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COST OF PRACTICES SURVEYS



Cost of Practices Survey

- ⦿ Long history of regular surveys
 - Every 2 years since 1982
- ⦿ Lengthy survey with significant time commitment by respondents
- ⦿ Survey represented by different institutions over time
 - Duke, Mississippi State, Auburn
- ⦿ Survey respondents
 - Industrial/investor landowners, large private owners, consultants, and public agencies
 - Maintaining up to date mailing list significant challenge



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Survey interpretations

- ◎ Average prices are survey results weighted by acreage
 - Economy of scale vs price variability
- ◎ Changing prices represent impacts of both supply and demand
 - Changing cost of inputs may not be fully represented



Survey interpretations

- Sometimes changes reflect practices that go in or out of style
 - Changing cost effectiveness (e.g. Mechanical vs chemical SP)
- Sometimes a few cases strongly influence price, reported for continuity
- Respondents may choose reporting years as FY 09 or calendar year 09



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Respondents



	2008	2006
Public agencies	46%	33%
Industrial/Investors	37%	39%
Consultants	17%	28%
Surveys mailed	286	282
Returned	49	53



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Mechanical Site Preparation

	2008	2006	Change
Shear, rake, pile, bed	188.73		
Chop and bed	114.10		
Bedding, all types	173.94		
3-in-1 plow	155.10	116.23	+33%
Shear, rake, pile	170.60		
All other multi-pass	190.74		
Single chop	113.95		
All other single pass	118.75		
All	157.32	119.72	+31%

Planting (\$/tree)

	2008	2006	Change
Hand, Cutover, Bareroot	0.087	0.071	+23%
Hand, Cutover, Container	0.109	0.110	-1%
Machine, Cutover, Bareroot	0.139	0.106	+31%
Machine, Oldfield, Bareroot		0.094	
Average hand	0.108	0.086	+26%
Average machine	0.139	0.117	+19%



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Planting (\$/acre)

	2008 (tpa)	2006 (tpa)	Change
Hand, Cutover, Bareroot	51.92 (598)	37.66 (515)	+38%
Hand, Cutover, Container	63.90 (609)	30.61 (336)	+109%
Machine, Cutover, Bareroot	84.41 (608)	65.54 (628)	+28%
Machine, Oldfield, Bareroot		62.52 (547)	

Prescribed Fire

	2008	2006	Change
Ground drip torch/Site prep	35.71	33.11	+8%
Ground drip torch/Mid rotation	21.31	17.62	+21%
Ground drip torch/All	27.55		
All	29.31	18.13	+62%



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Chemical Vegetation Control

	2008	2006	Change
Site Prep, Aerial	58.74	97.61	-40%
Site Prep, Band	31.80	102.70	-69%
Site Prep, Broadcast	65.64		
Herbaceous control, Aerial	41.77	44.73	-7%
Herbaceous control, band	22.25		
Early Release, Aerial	48.18	81.71	-41%
Mid Rotation, Aerial	46.63		
Mid Rotation, Broadcast	56.15		
All	48.82	79.41	-39%



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Fertilization

	2008	2006	Change
Established stand, aerial		51.50	
All, aerial	129.78		
All	110.28	77.98	+41%



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Others (\$/acre)

	2008	2006	Change
Fire protection	0.87	0.40	+118%
Cruising	6.28	5.23	+20%
Timber Marking	86.99	58.26	+49%
Pre-commercial thinning	80.18	58.89	+36%
Custodial Management	17.16	7.65	+124%



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Interpretation

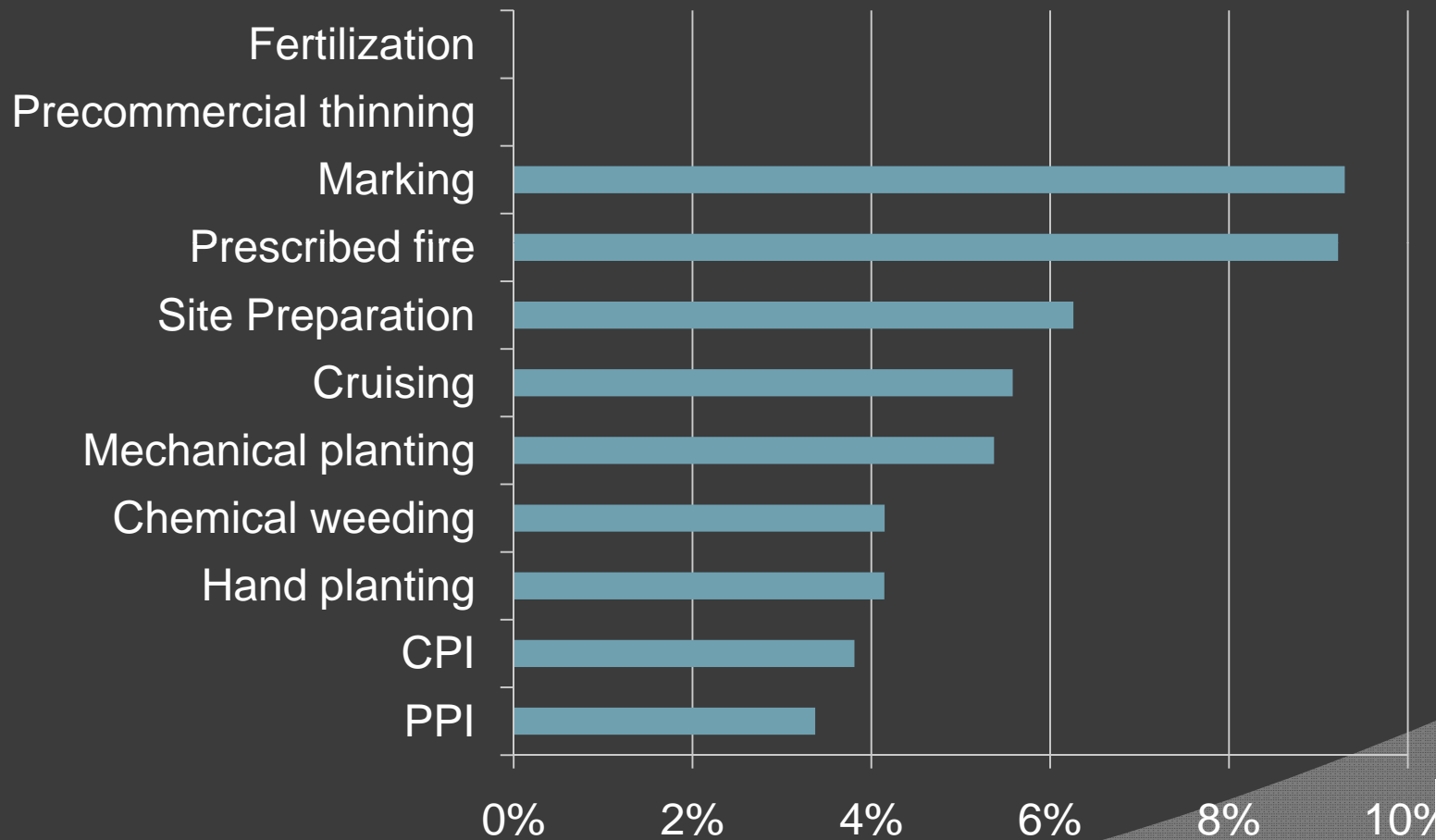
- ⦿ Don't draw too many conclusions about two year swings
 - Highly influenced by who decides to report
- ⦿ Observe continuation or reversal in long term trends
 - Prescribed fire
 - Chemical treatments
 - Labor costs
- ⦿ What is the trend



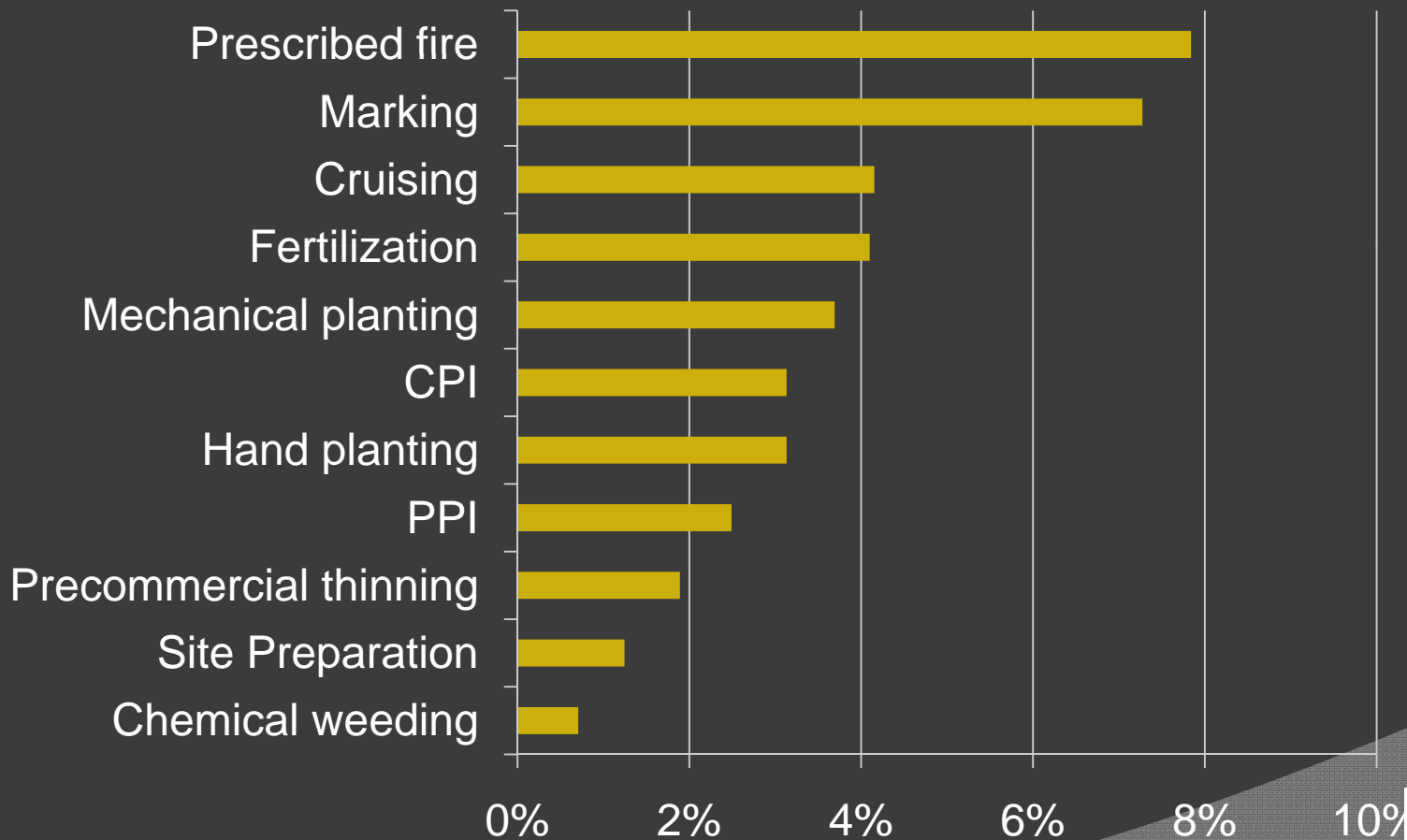
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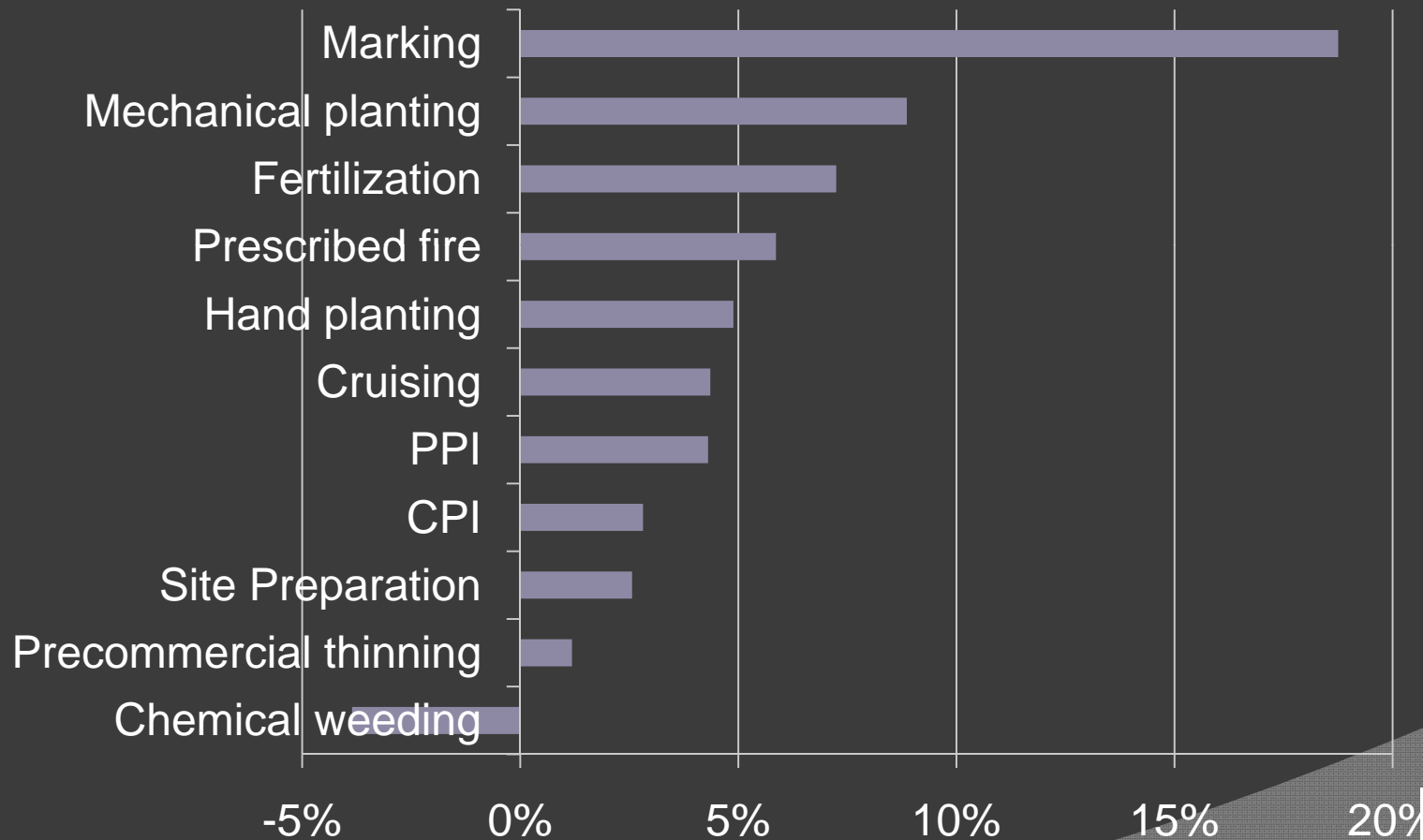
Long term annual price growth (1952)



Long term annual price growth (1982)



Long term annual price growth (1998)



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How much will it cost?

- ⦿ Is it influenced by technology?
 - Likely grow at less than CPI
- ⦿ Is it dominated by labor?
 - Likely grows at least as fast as CPI, more if labor (skill) shortages occur.
- ⦿ Is it dominated by energy
 - Who knows?
 - Demand for energy intensive products decline
- ⦿ Does it produce uncontrolled risk or liability?
 - Risk control (management, policy) can mediate cost



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Influence of cost changes on NPV

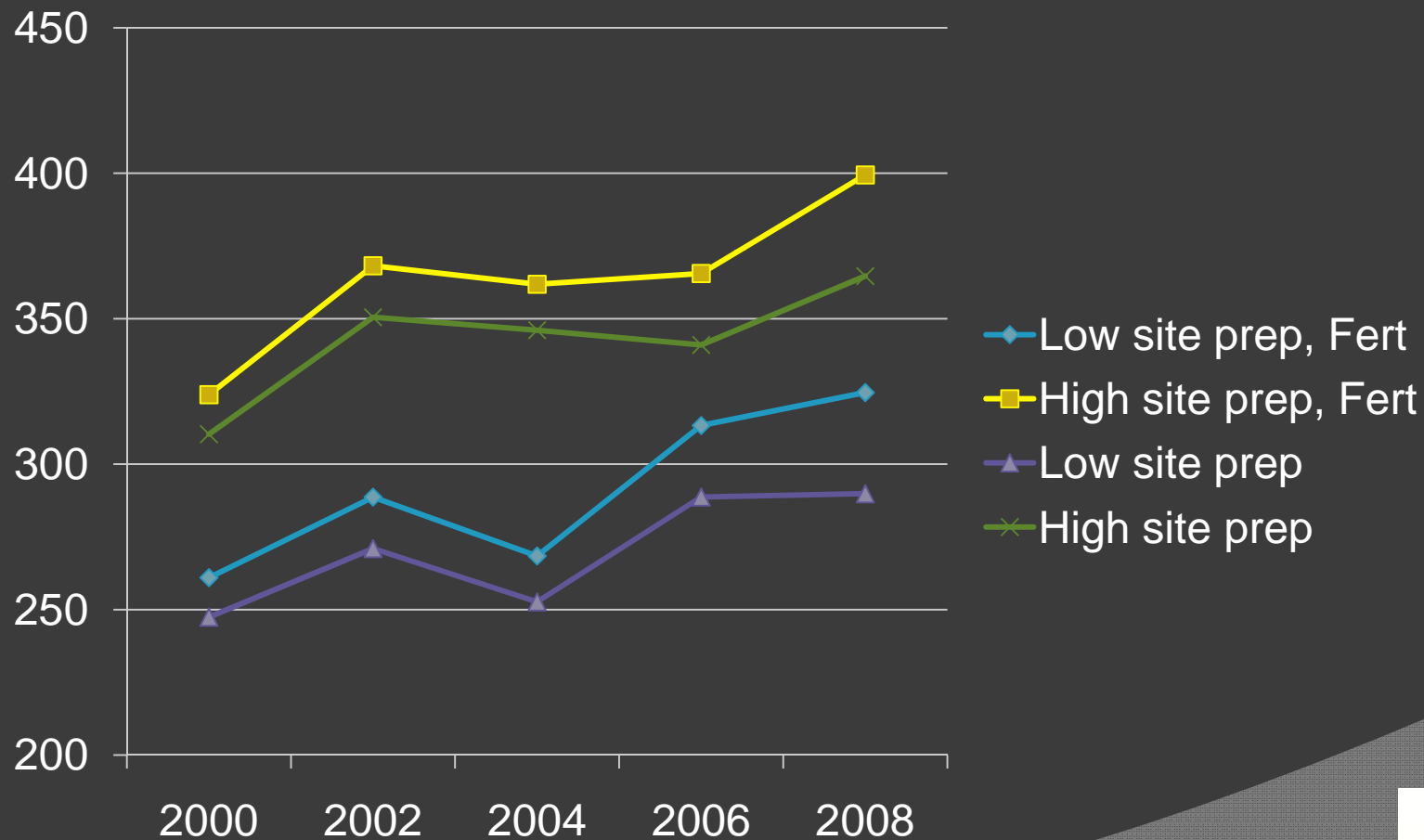
- Stand prescriptions and result from Dickens et al
 - <http://www.forestproductivity.net/economics/1.pdf>
- Treatments
 - Mechanical Site Prep (single pass & multipass)
 - Chemical weed control
 - Hand planting at average density
 - Mark and Thin at 15
 - With and without fertilizer at 16
 - Cruise and final harvest at 24
 - Annual fire protection
- Mean annual increment Base= 6.24 t/ac/yr, Fertilized=6.99 t/ac/yr
- Sold volume % pulpwood Base=46%, Fert=40%



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Present Value of Mgmt Costs



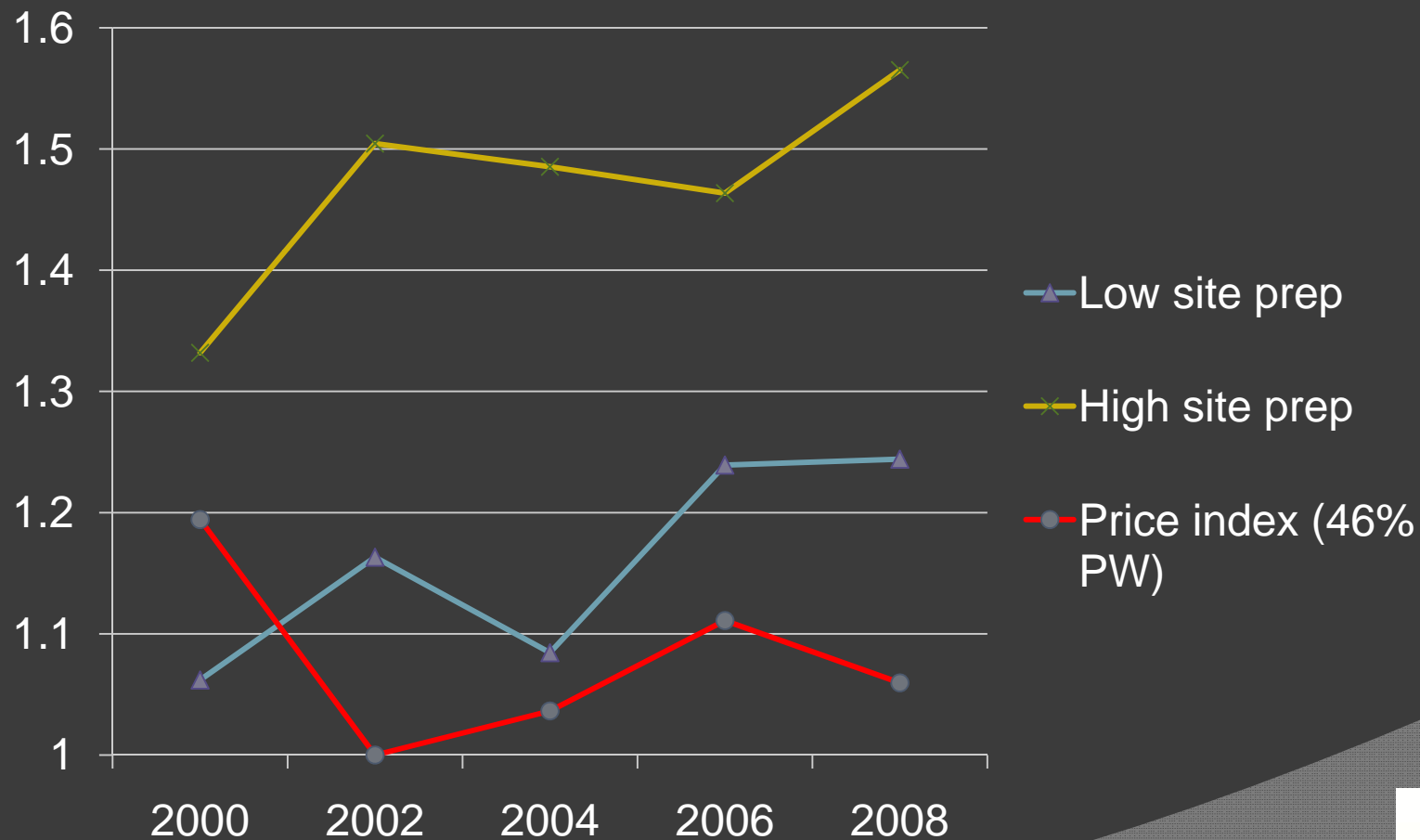
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Revenue Multiplier to Breakeven with Lowest Cost, Fertilizer



Revenue Multiplier to Breakeven with Lowest Cost, No Fertilizer



Management Cost Inflation

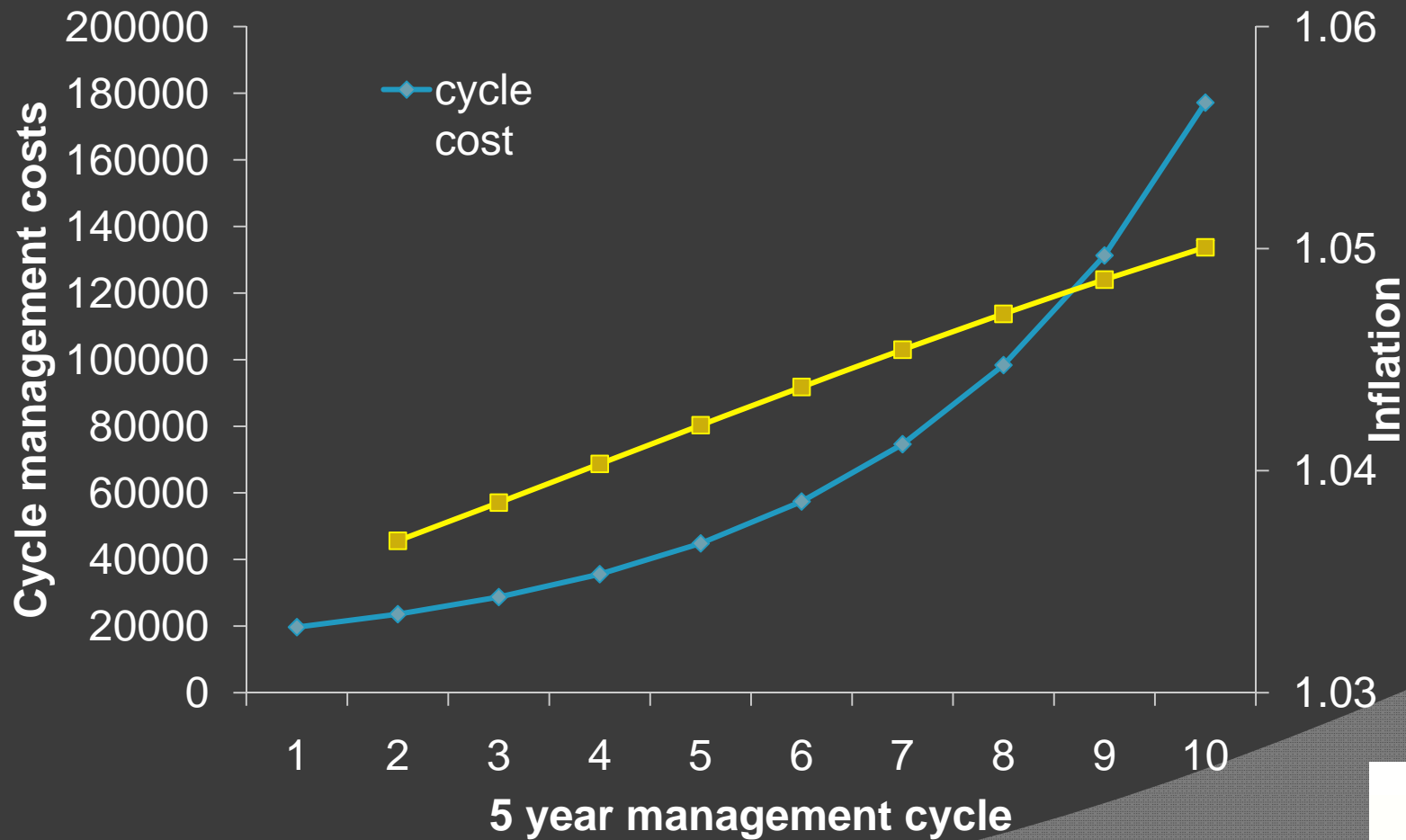
- ◎ The CPI is calculated by repurchasing a “basket” of goods
- ◎ Landowner’s basket
 - 500 acres, 300 planted pine, 50 acres per age class
 - Every 5 years, 50 acres regenerated, thinned; 60 acres burned
 - 50 acres reserve/unmanaged
 - 150 acres natural stands
- ◎ 1982 to 2008 inflation rate applied



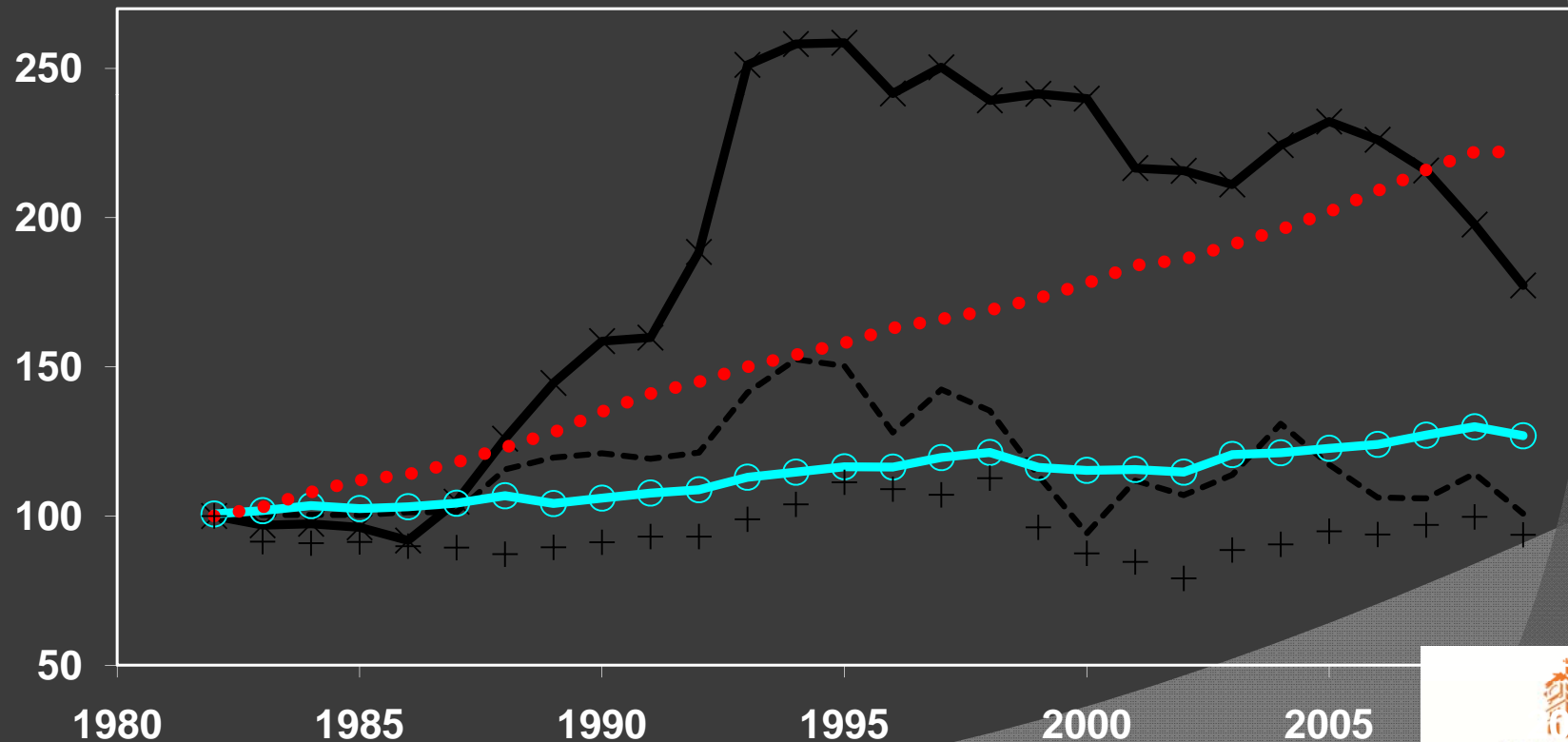
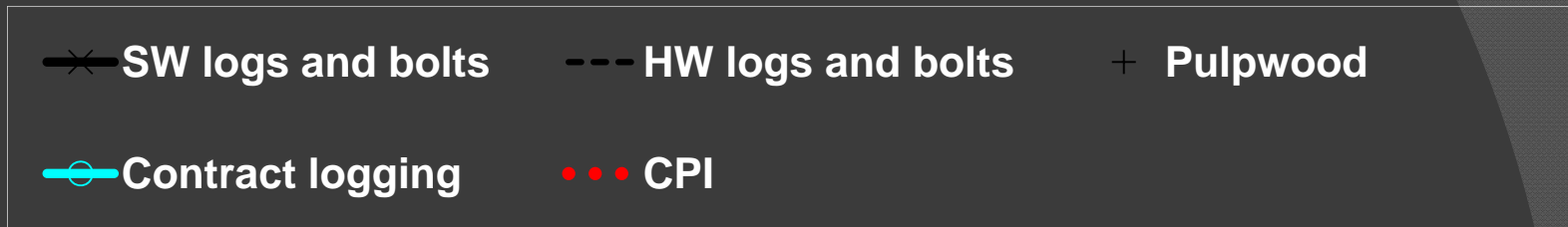
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Changes in Cycle Mgmt Costs



PPI - Price Indices



Conclusions

- Analysis of future investments require more specific assumptions about cost and revenue growth
- Carefully chosen practices can probably maintain IRR and NPV even with no real price growth in stumpage



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Information

- ◎ Forest Landowner Magazine
 - Sept/Oct 2009
- ◎ Summary
 - http://www.aces.edu/timelyinfo/ForestryWildlife/2009/October/FW_10_30_09.pdf
- ◎ This presentation
 - <https://fp.auburn.edu/auforestops>



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Thank You!

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