET FORMULA	SWINE OR PORK MARKET FORMULA	OTHER PURCHASE ARRGMENT	TOTALS/ WTD AVG
HEAD COUNT	22,845	37,195	168,988	46,275	275,303
CARCASS BASE PRICE	57.06	51.70	57.61	61.86	57.50
AVERAGE NET PRICE	58.57	54.35	59.62	63.56	59.48
LOWEST NET LOT	35.19	39.54	43.48	53.65	46.11
HIGHEST NET LOT	63.05	71.06	64.50	73.55	67.95
AVERAGE LIVE WT	258.67	272	271.16	266.2	269.6
AVERAGE CARCASS WT	195.03	204.01	204.09	201.43	202.9
AVERAGE SORT LOSS	-1.13	-1.38	-1.22	-0.88	-1.18
AVERAGE BACKFAT	0.74	0.72	0.75	0.74	0.74
AVERAGE LOIN DEPTH	2.30	2.49	2.51	2.30	2.45
LOINEYE AREA	6.91	7.48	7.55	6.91	7.38
AVERAGE LEAN %	53.83	54.52	54.60	54.18	54.45

Lean Hog Prices by Purchase Method and Year



Percent Lean of Pork Carcass by Purchase Method and Quarter



Recent Research

- Relatively little addressing issues of competition
- GIPSA Livestock and Meat Marketing Study
  - Volume 4
- Impact of contracts on cash
  - Wang and Jaenicke
  - Roberts and Key
  - Carstensen
- Contract preferences and motivation
  - Roe, Sporleder and Belleville
  - Lawrence, Schroeder and Hayenga
- Contracting and agriculture
  - MacDonald, Key and others

Wang and Jaenicke

- Simulating the Impacts of Contract Supplies in a Spot Market–Contract Market Equilibrium Setting
- Acknowledge limitations of their model
- Results are inconclusive
  - For formula-price contracts increased contract supplies are negatively related to the expected spot market price when participating producers contract high proportions (greater than 0.8) of their hogs, but are positively related when producers contract lower proportions (between 0.6 and 0.8).
  - Moreover, increased contract supplies reduce the variance of spot market price under formula-price contracts.

Wang and Jaenicke

- Formula-price contract offers the highest expected profit to processors and highest expected utility to producers
- Because of uncertainty on processing demand, the cash market remains valuable to processors
- Important linkage between the contract market and the cash market could, of course, disappear if real-world cash markets become too thin and disappear altogether.

LMMS Volume 4

- A few highlights
  - Substantial differences in daily hog prices paid by packers on a carcass weight basis.
  - On average plants that use a combination of marketing arrangements pay lower prices than plants that use the cash/spot market only.
  - Found a *statistically significant presence of market power* in live hog procurement. However, the results regarding the significance of AMA use for procurement of live hogs in explaining the *sources of that market power are inconclusive.*

LMMS Volume 4

- A clarification: they report
  - a 1% increase in contract hog quantities causes the spot market price to decrease by 0.88%
  - a 1% increase in packer-owned hog quantities causes the spot market price to decrease by 0.28%.
- What is missed is that
  - a 1% increase in the supply of spot market hogs is associated with a 0.27% decrease in cash market price
- Watch the math! Consider 100 million hogs
  - 61 contract, 31 packer-owned and 8 spot-market
  - 1% contract or PO is 7.6% and 3.9% of spot market

Percentage changes in hog prices from a complete ban on packer owned hog production

Variable	Percentage Changes in Prices	Percentage Changes in Quantities
Short-Run		
Negotiated	-6.64	133.1
Contract	-2.41	-1.1
Packer owned	-4.76	-100
Long-Run		
Negotiated	-3.70	125.1
Contract	-0.75	-1.8
Packer owned	-2.82	-100.0

Source: LMMS Volume 4 Tables 6-10 and 6-12

LMMS Volume 4

- **Bottom line**

  In analyzing the economic effects of *hypothetical restrictions on the use of AMAs* in the hog and pork industries, we found that *hog producers would lose* because of the offsetting effects of hogs diverted from AMAs to the spot market, *consumers would lose* as wholesale and retail pork prices rise, and *packers would gain in the short run but neither gain nor lose in the long run*.

Summary

- Spot market has declined
  - 87% in 1993, 36% in 1999, 8% in 2009
- Over 50% of hogs priced off of spot market
- Packer ownership has grown to over 30%
- Limited economic research on hogs
- Results are inconclusive to positive for use of alternative marketing arrangements

Remaining Questions

- What are the necessary conditions for a viable spot market?
- Do lessons learned in cattle apply to hogs?
- What trade-offs are necessary or acceptable?
  - Quality? Efficiency?
- What is the source of market power and what is the cost of controlling it?
- What is the risk?
  - Niche markets and branded products
  - Asset values and loans contingent on contracts