Becky Barlow, Mathew Smidt, Mark Dubois

COST OF PRACTICES SURVEYS

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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

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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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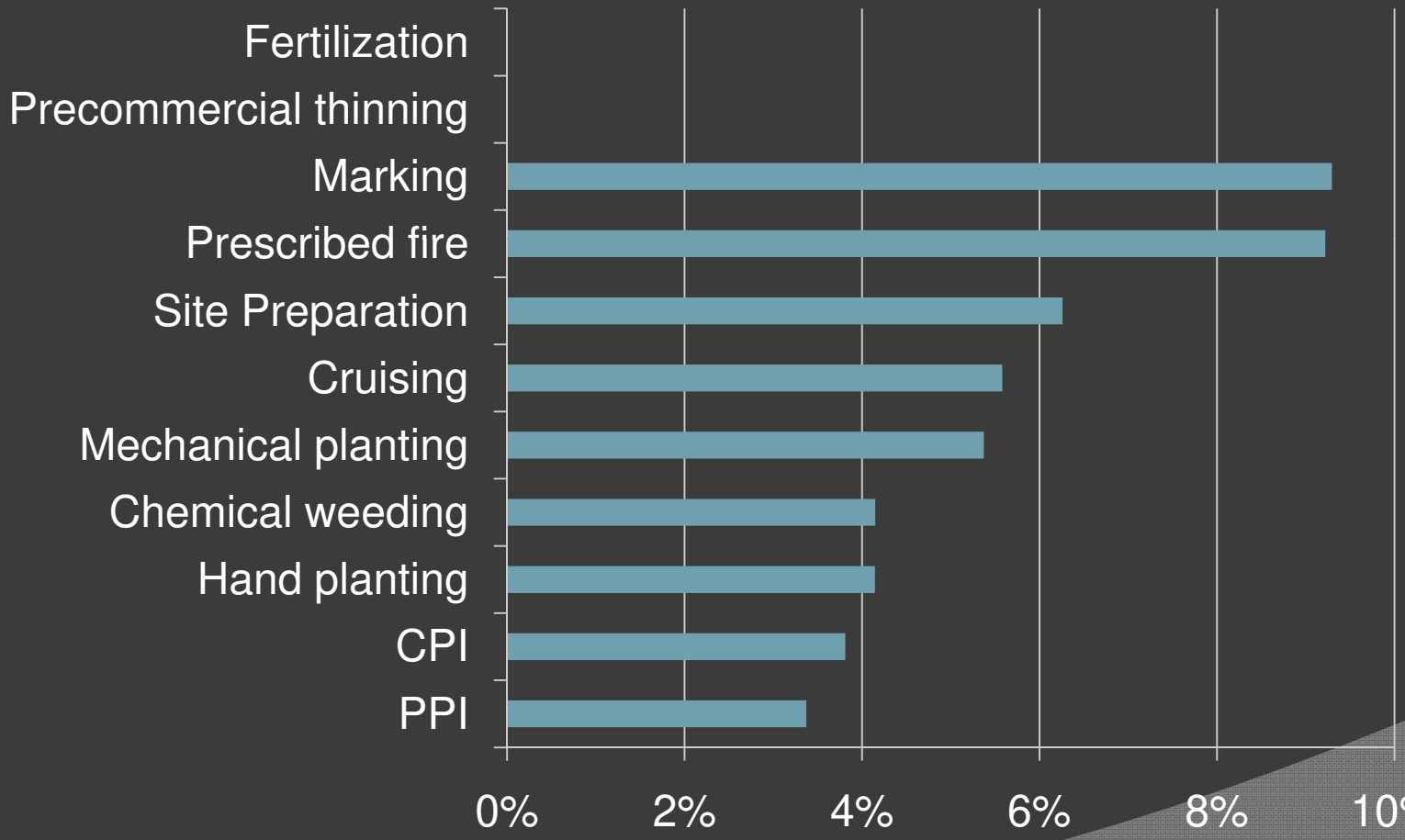
Long term annual price growth (1952)



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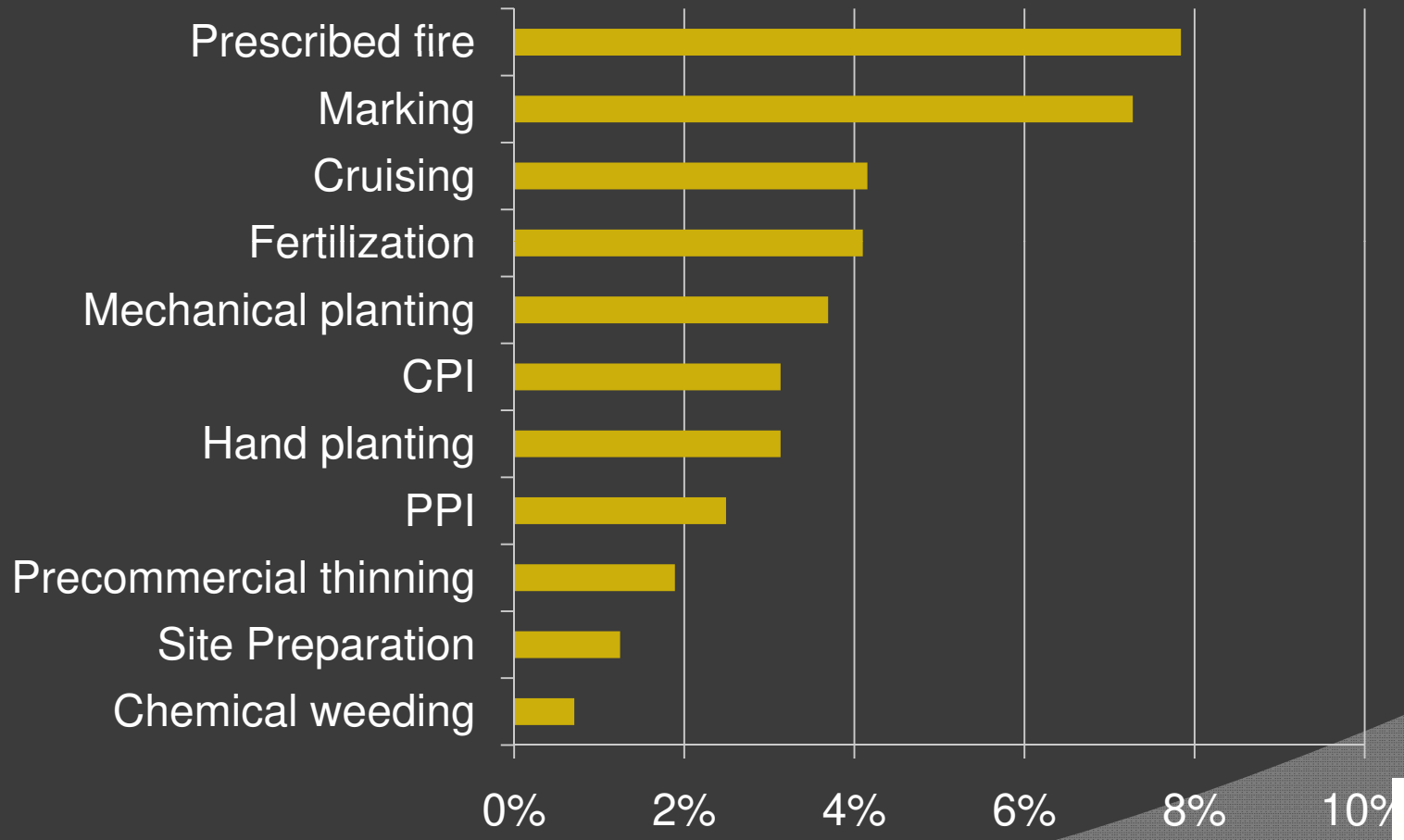
Long term annual price growth (1982)



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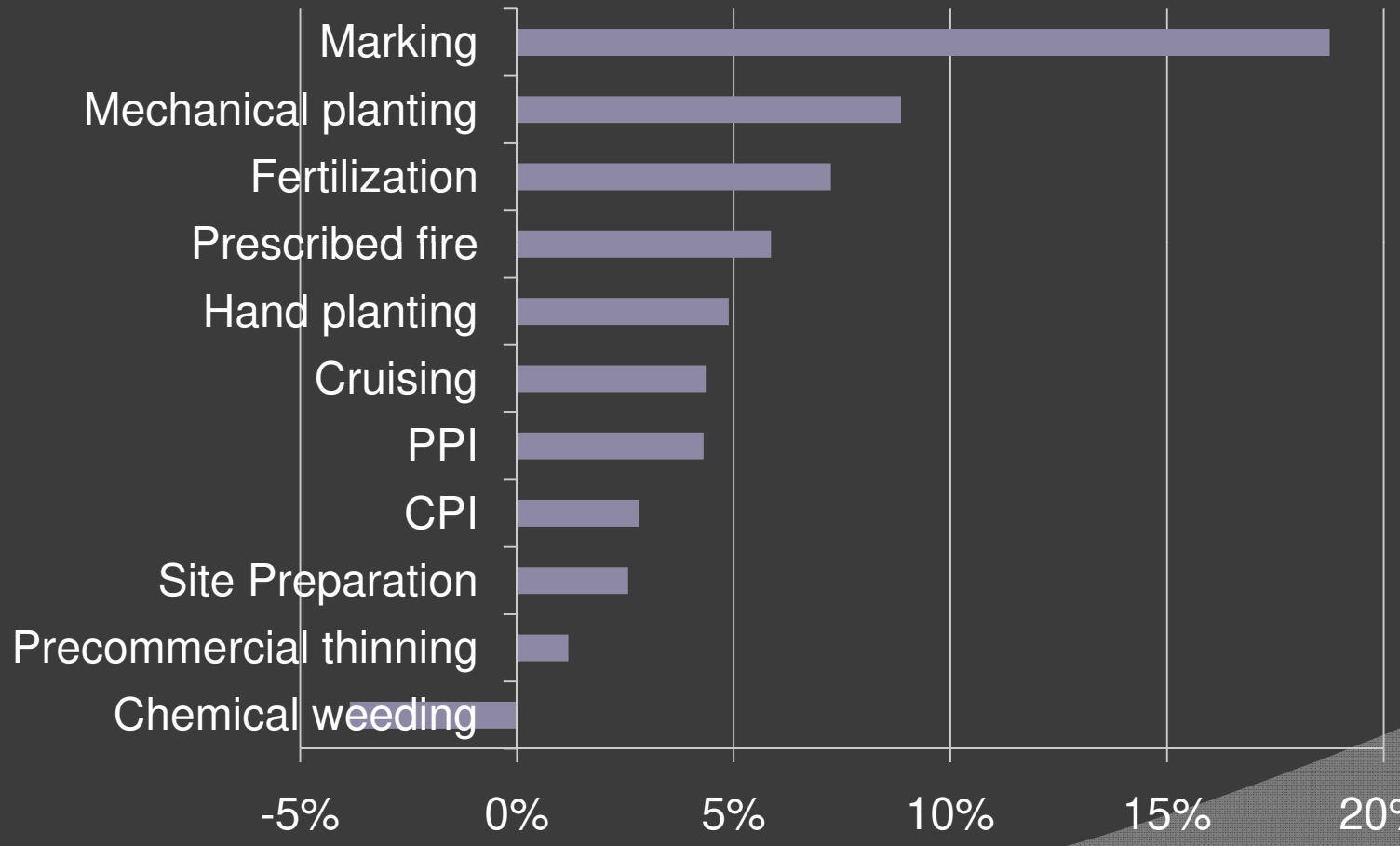
Long term annual price growth (1998)



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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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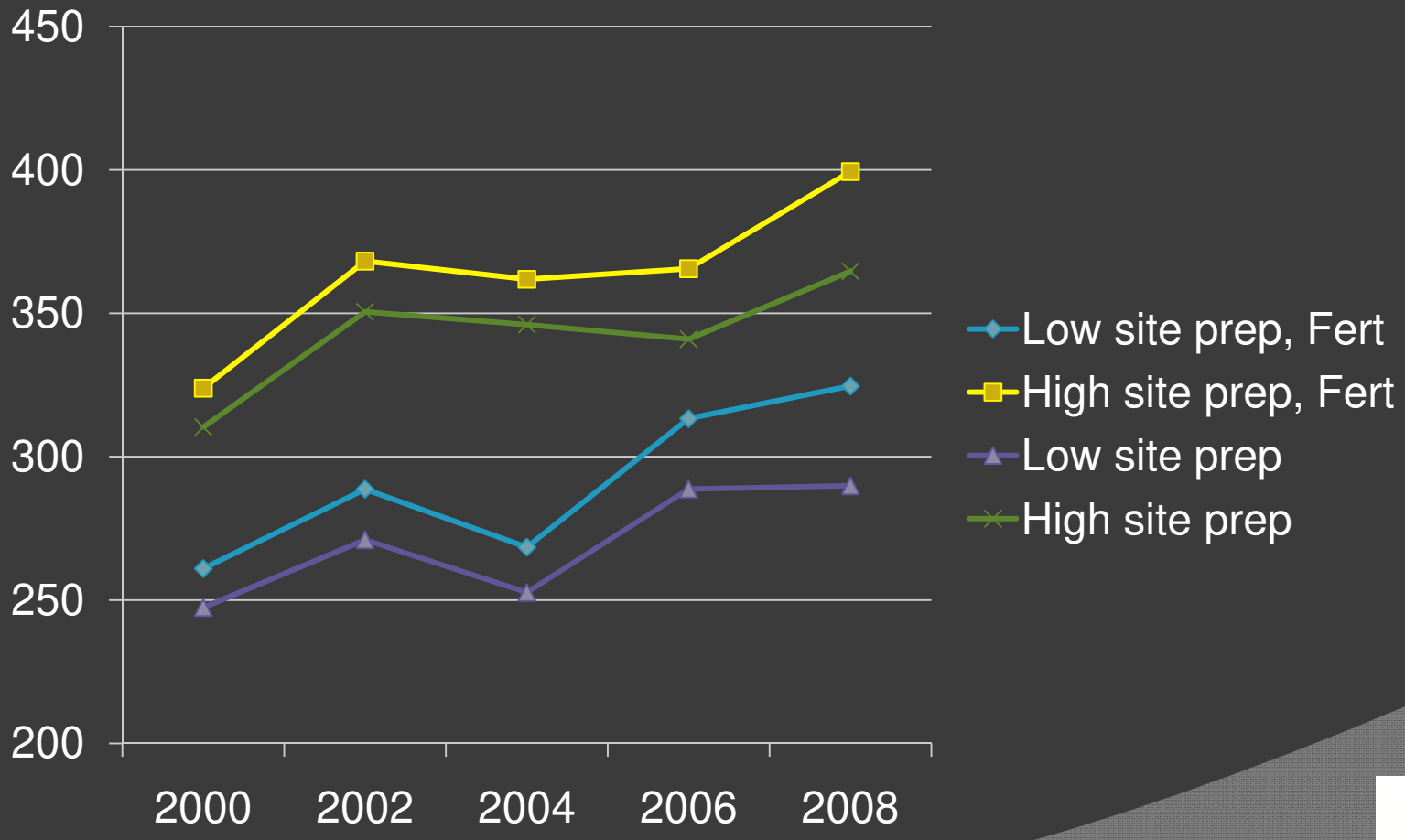
Present Value of Mgmt Costs



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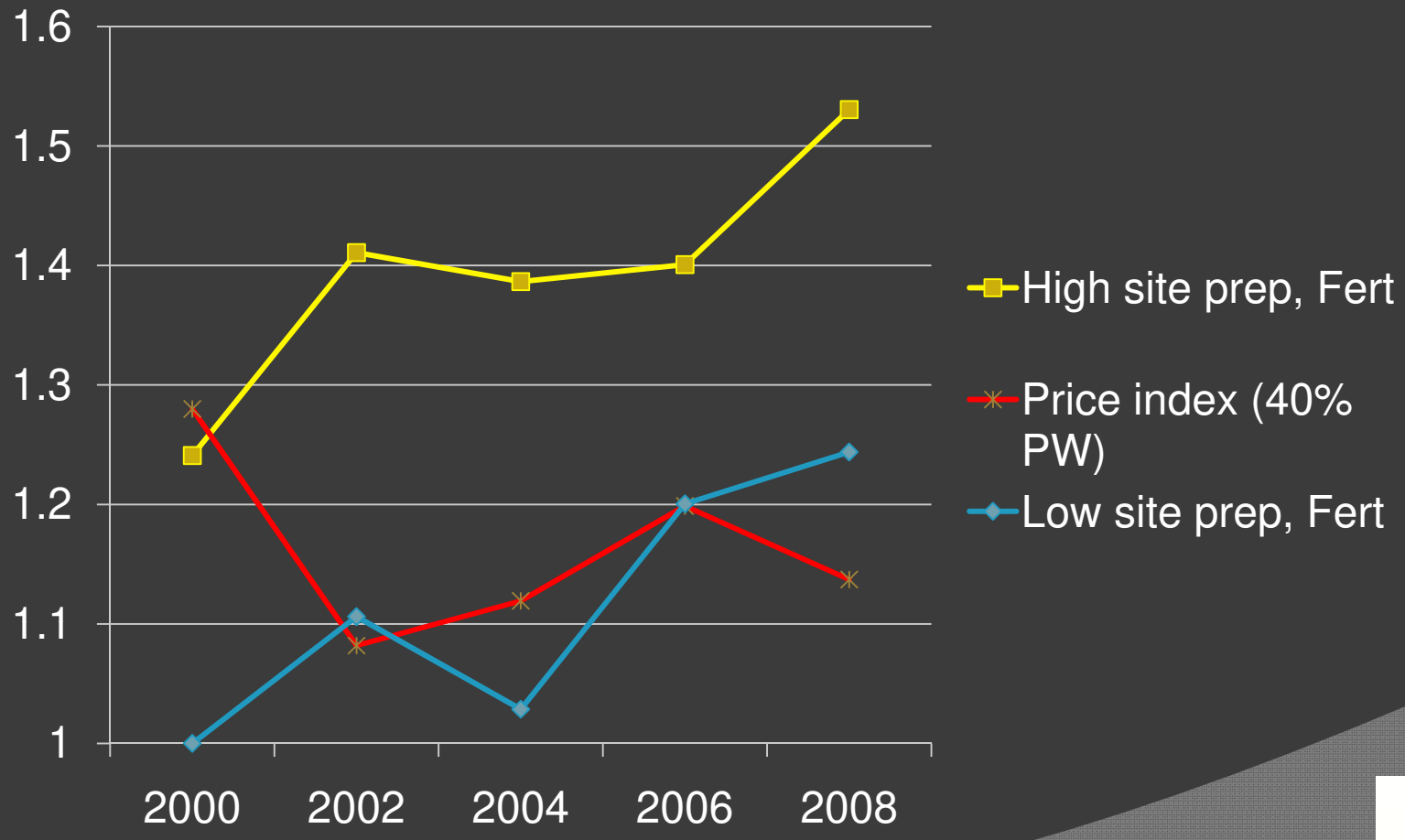
Revenue Multiplier to Breakeven with Lowest Cost, Fertilizer



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Revenue Multiplier to Breakeven with Lowest Cost, No Fertilizer

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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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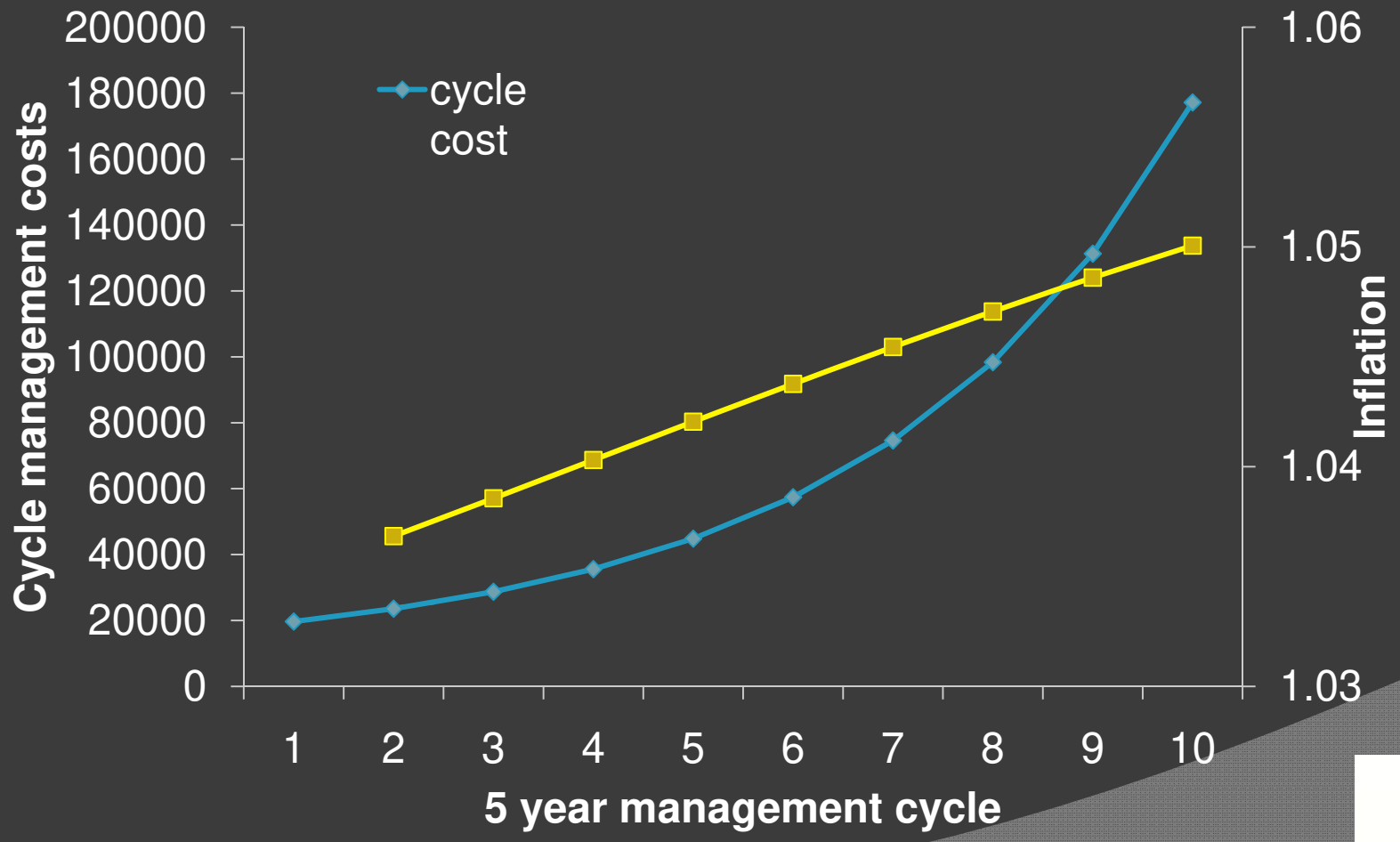
Changes in Cycle Mgmt Costs



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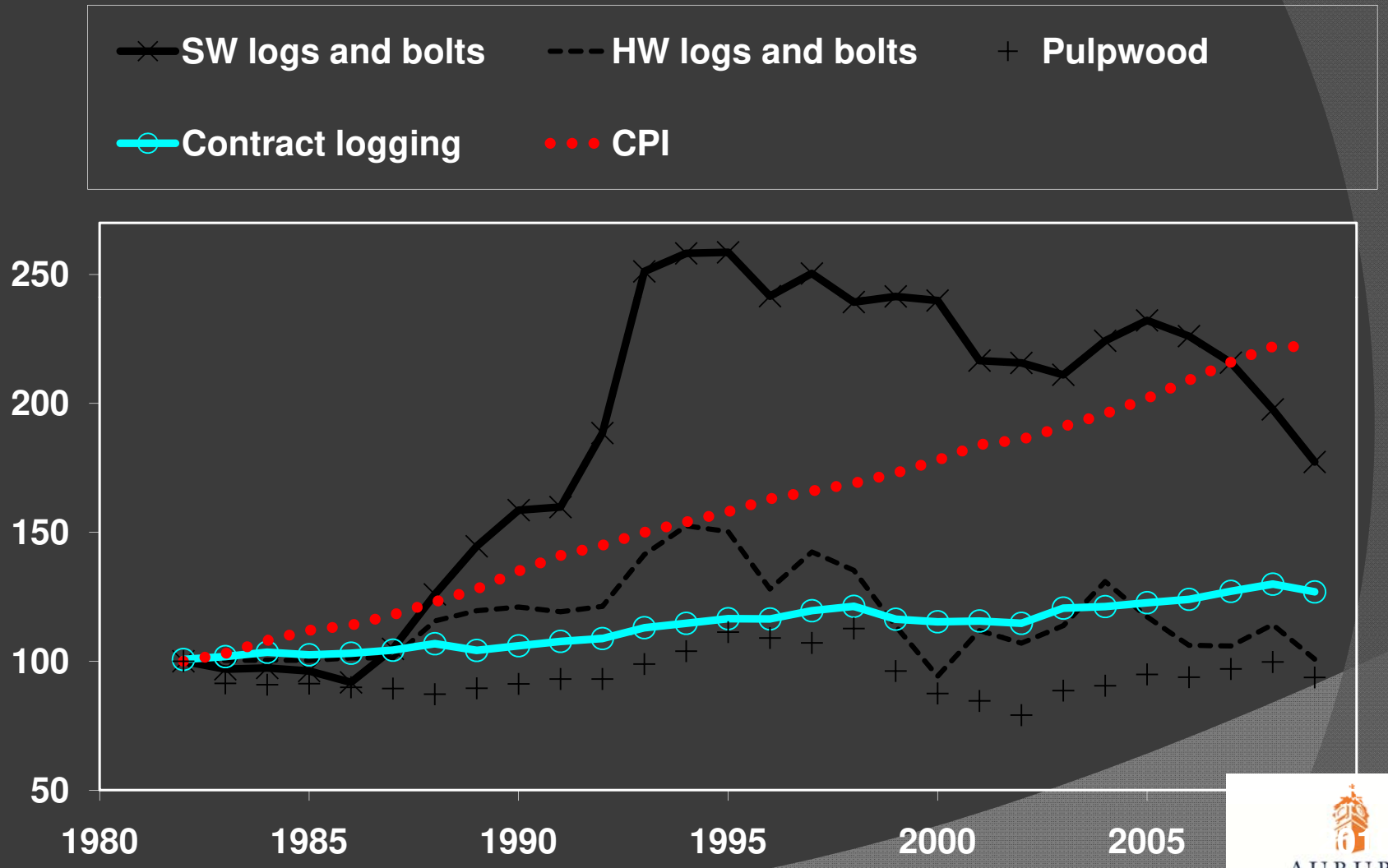
PPI - Price Indices



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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 Maganzine
  - 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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