USDA Agricultural Outlook Forum -- 2013

A Tragedy of the Commons – How Do We Proceed Without a Spot Market?

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The price/value information system for pigs

- Governed by the Livestock Mand-atory Reporting Act of 1999
  - VERY prescriptive law – little or no trust in the people in power at USDA at the time
  - Negotiated by producers and packers at the insistence of Congress – which wanted no part of the actual writing of the legislation
  - Driven by:
    - » The hog price debacle of 1998
    - » A deep suspicion that "Someone is getting a better deal than me!"

Key aspects of the LMRA for pigs

- Large packers required to report
  - Plants >100,000/yr for market hogs
  - Companies >200,000/yr for sows/boars
- Specific pricing mechanisms <u>in the law</u>
  - Negotiated
  - Swine/Pork Formula
  - Other Market Formula – futures-based prices
  - Other Purchase Arrangements – ledger contracts, feed- and cost-based prices
- Wholesale pork was NOT included

Source of various prices

- Other Purchase Arrangements is a mixed bag – as it was intended
  - Feed/cost formulas are not driven by hogs
  - Ledgers may be but are a MUCH smaller part of the total now
- Other Market Formula
  - Price (at least the base) is set some time (up to 14 mos.) before the hogs are delivered
  - Price is reported and published WHEN the hogs are delivered – Not a function of current supply/demand

Sources of prices -- continued

- Swine/Pork Formulas – driven by prices of either hogs or wholesale pork
  - Hogs – Negotiated prices in regions or nation
  - Pork – Estimated USDA cutout value
- Negotiated – buyer-seller interaction and agreement on a price and a delivery day
  - Must have both
  - Cannot be an “overage” negotiation relative to the market – that’s a formula

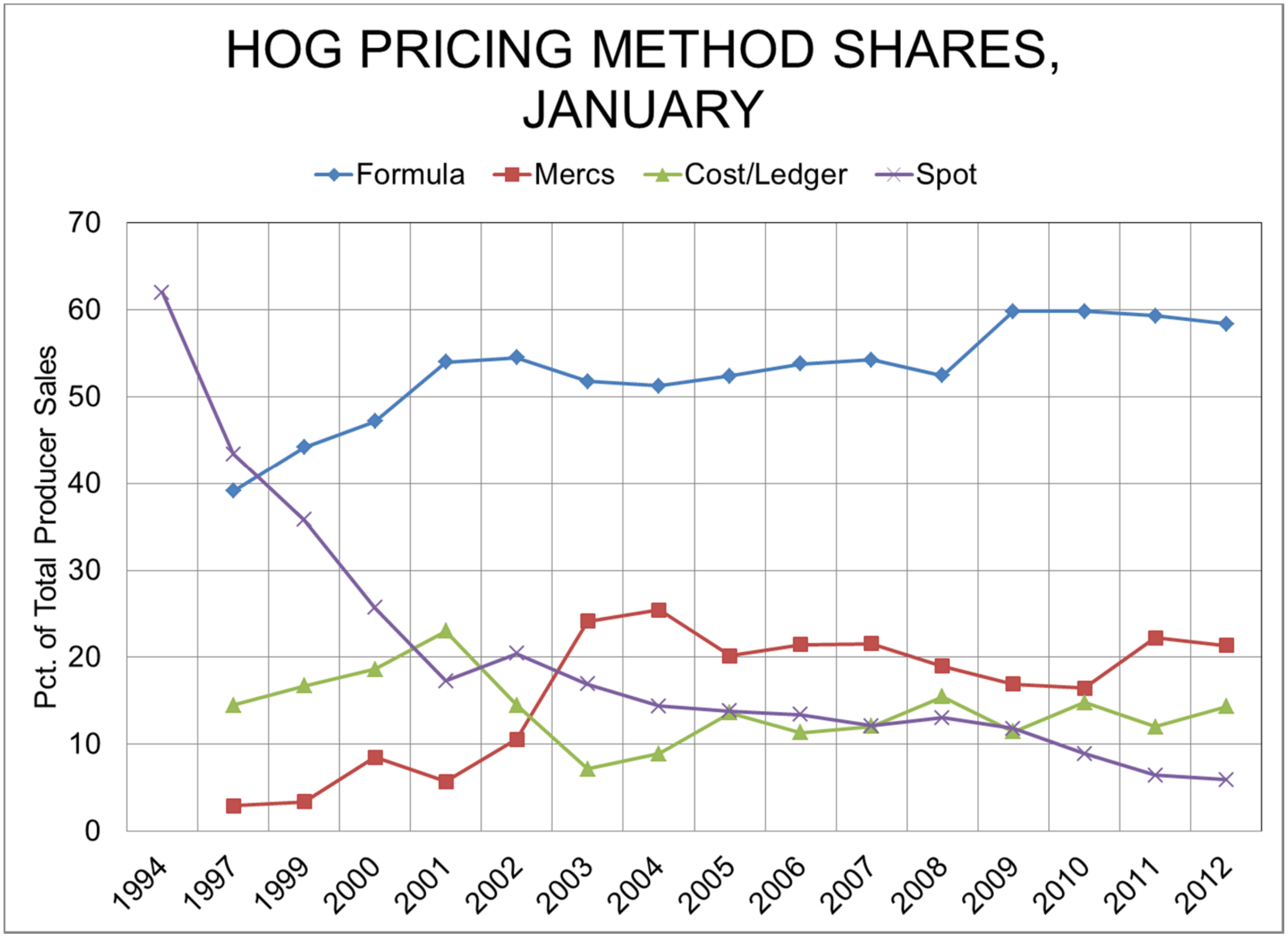
Pre-MPR: Negotiated share was falling fast!

- 1994 and 1997: Mizzou structure studies
- 1999-2001: January packer surveys

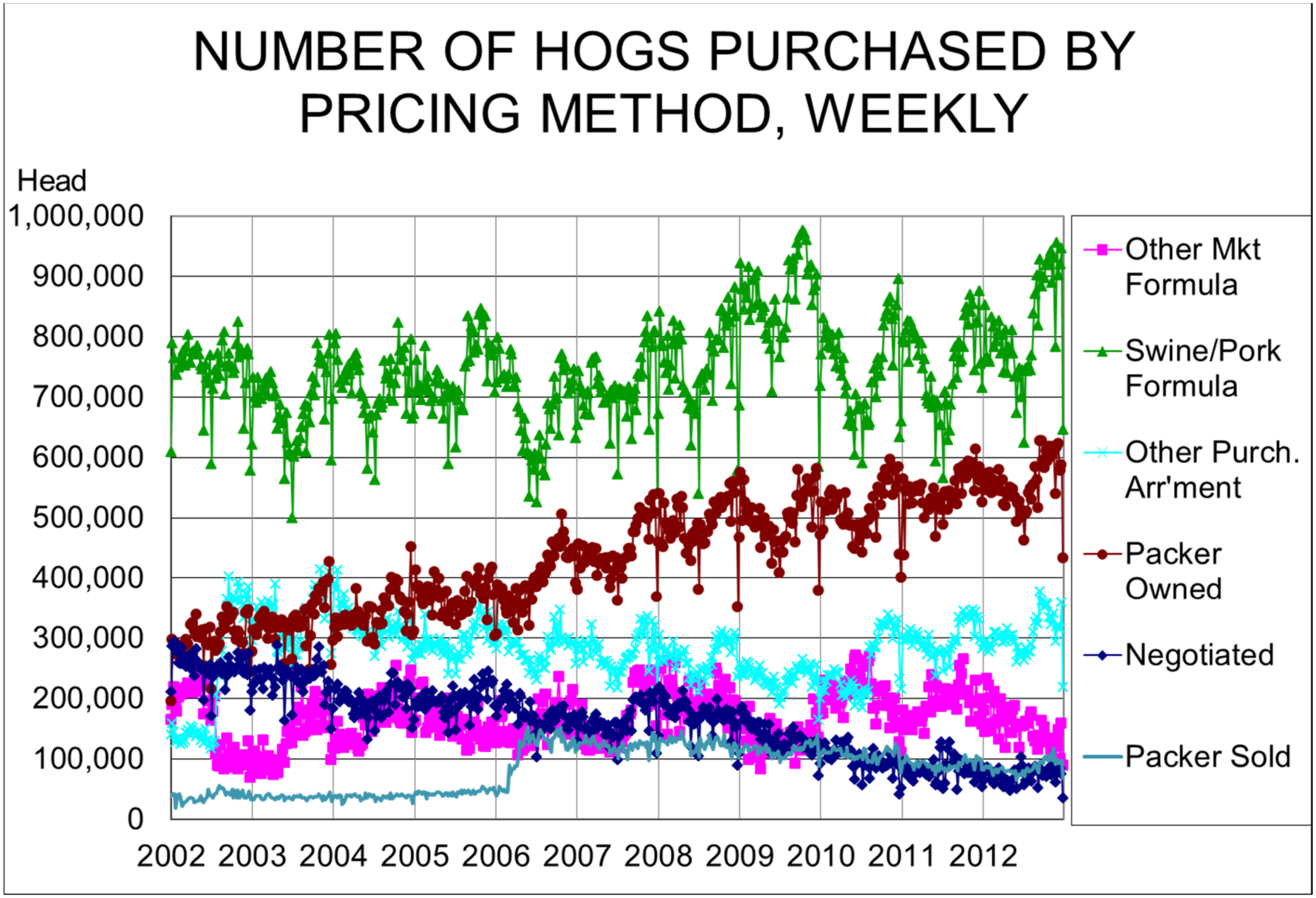
	1994	1997	1999	2000	2001
Formula		39.1	44.2	47.2	54
Mercs		2.9	3.4	8.5	5.7
Cost-Plus, No Ledger		5.3	2.9	3.3	6.4
Cost-Plus, Ledger			6.9	9	9.8
Window, No Ledger		3.1	3.6	3.8	4.6
Window, Ledger			1	0.8	2
Other		6.1	2.3	1.7	0.2
Spot	62	43.4	35.8	25.7	17.3

Comparing January of each year . . .

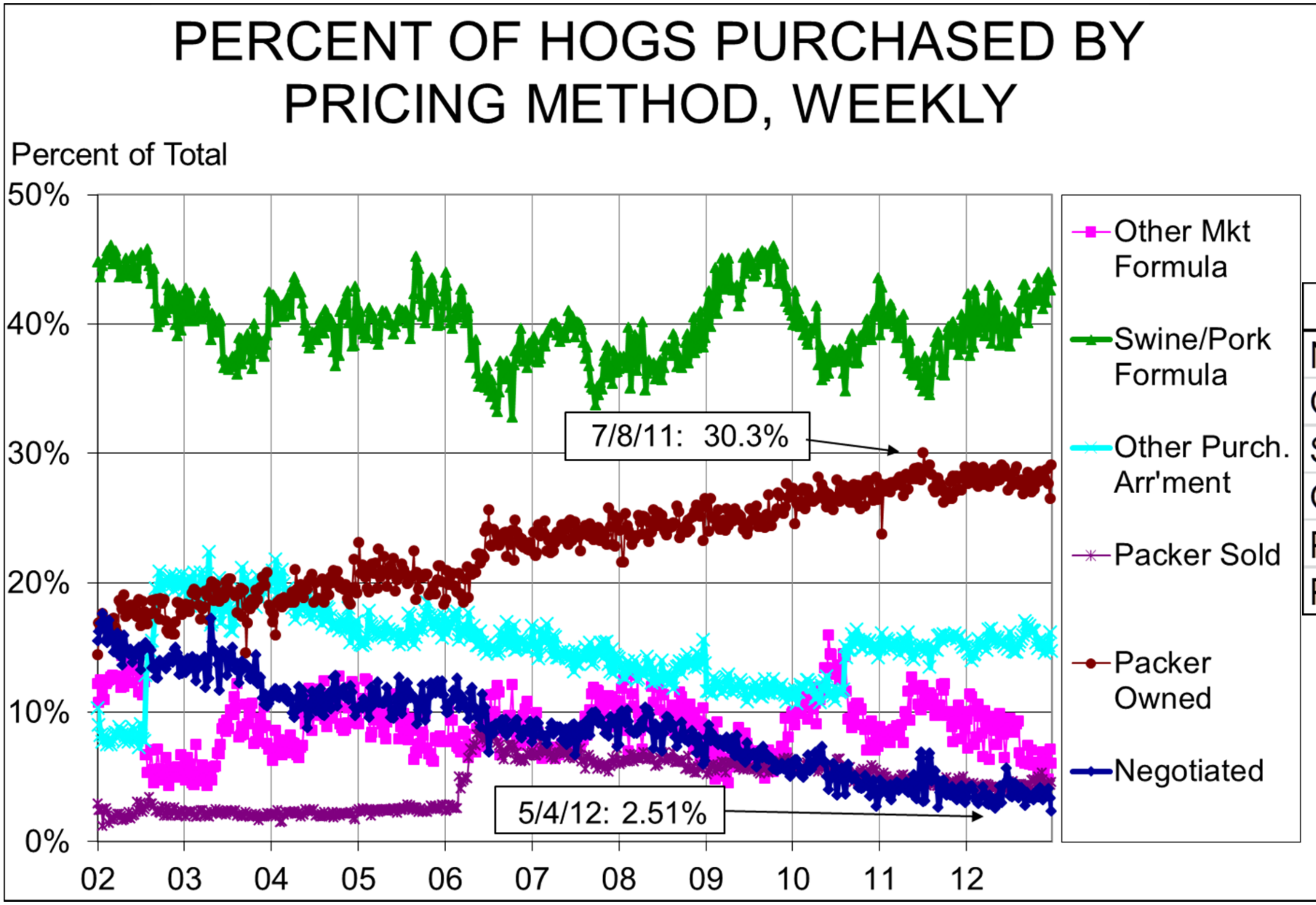
. . . Spot/Neg is replaced by SPMF and OMF



Number of hogs by pricing method -- MPR



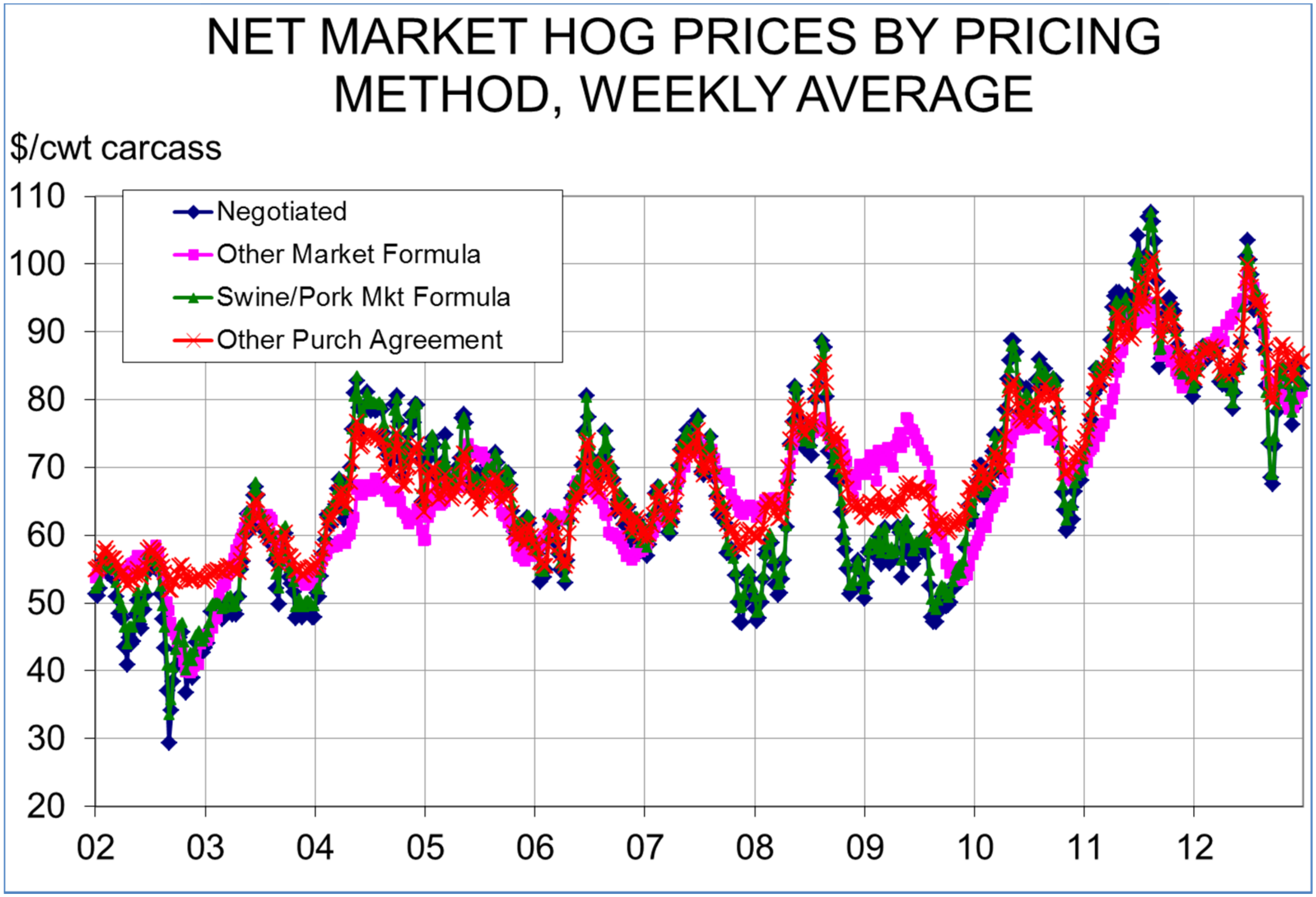
Percentage of hogs by pricing method - MPR



2012 Shares	
Neg	3.6%
OMF	7.8%
SPMF	40.9%
OPA	15.4%
P-Sold	4.3%
P-Own	28.0%

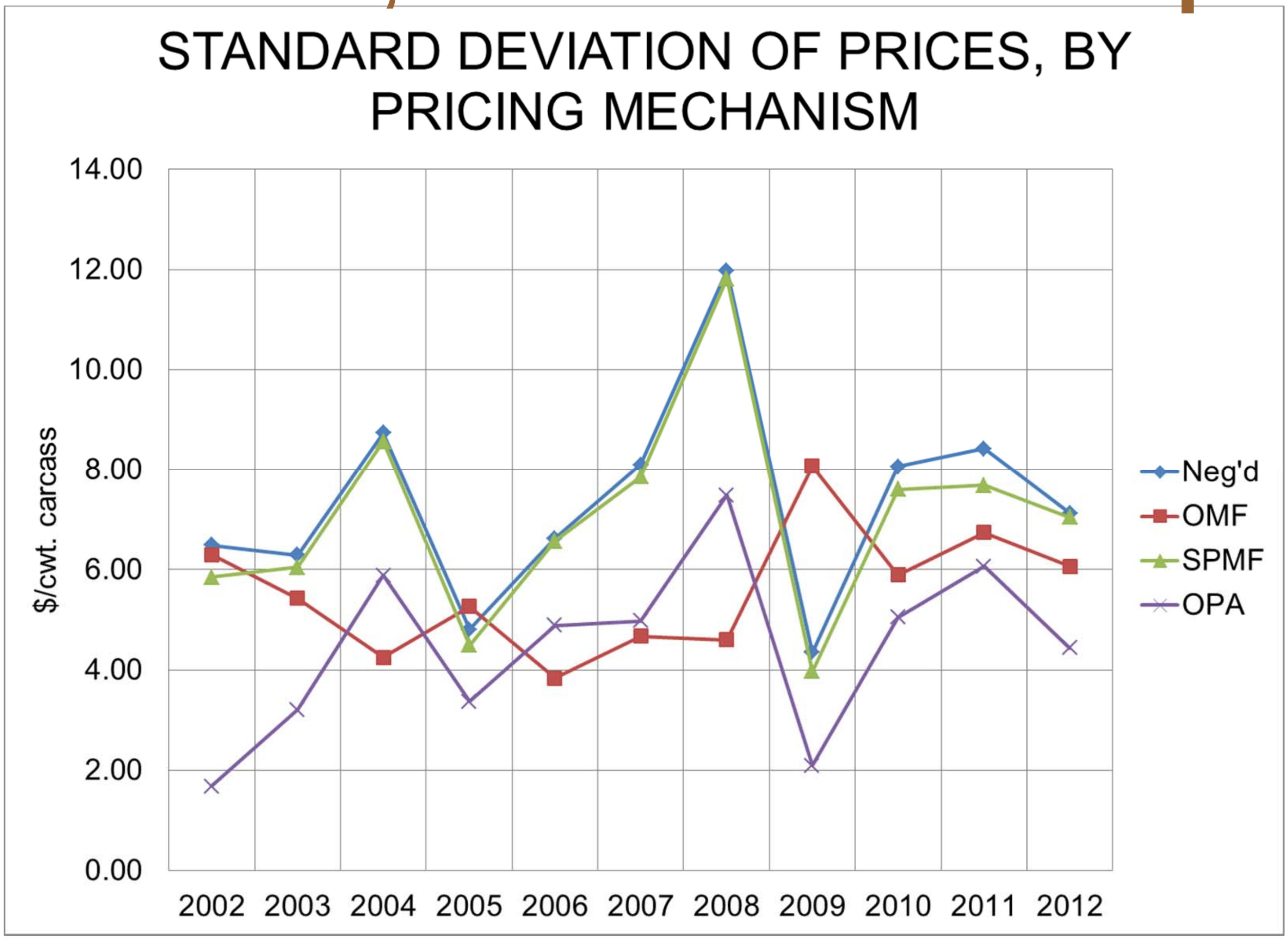
Prices paid by pricing method . . .

. . . The relationships are very logical



Variation is logical – SPMF is same as Neg'd

. . OMF is lower, OPA is lower -- same pattern?



Many factors to think about?

- Volatility is perceived to be higher – but is it? Or is it just a function of larger number for hog price today?
- Producers/packers have not moved away from formula pricing as spot has thinned
  - Expectation was that lack of comfort and/or confidence in spot would cause producers to formula price less, negotiate more
  - Continued decline – confidence/comfort or the lack of any good alternative?

Why has the negotiated portion fallen so?

- Very few hog producers EVER negotiated
  - Terminal markets – commission agents
  - Buying stations – bid comparisons relative to transport costs/time
  - Direct delivery – much the same as stations
- Not everyone – and perhaps very few – can do it well enough to make it pay
  - Personality
  - Skills
  - TIME – or willingness to devote it!

The nature of price information

- Publicly disseminated
  - MPR forces all data in to USDA
  - Publication makes it available to all – non excludability of a public good
  - Using the published information does not make it less available to others – non-rivalrous consumption of a public good
- BUT THE DATA ARE NOT PRODUCED BY THE GOVERNMENT – they are produced by individual business decisions

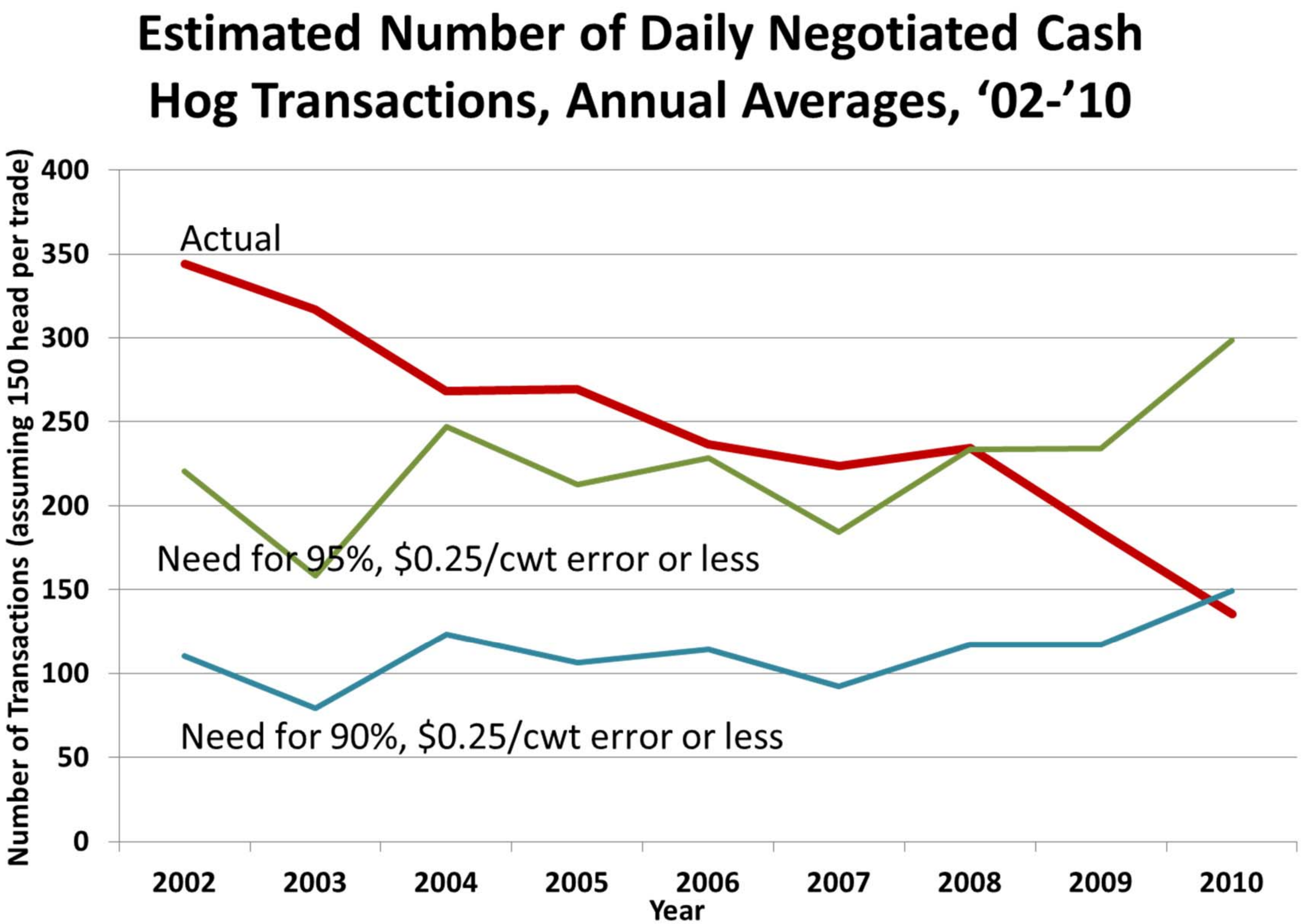
A strange public goods situation . . .

- These are private goods in production and public goods in usage – BIG PROBLEM
- Producers of the goods:
  - Are not compensated for the data – but believe they get more for their hogs
  - Cannot exclude others from using them
- Users of the goods:
  - Do not have to pay for them
  - Clearly benefit from not having to discover prices

The net result is a shortage – no surprise

- The amount of information from negotiated purchases is perceived to be too little
- The amount of information used by others is too large
- The result is a THIN MARKET
  - No longer large enough to result in reasonable accuracy with reasonable probability

From Schroeder – Chebychev's Inequality



Source: Own calcuation from USDA head counts

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- The amount of information from negotiated purchases is perceived to be too little
- The amount of information used by others is too large
- The result is a THIN MARKET
  - No longer large enough to result in reasonable accuracy with reasonable probability
  - Could result in a price discovery failure
  - Far more prone to manipulation – or just bad luck from a spot market S/D mismatch

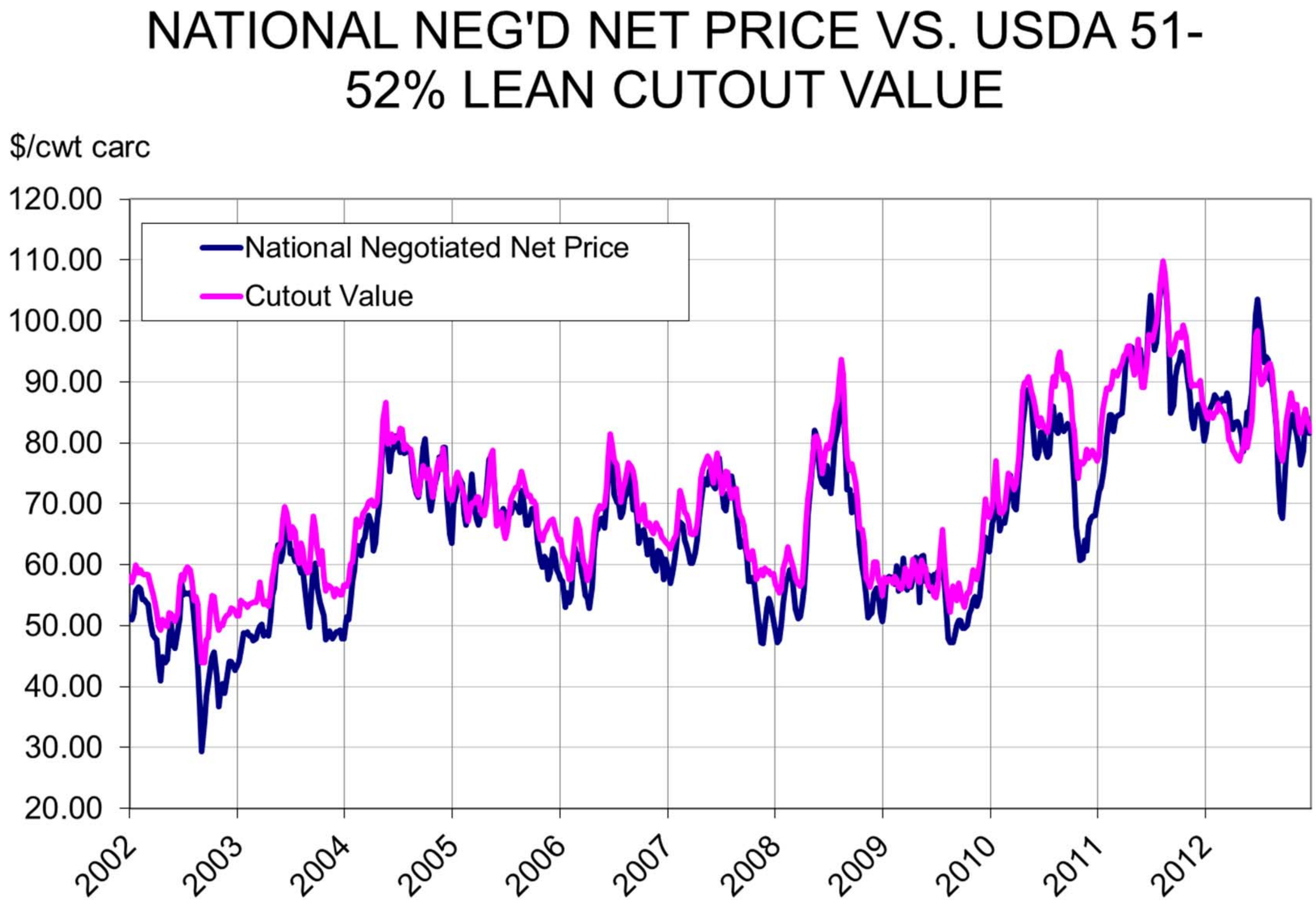
How do we solve the "problem"?

- Leave it alone and allow participants to use the methods they trust
  - Used so far and we have had few problems
  - Does not <u>prevent</u> problems (inaccuracy, manipulation) – only solves them *ex ante*.
- Force a minimum share for spot market
  - Clearly inefficient – or participants would do it
  - Distributional impacts – who loses contracts?
  - How does USDA police it with fewer resources?

How do we solve the “problem”?

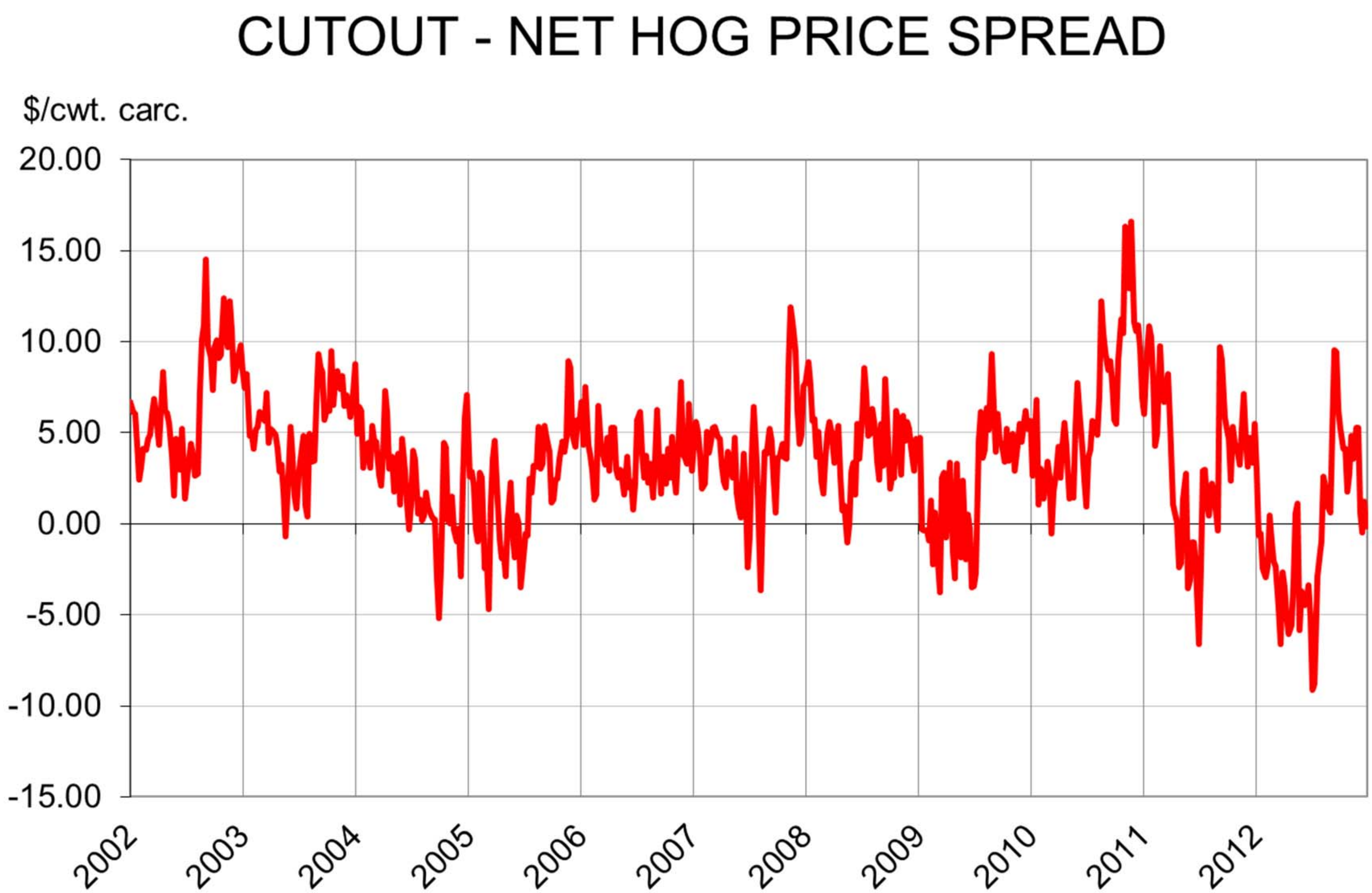
- Use another price that is correlated or fair
  - USDA cutout has been used more and more but share is not known – Swine/Pork Formula

Highly correlated to net hog price – 0.969 . . .



But the spread – adjustment – has changed

. . . And become much more volatile



Note SD values vs. Coef. Of Variation . . .

. . . And the BIG jump in spread volatility

HOG PRICE, CUTOUT VALUE & SPREAD STATISTICS				
		Mean	Std Dev	Coef of Var
Neg'd Hogs	'02-'09	61.00	10.62	0.17
	'10-'12	83.58	10.04	0.12
All Hogs	'02-'09	62.22	8.84	0.14
	'10-'12	83.34	8.99	0.11
Cutout	'02-'09	64.78	9.06	0.14
	'10-'12	86.68	8.10	0.09
Neg'd Spread	'02-'09	3.78	3.07	0.81
	'10-'12	3.10	4.98	1.61

How do we solve the “problem”?

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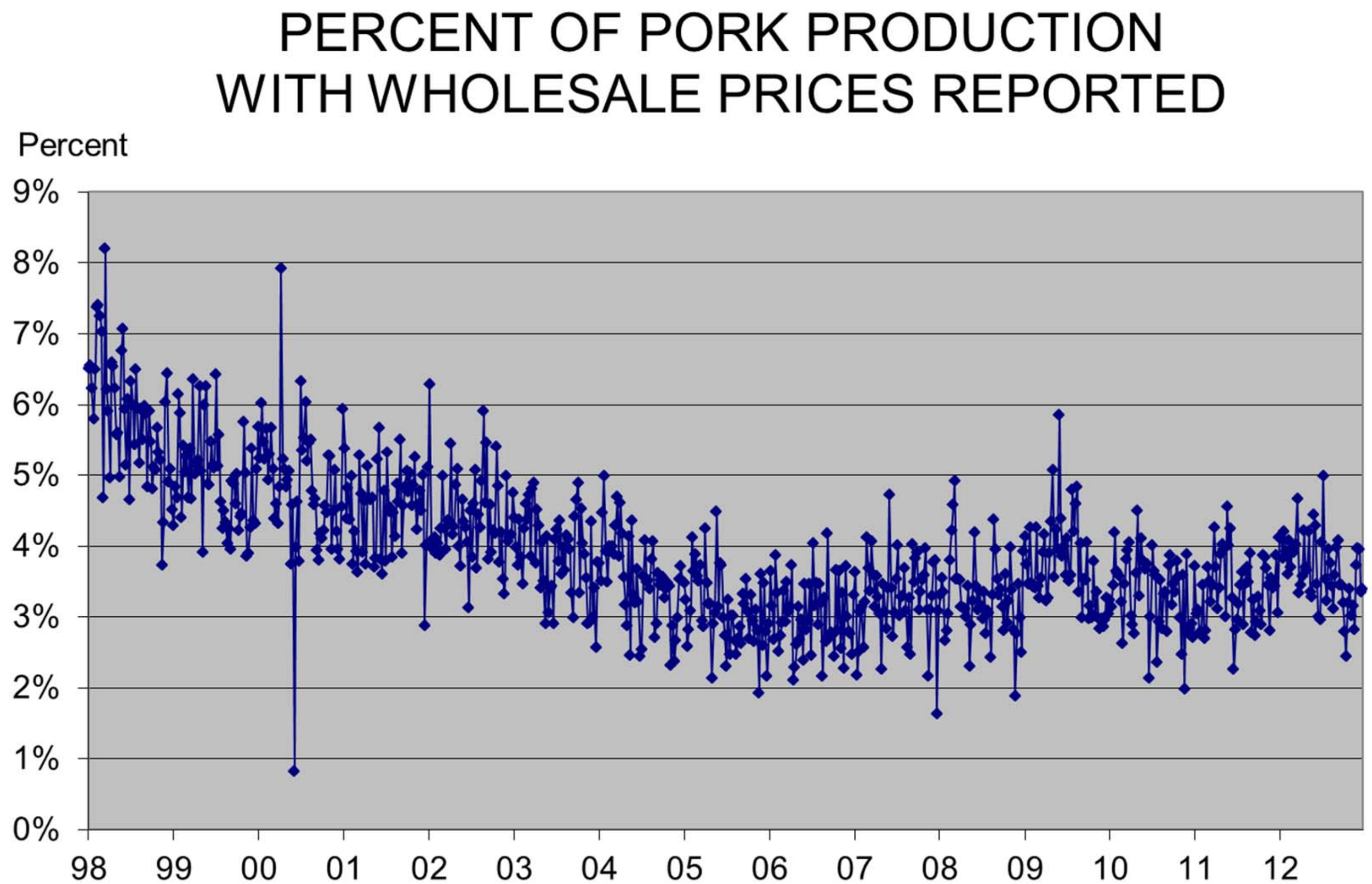
  - Cutout value has historically been based on even thinner market and thinner data than negotiated hogs

Voluntary pork has stabilized at ~3.5%

. . . Thinness was a major driver for pork MPR



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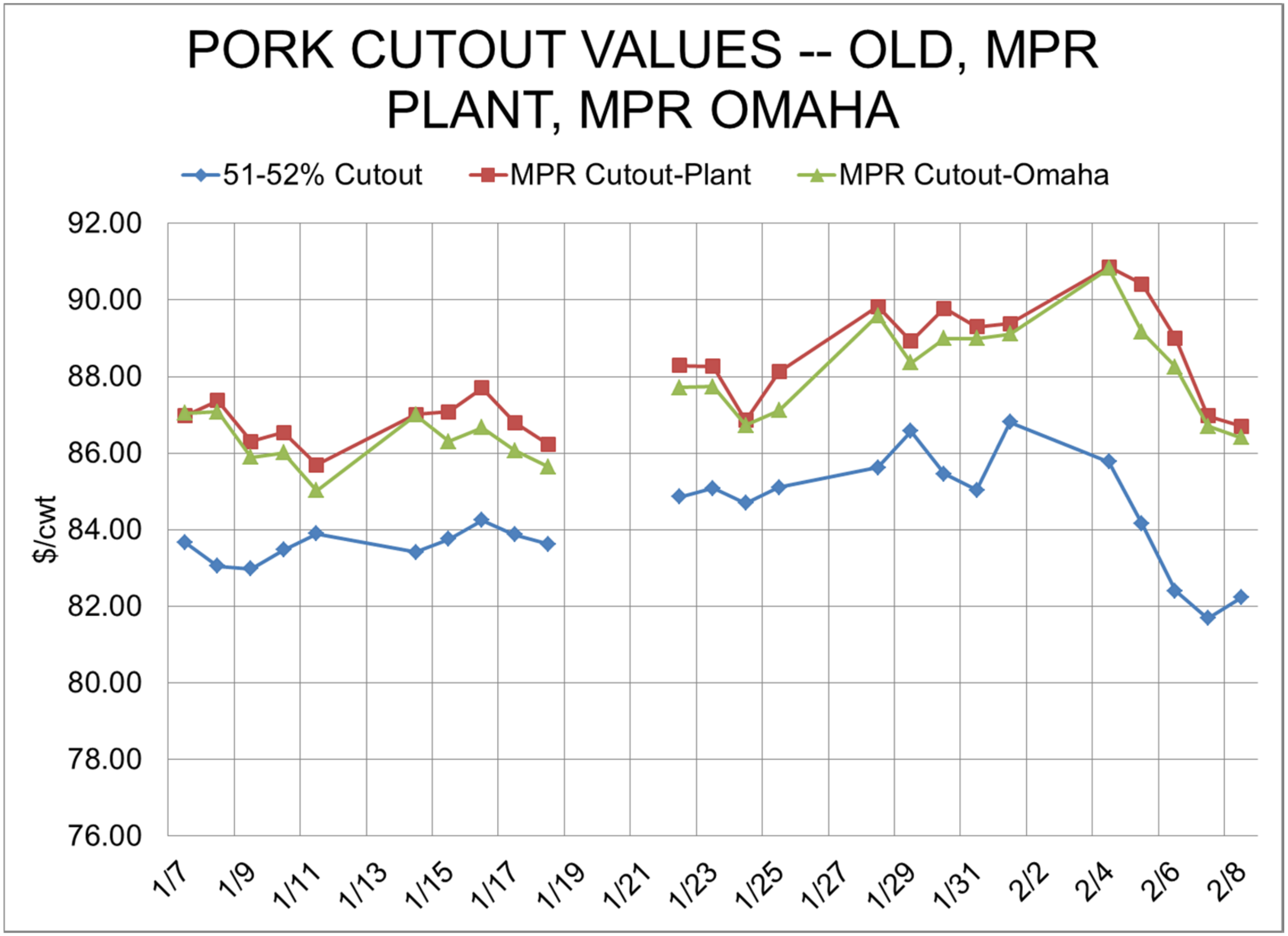
  - SOLUTION: MPR for wholesale pork
    - » Full participation, all of TRADED cuts reported
    - » Packers and their customers supported this
    - » Long-term: High quality data = more formulas, fewer negotiations

MPR cutouts are sharply higher so far . . .

. . . New yields, all cuts, all firms



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From information, knowledge

How do we solve the “problem”?

- Price based on costs and value
  - MANY businesses base long-term pricing arrangements off costs plus “normal” profit
  - Or negotiate “value” above costs
  - Negotiate periodically -- not daily
    - » This is what many hog producers do now – their negotiation is for an overage vs. spot
    - » Happens once per year or three or five
  - Not unusual in ag – wine grapes, tomatoes
  - Bad cost-based contracts in ‘90s and ‘00s

How do we solve the “problem”?

- Charge data users and compensate data producers
  - Incentivizes data production -- negotiation
  - Discourages data use without production
  - Most efficient, economically
  - Optimal level of negotiation/data production?
  - Mechanism – similar to checkoff?
  - Proper rate? – Change it until a “satisfactory” level of data generation is reached?
  - CANNOT CALL IT A TAX!!!

How do we solve the “problem”?

- Do away with publishing the data
  - Privatize or allow only those that generate information to see the data
  - NOT just those that “report” – they must do something to discover a price
  - Modern information systems make this viable
  - What about the small guy?
  - Bigger issue is internet access and cost
  - Still need a data gathering and synthesis system

Summary

- Prices for fewer and fewer hogs are being negotiated
- Number of trades are now low enough to question accuracy and acceptable prob's
- Producers have a great deal of control over the level of negotiations but are collectively letting it fall
- There are alternatives for establishing value – some good, some bad

QUESTIONS & DISCUSSION?