



**WELLS
FARGO**

Trend v. Cycle

Making Profits in Agriculture

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Wells Fargo

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Everything is connected.

We just don't see how.

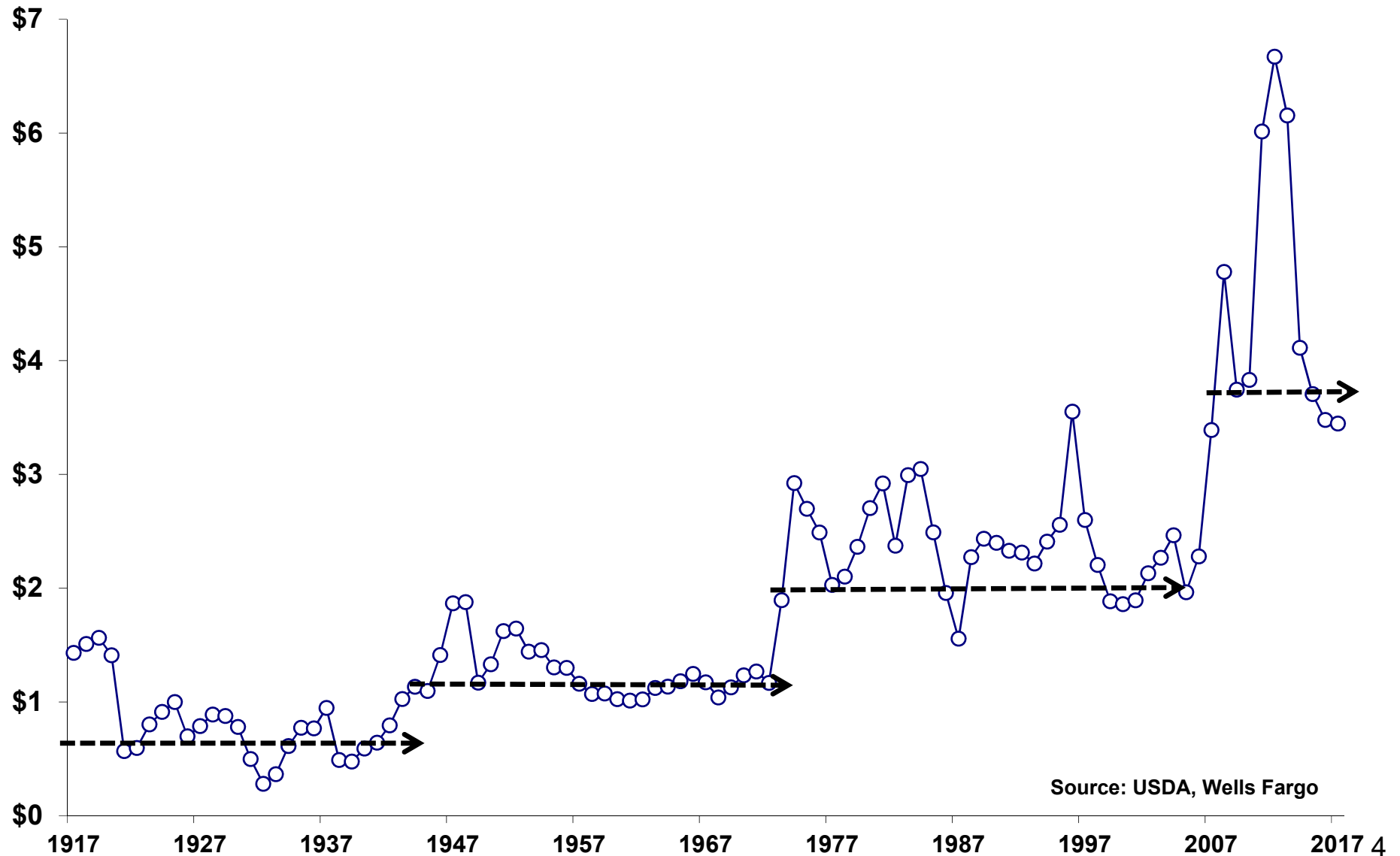
**Connection corollary:
Nothing natural moves in
a straight line.**

**Yield growth exceeds
population growth.**

Expect flat agricultural prices.

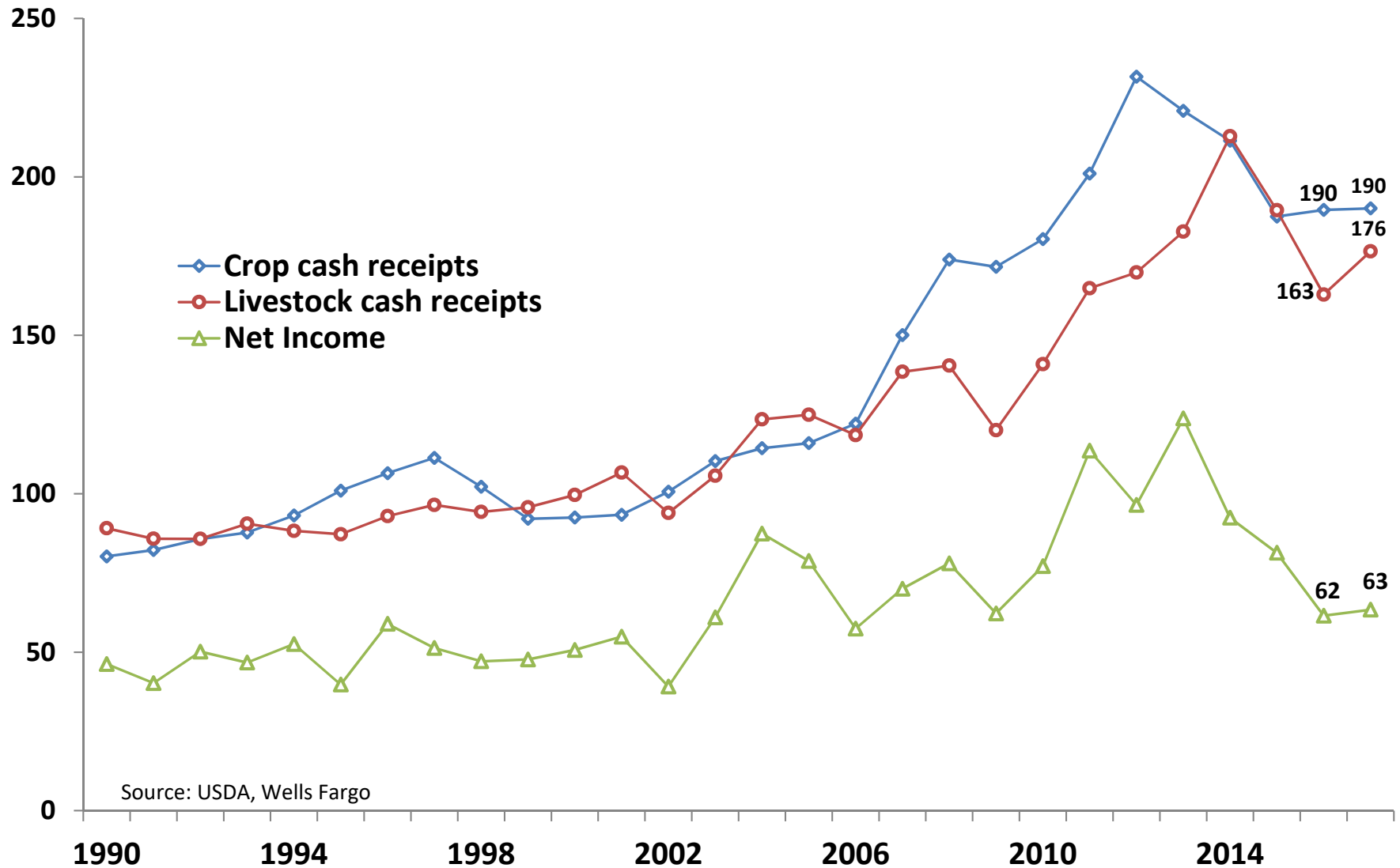
Why do commodity prices move like this?

Annual Corn Prices



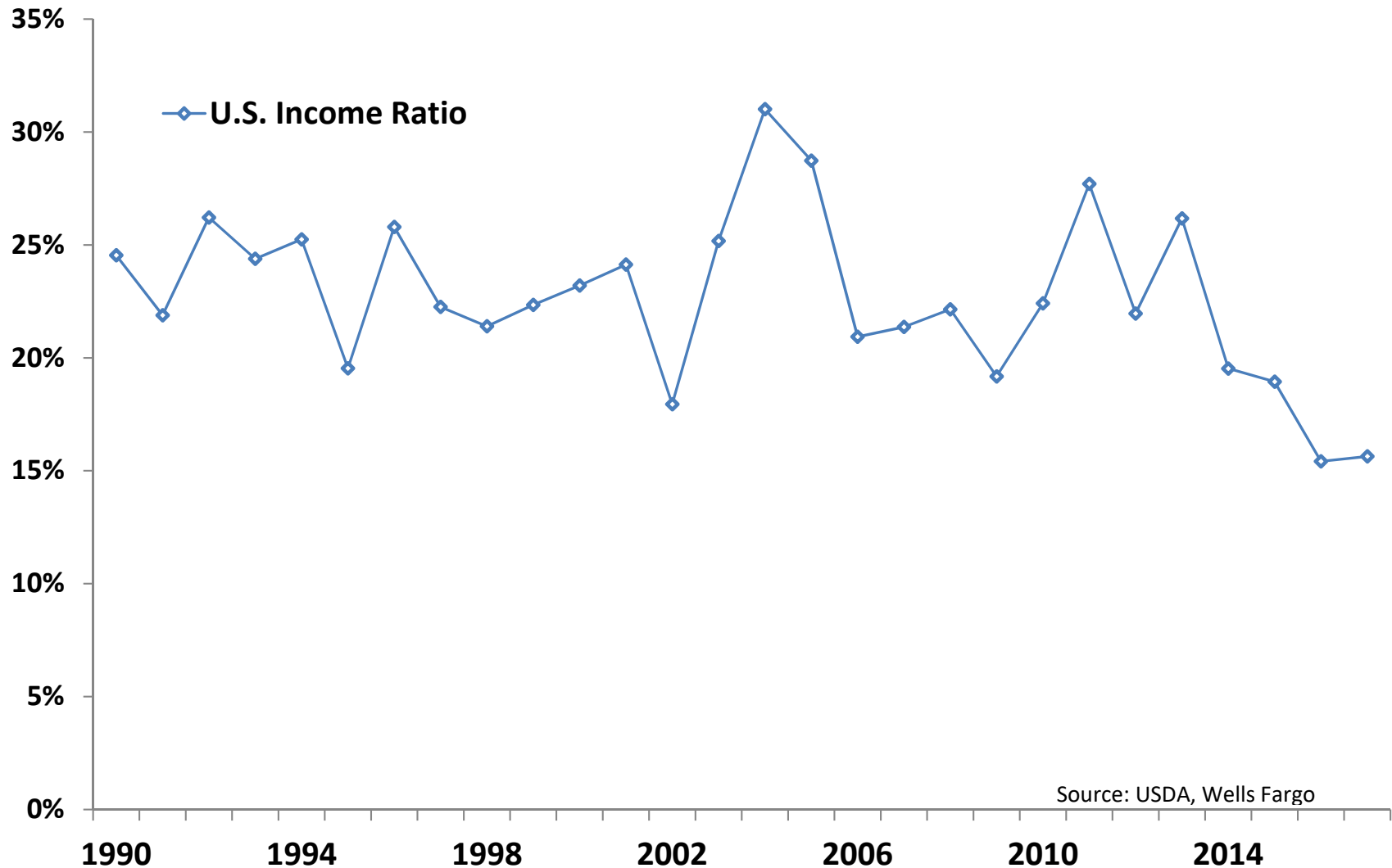
Ranch and farm markets are linked

Agricultural Revenues and Income in Billions



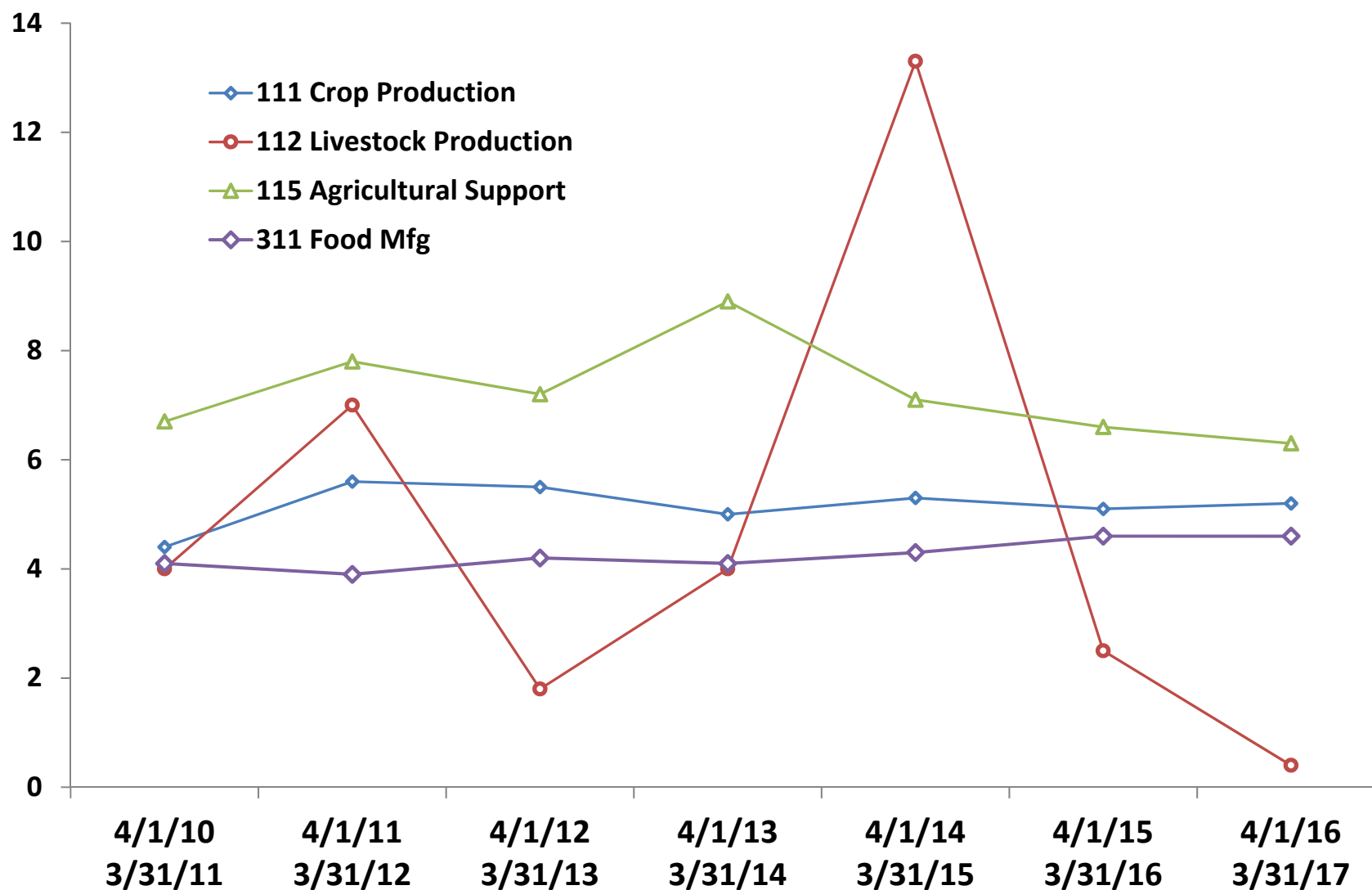
Averages exist for a reason. Don't forget feedback.

Ratio: Net Income to Revenue

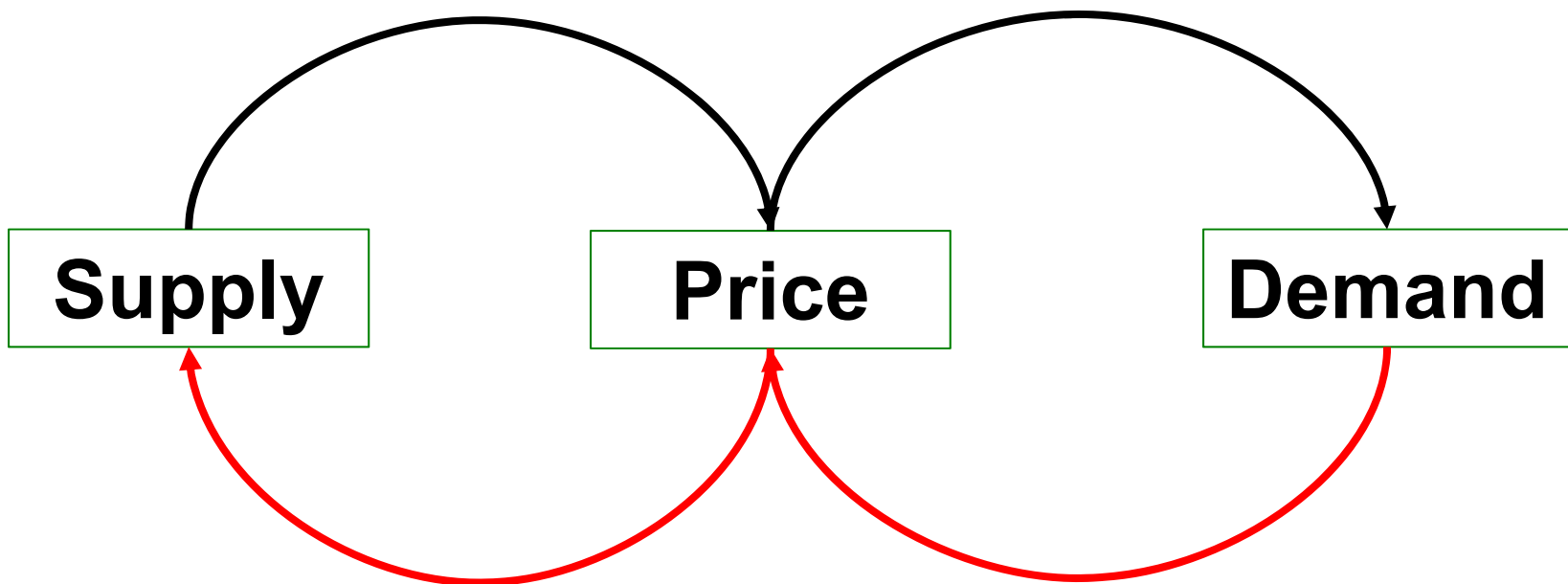


Capital is always looking for profits

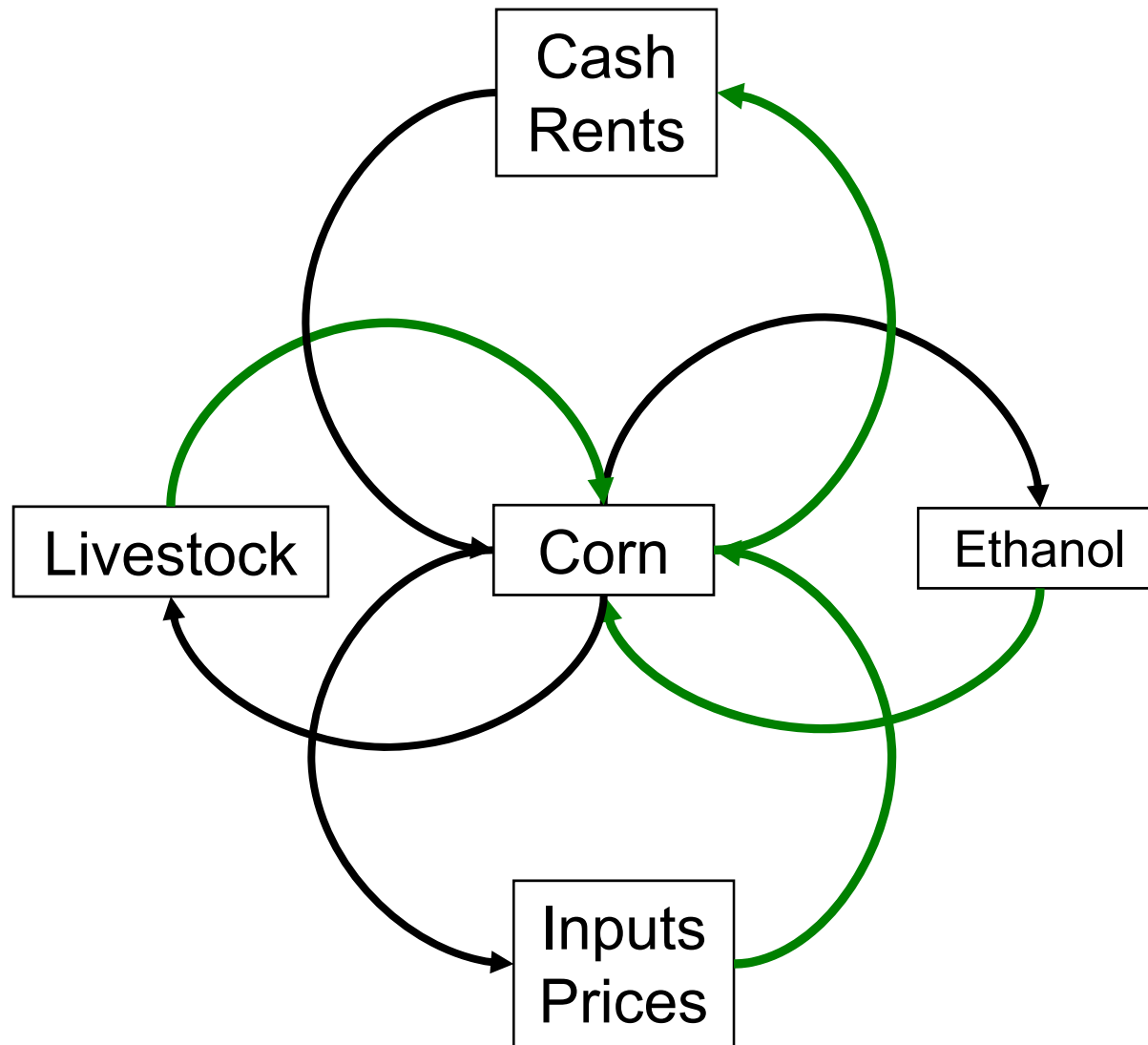
Profits before Taxes / Total Assets



Why the market always cycles and never settles

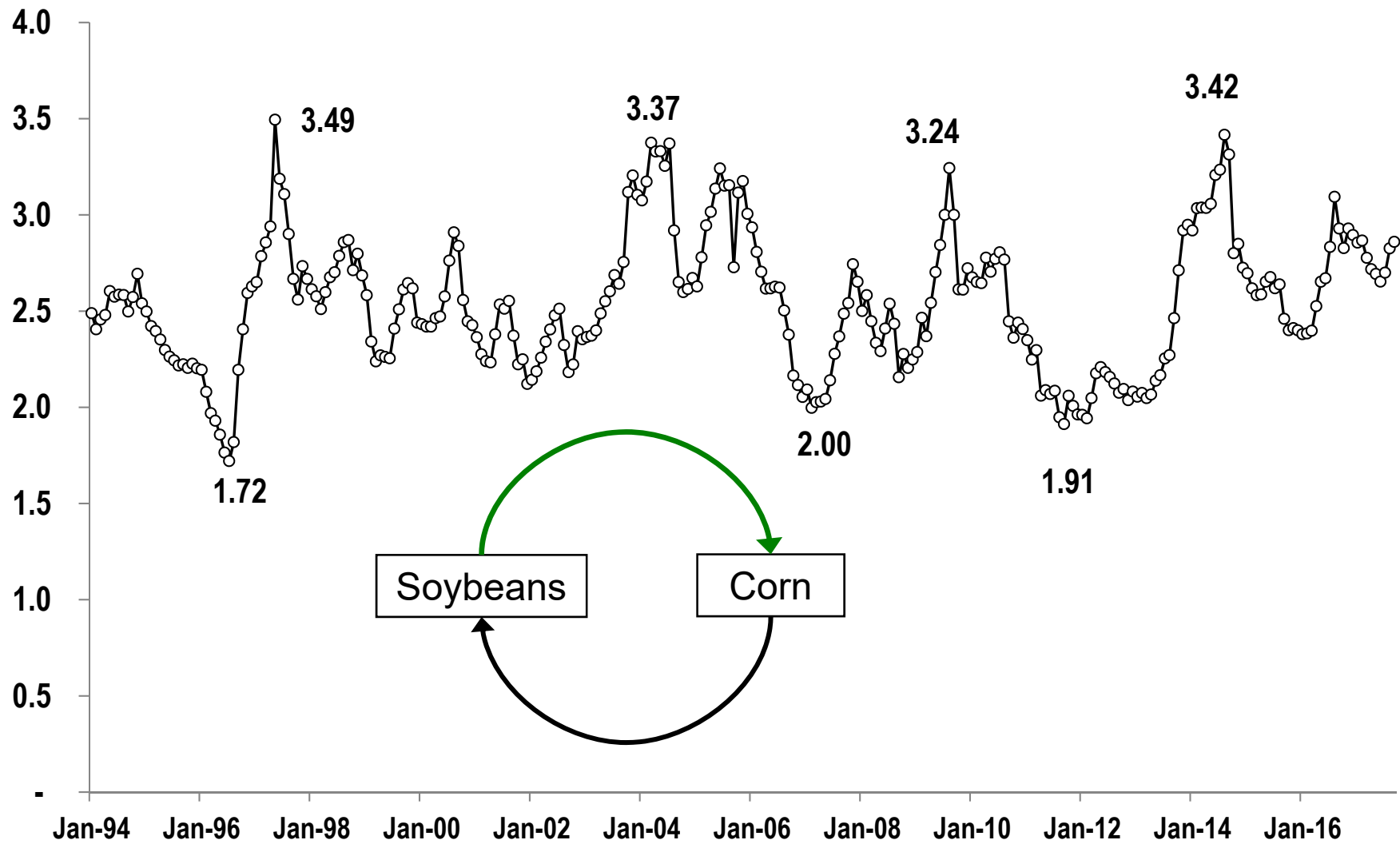


A single loop ... from a subsystem



Subsystems are linked as well

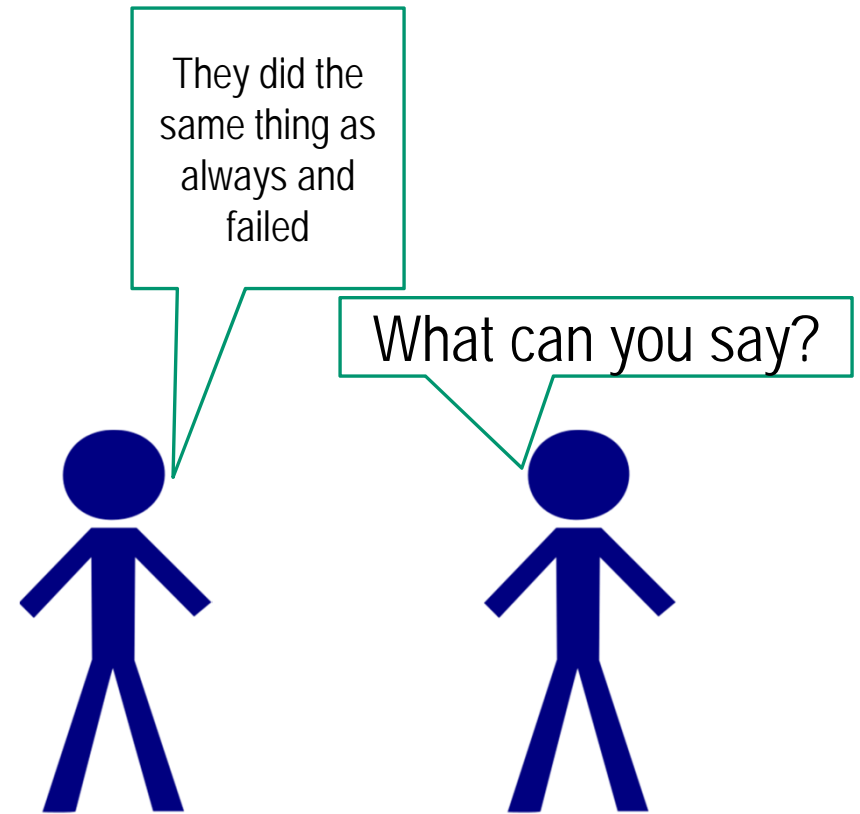
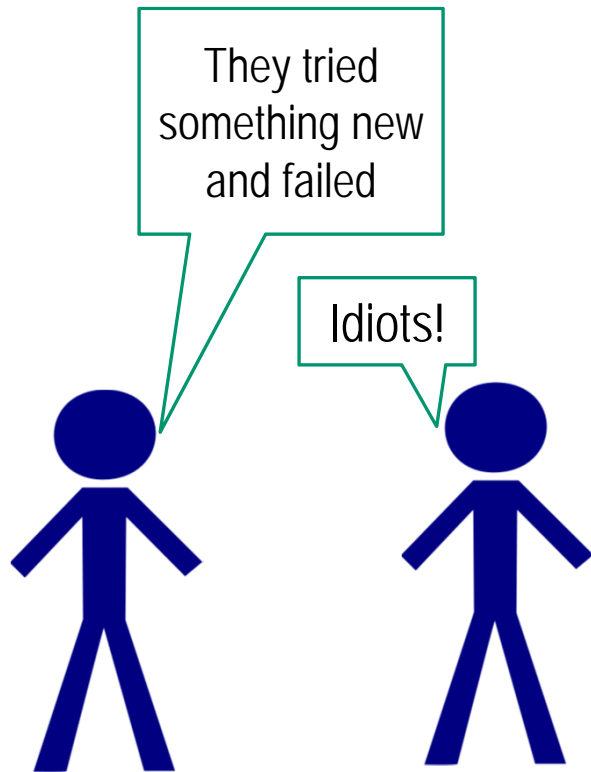
Soybean/Corn Price Ratio

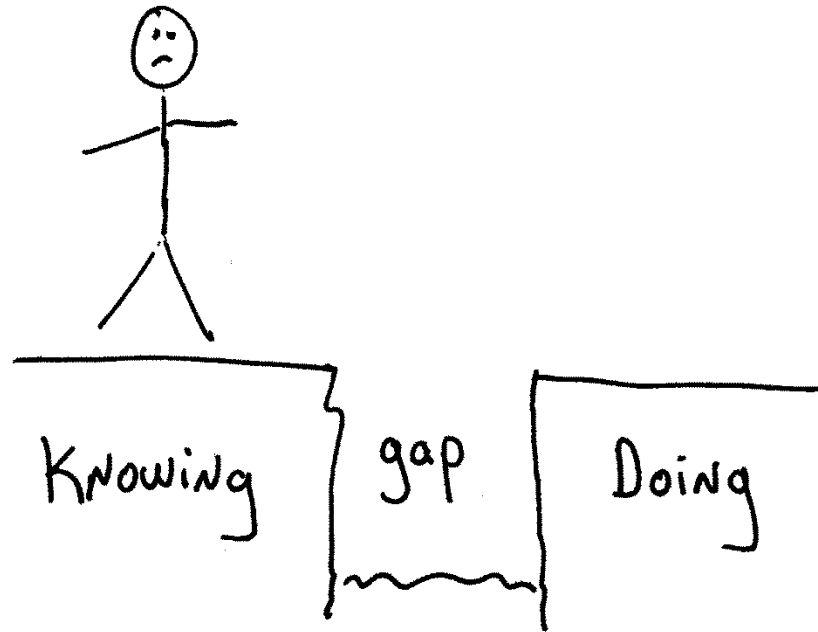


Key questions for all agricultural players

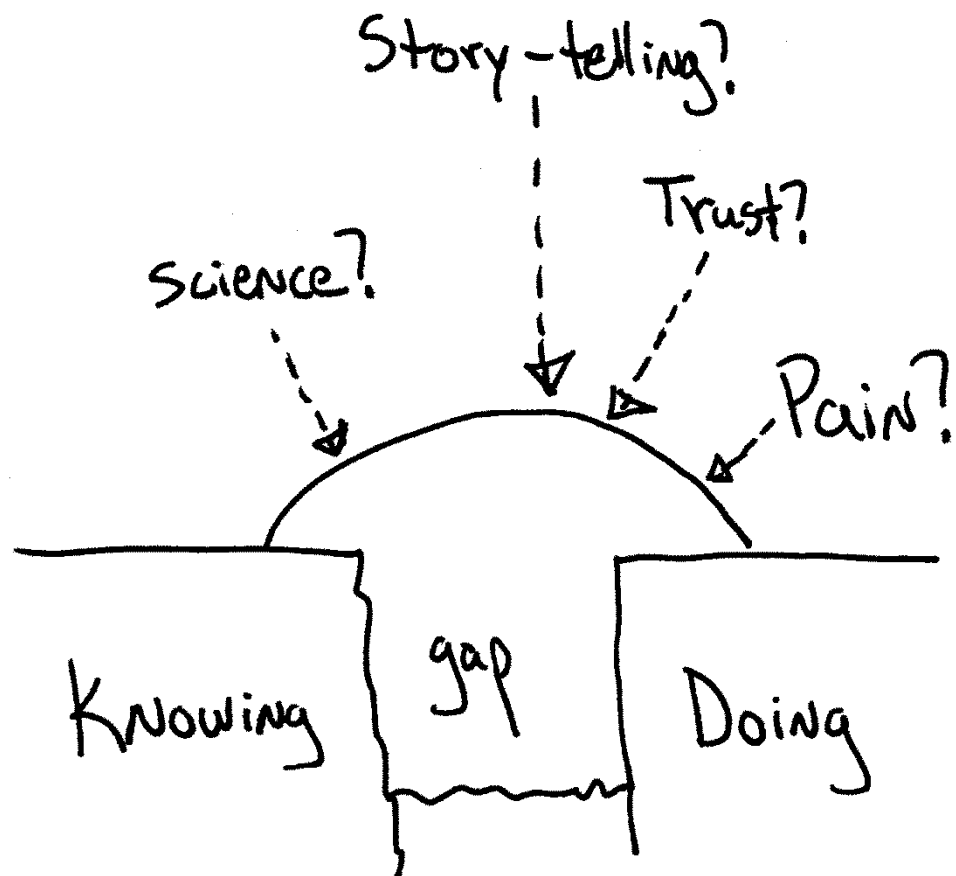
1. What is corn worth?
2. Why is corn worth that?
3. Who gets what share?
4. What differentiates the producers?
5. What's your “play”

**Technology respects no one's
opinion or politics.**





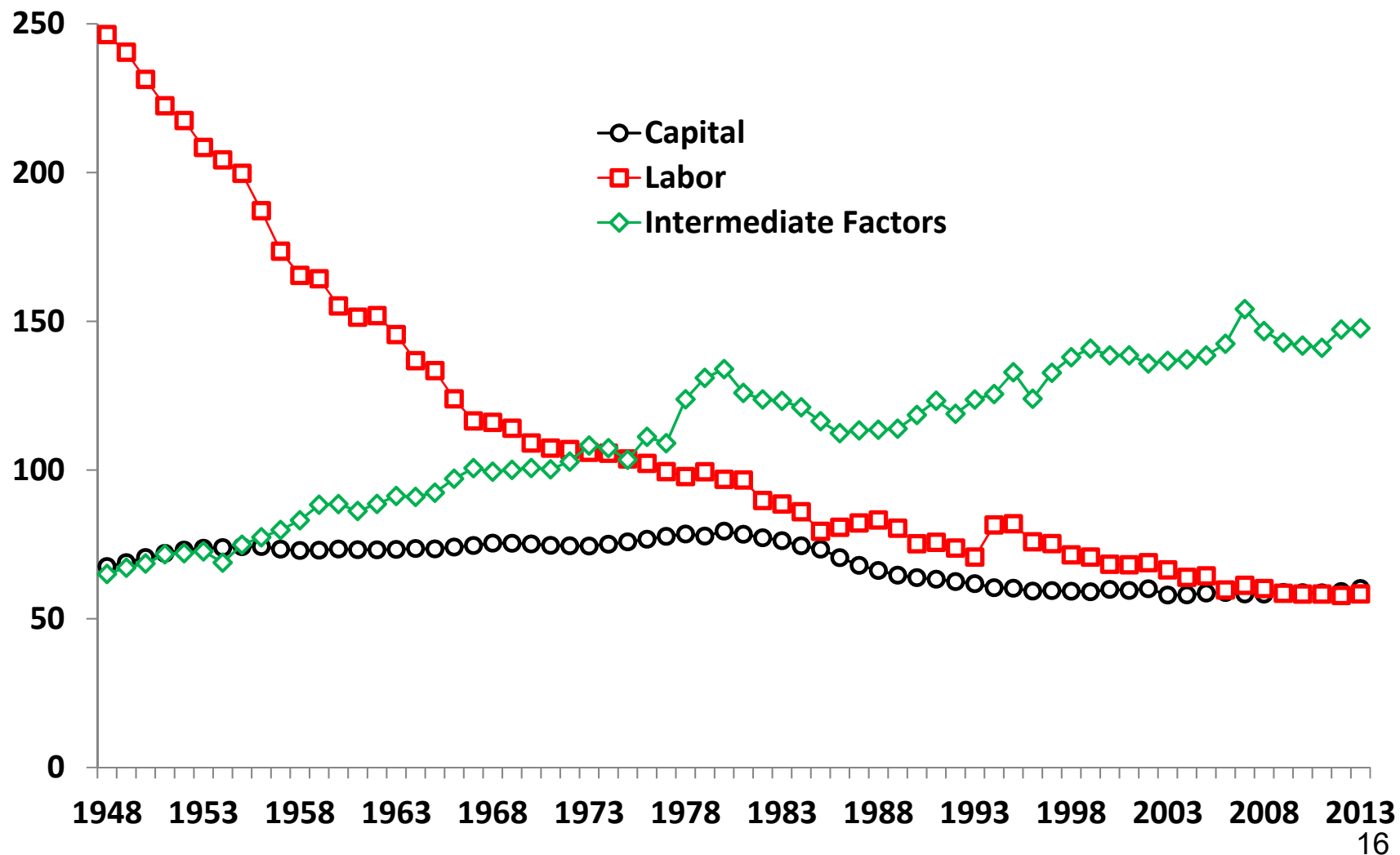
What is it that gets us
over the "knowing-doing" gap?



Substituting technology for labor

What Does Agriculture Use?

Inputs billions of \$ indexed to 2005



Farm accounting is a loosely applied term

1. Are they capturing dollars and quantities?
2. What is the timing of revenues and expenses?
3. If they knew what would they do about it?

Landlords are paid by the acre.

Farmers are paid by the bushel.

Same year, same prices and the same inputs

Financial Summary					
(Farms Sorted By Net Farm Income)	Low 20%	20 - 40%	40 - 60%	60 - 80%	High 20%
Number of farms	231	232	231	232	232
Income Statement					
Gross cash farm income	678,335	367,426	453,799	603,599	1,249,946
Total cash farm expense	617,722	314,653	382,886	486,859	989,601
Net cash farm income	60,614	52,773	70,913	116,740	260,346
Inventory change	(62,615)	(5,816)	11,434	28,485	109,062
Depreciation	(61,034)	(34,968)	(37,443)	(47,124)	(97,104)
Net farm income from operations	(63,035)	11,989	44,904	98,101	272,304
Net farm income per acre	\$ (63)	\$ 20	\$ 64	\$ 105	\$ 132
Profitability (market)					
Rate of return on assets	0%	1%	2%	3%	5%
Rate of return on equity	-4%	-1%	1%	4%	6%
Operating profit margin	-1%	3%	9%	13%	17%
Asset turnover rate	22%	21%	23%	25%	26%
Liquidity & Repayment (end of year)					
Current ratio	1.2	1.6	1.6	1.8	2.3
Working capital to gross inc	12.2%	33.0%	31.5%	38.3%	55.9%
Term debt coverage ratio	0.1	0.8	1.1	1.5	2.2
Nonfarm Information					
Net nonfarm income	53,199	46,872	39,070	33,343	26,371
Total family living expense	62,373	55,462	56,596	64,636	73,777
Crop Acres					
Total crop acres	1,006	595	707	932	2,062
Total crop acres owned	230	181	202	248	533
Total crop acres cash rented	765	395	491	658	1,491
Total crop acres share rented	12	20	14	26	37
Rent+Share Percent	77%	70%	71%	73%	74%
Machinery value per crop acre	\$ 733	\$ 754	\$ 677	\$ 665	\$ 579

Tragedy:

**A beautiful theory
murdered by brutal facts.**

Efficiency, flexibility and yield overwhelm size advantage.

2016 FINBIN Cash Rent Corn	Less than 50	51 - 100	101 - 250	251 - 500	501 - 1000	1001 - 1500	1501 - 2000	2001 - 5000
Total Cost per bushel	\$ 3.50	\$ 3.56	\$ 3.53	\$ 3.52	\$ 3.57	\$ 3.48	\$ 3.52	\$ 3.61
Equipment cost per acre	\$ 148	\$ 141	\$ 133	\$ 126	\$ 126	\$ 124	\$ 125	\$ 124
In bushels per acre	47	44	42	39	39	38	38	36
Yield per acre	181	188	188	193	196	196	196	196
Percent of yield	26%	24%	22%	20%	20%	19%	19%	19%

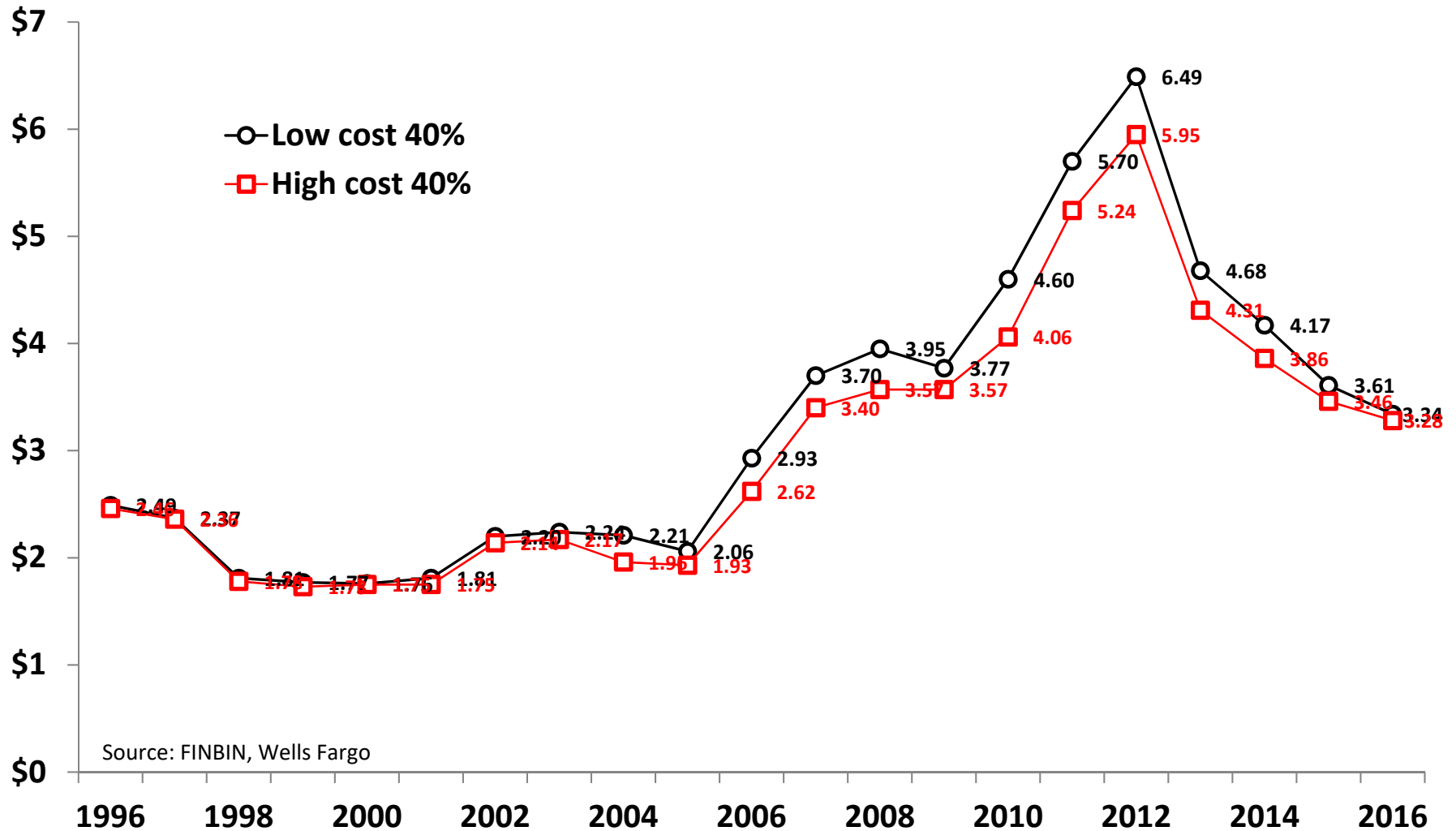
**Mixed operations taking
advantage of other
economic activities.**



**You can't market your
way out of this problem.**

Sales gap between low and high cost producers

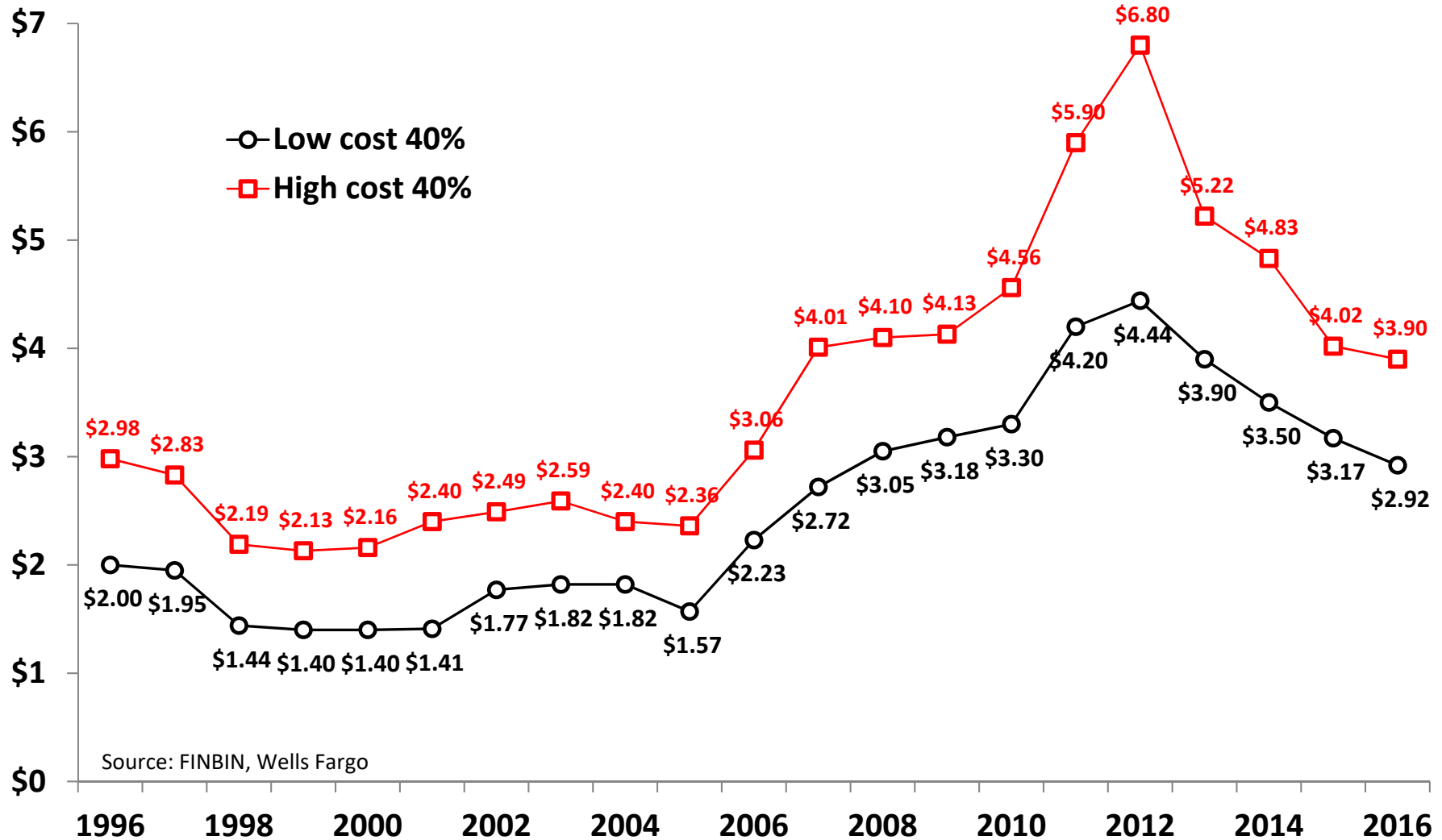
MN Cash Rent Corn Production
Sales revenue per bushel



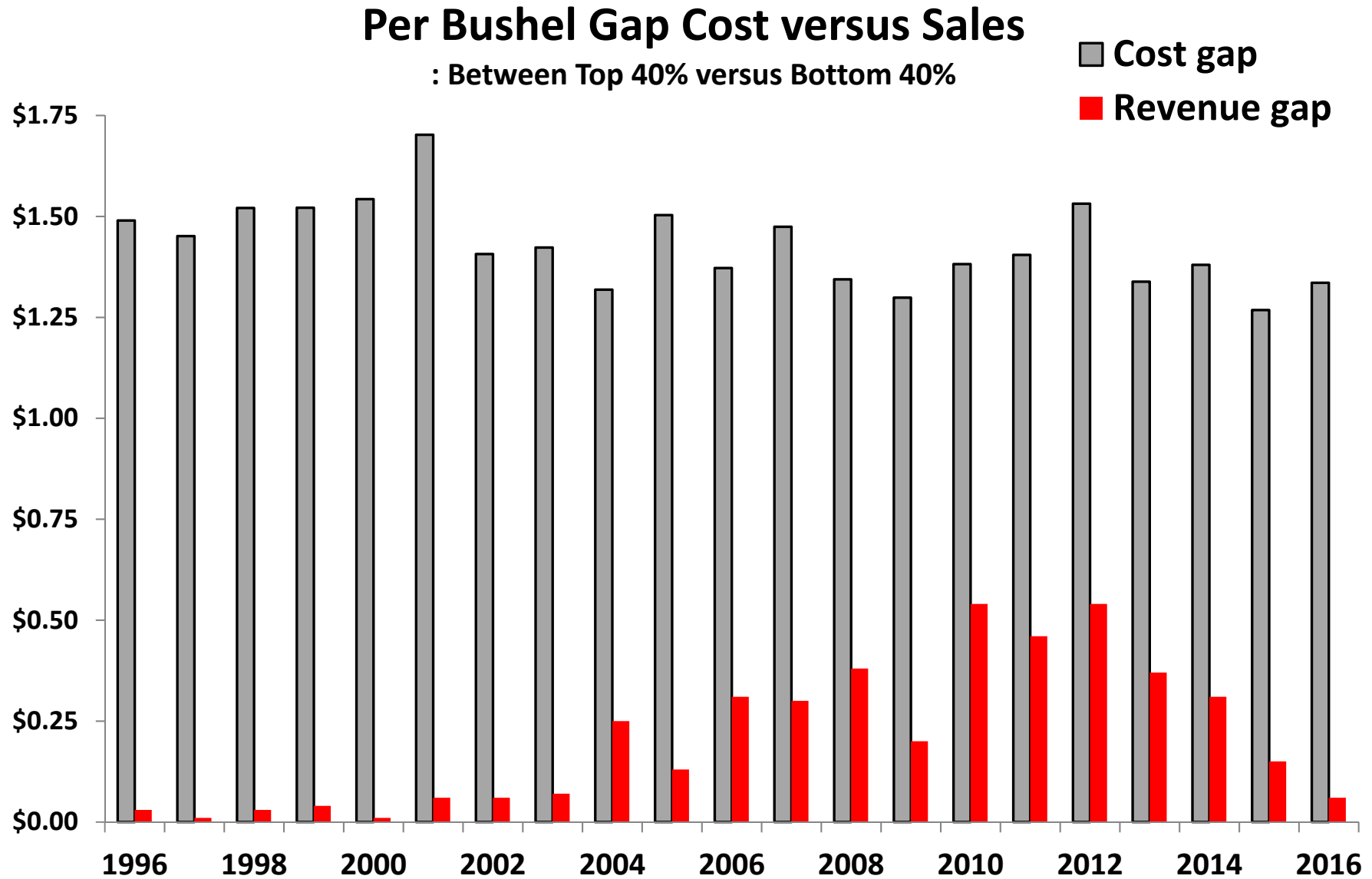
Cost gap between low and high cost producers

MN Cash Rent Corn Production

Total cost per bushel



Cost of production dominates marketing by 7X



Source: FINBIN, Wells Fargo

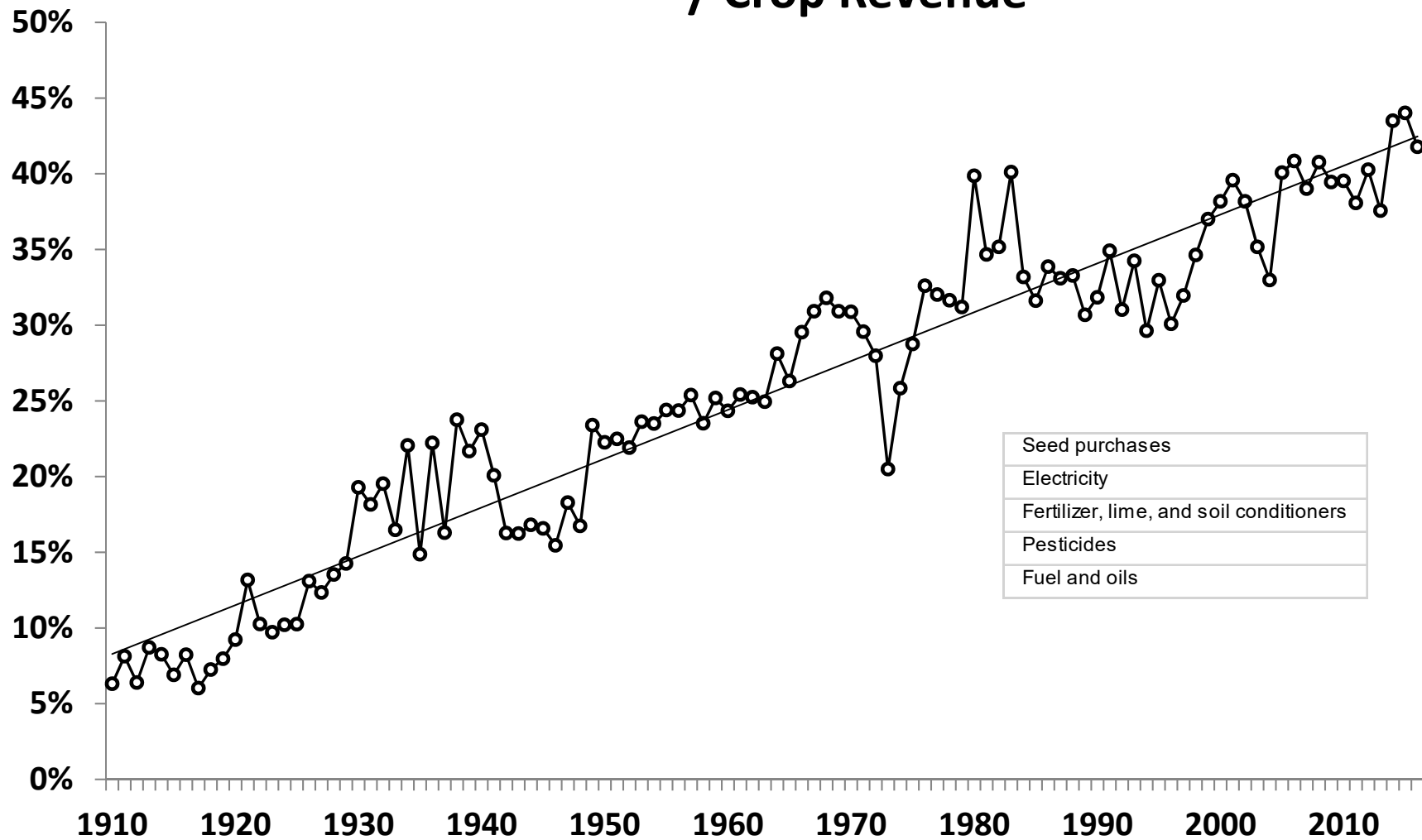
It's all about choices and implementation

Corn on Cash Rent	Low 20%	20 to 40%	40 to 60%	60 to 80%	High 20%
Number of farms	270	271	270	271	271
Yield per acre (bu.)	204	202	204	196	193
Operators share of yield %	100	100	100	100	100
Gross return per acre	704	682	690	654	630
Direct Expenses					
Seed	106	109	118	117	123
Fertilizer	107	122	132	139	149
Crop chemicals	32	32	36	35	43
Crop insurance	18	16	18	20	20
Land rent	177	204	213	212	229
All other	90	106	109	118	135
Total direct expenses per acre	530	589	625	641	700
Overhead Expenses					
Total overhead expenses per acre	87	82	106	111	135
Overhead to direct	16%	14%	17%	17%	19%
Net return per acre	87	11	(41)	(98)	(205)
Government payments	29	24	28	26	23
Labor & management charge	35	41	51	55	55
Net return over lbr & mgt	81	(6)	(64)	(127)	(237)
Cost of Production					
Total direct expense per bu.	2.60	2.92	3.07	3.27	3.63
Total dir & ovhd exp per bu.	3.03	3.33	3.58	3.84	4.33
With labor & management	2.92	3.35	3.63	3.91	4.44
Net Sales per bushels	3.34	3.33	3.32	3.28	3.22
Machinery cost per acre	107	115	131	141	162
Est. labor hours per acre	2.5	2.4	2.6	2.8	3.0

**You only get paid for
what you bring to the game.**

Yield and efficiency → MAD

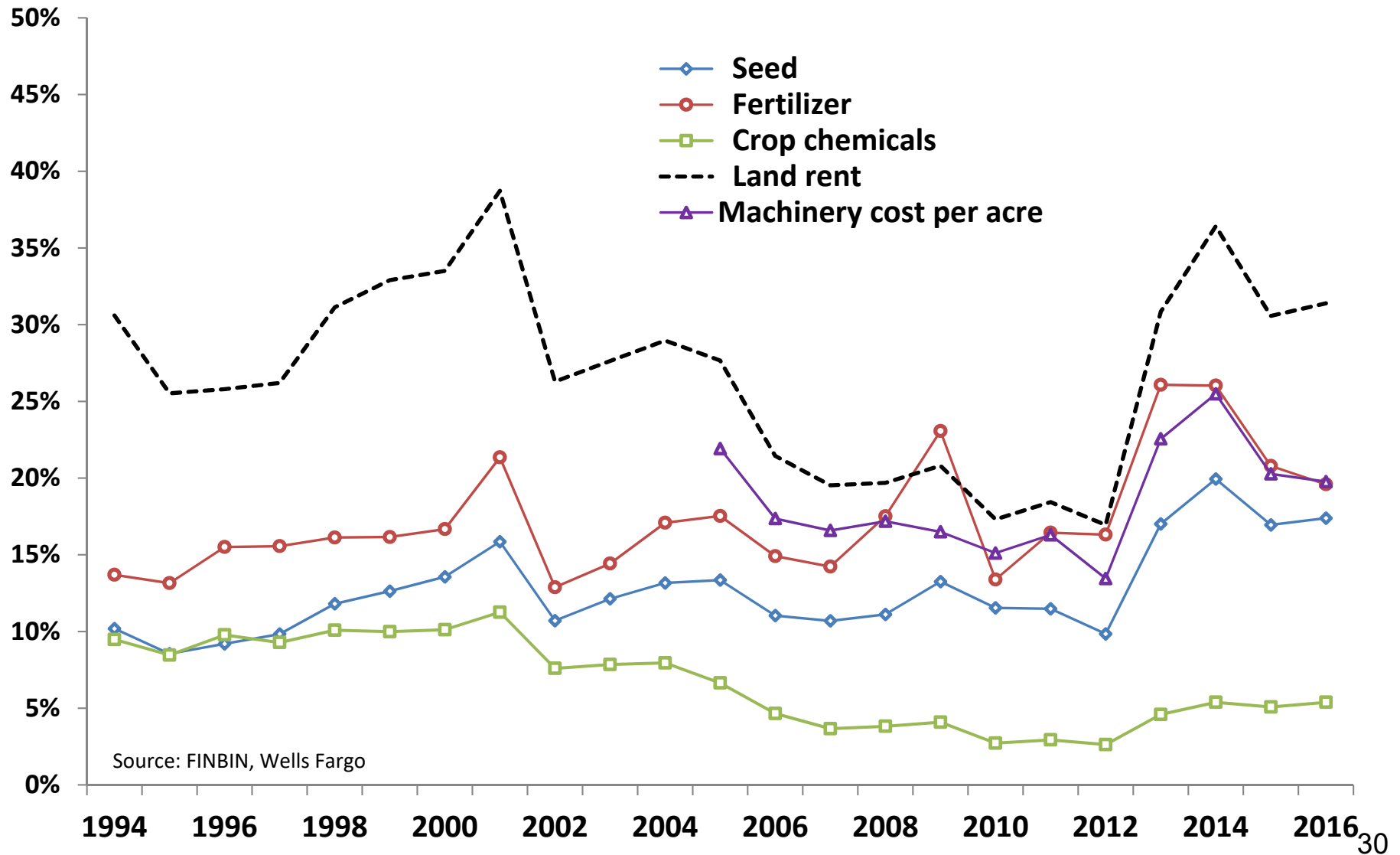
Percentage: Seed+Crop Inputs
/ Crop Revenue



**Don't let dollars blind you
to the “real” trade**

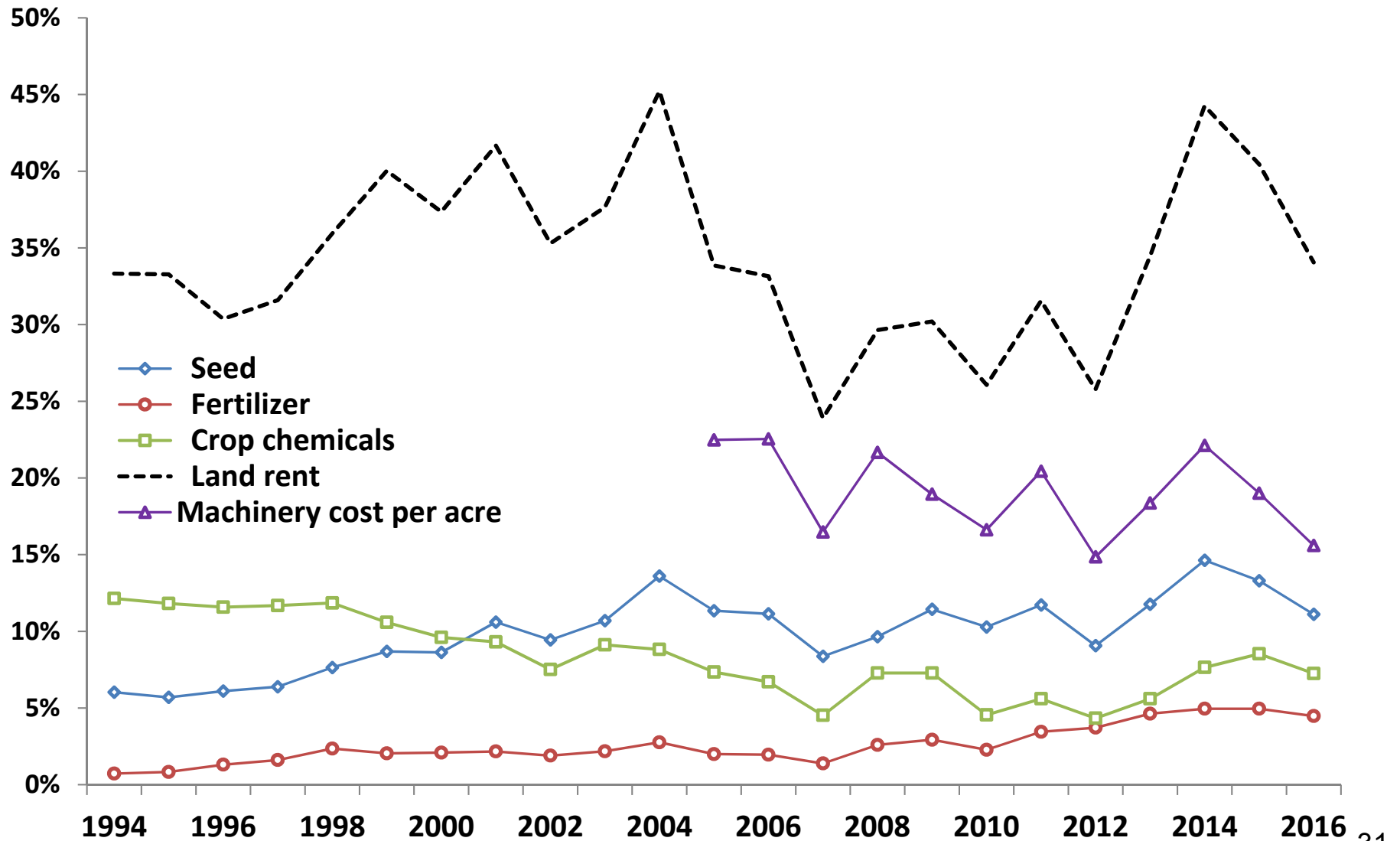
Factor shares for corn

As a Percentage of Yield



Factor shares for soybeans

Soybean Inputs As a Percentage of Yield



Focus on the big things

The Percent of Yield Going to the Factor			
	Soybeans	Corn	Avg
Seed	10%	12%	11%
Fertilizer	2%	17%	10%
Crop chemicals	8%	7%	8%
Land rent	34%	27%	30%
Machinery cost per acre	19%	18%	19%
Crop Insurance	4%	3%	4%
	78%	85%	81%

Control what you can.

Targeted yield 175 bu	Active Percent	Target lbs. per acre	Lbs to be applied to 1 lb	Lbs applied	Price per ton	Cost per acre	
Potash Granular Muriate	61%	56	1.64	92	\$ 325	\$ 14.92	
DAP - Phosphate	46%	95	2.17	207	\$ 440	\$ 45.43	
DAP - Nitrogen	18%			37			
Urea Ammonia	46%	175					
Ammonia after DAP credit		138	2.17	300	\$ 300	44.94	
						\$ 105.30	
		Basis	Net Cash	Per lb.		Per lb.	
December 2018 Corn CME	\$ 3.90	\$ (0.35)	\$ 3.55	\$ 0.063		\$ 0.011	
Bushels of corn traded	29.7			Percentage lb/lb		16.9%	
Percent of 175 bushel corn	16.9%						
20 year average MN FINBIN	17.3%						
Cost savings or disadvantage	-0.4%						

It's about bushels not acres

- **You get paid by the bushel**
 - Acres
 - Relative yield
- **Your success is average cost**
 - Average depends on marginal
 - Everything is fixed now
 - Everything is variable tomorrow
- **Adopt and adapt is a learning process**
- **Asset discipline is yours alone**