

2007 Missouri Agricultural Use Values

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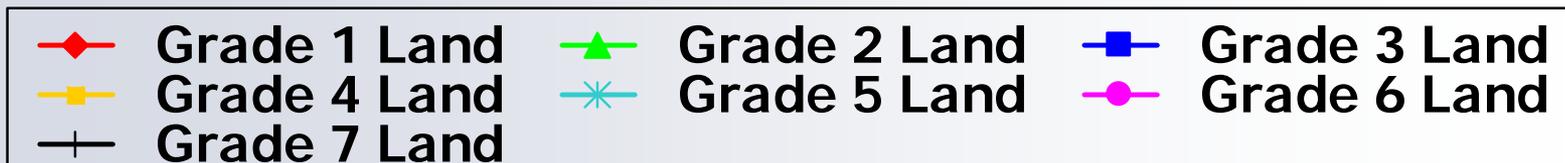
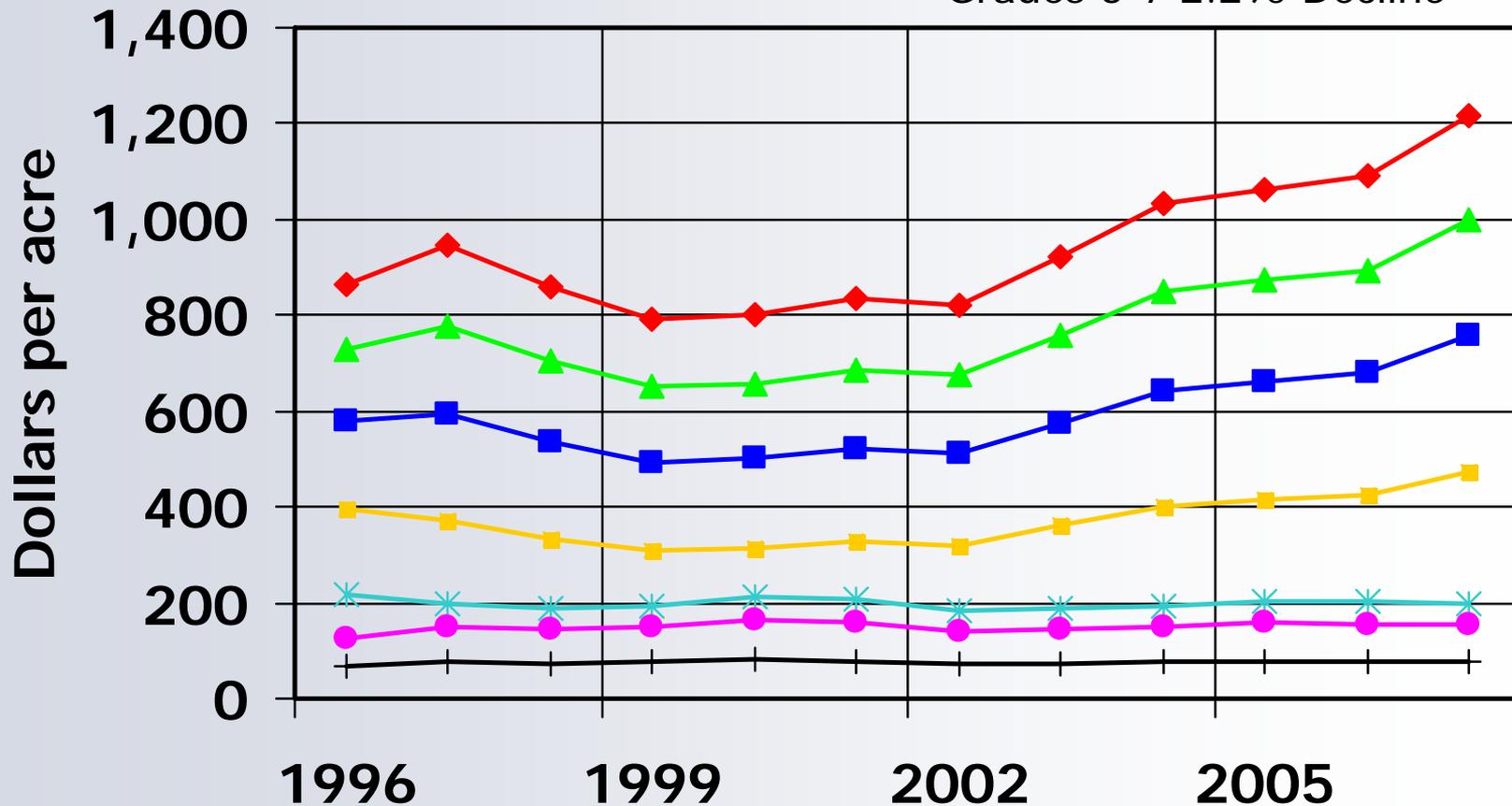
Testimony to the Missouri State Tax Commission
November 6, 2007

Agenda

- Research on a new formula
 - Many different ideas examined
 - Historically-based
 - Future-based
 - Thanks to all involved
- Economic data used in the formula
 - Grades 1-4
 - Grades 5-7
- Remaining issues

FAPRI-MU Land Use Values, By Grade

2007 Compared to 2005
 Grades 1-4 14.7% Increase
 Grades 5-7 2.2% Decline



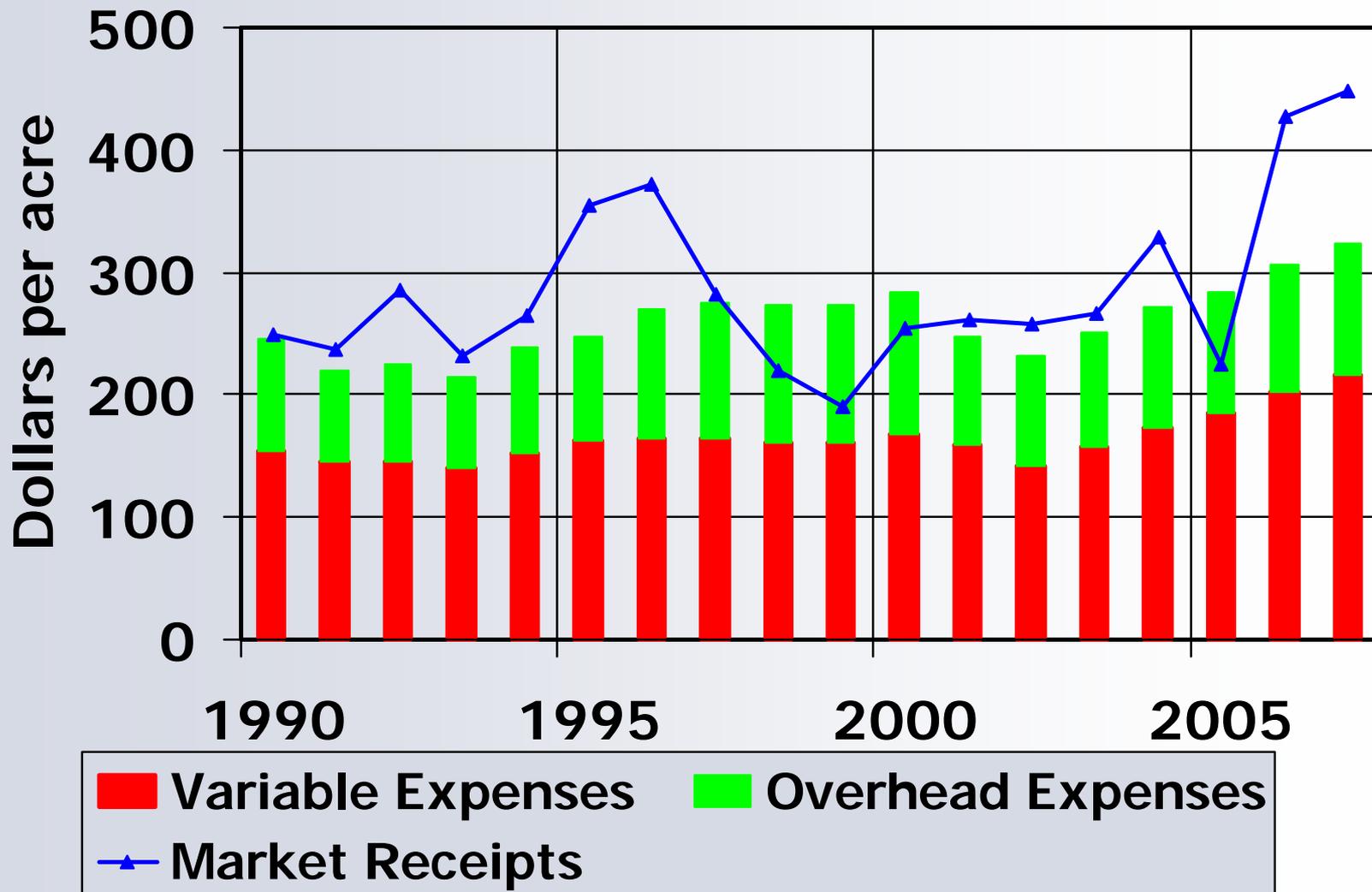
Recommendations

- Move to a net income per acre calculation instead of cash rents
- Include all government payments except ad hoc and disaster
- In calculating the 2007 use value include an estimate 2007/2008 crop year
- Move to an interest rate that is easier to update
- Move to a 10-year moving historical average to calculate crop grade use values (grades 1-4)
- Use a 15-year moving historical average for pasture-based grades (grades 5-7)
- No change in relationships between grades 1-4 and grades 5-7

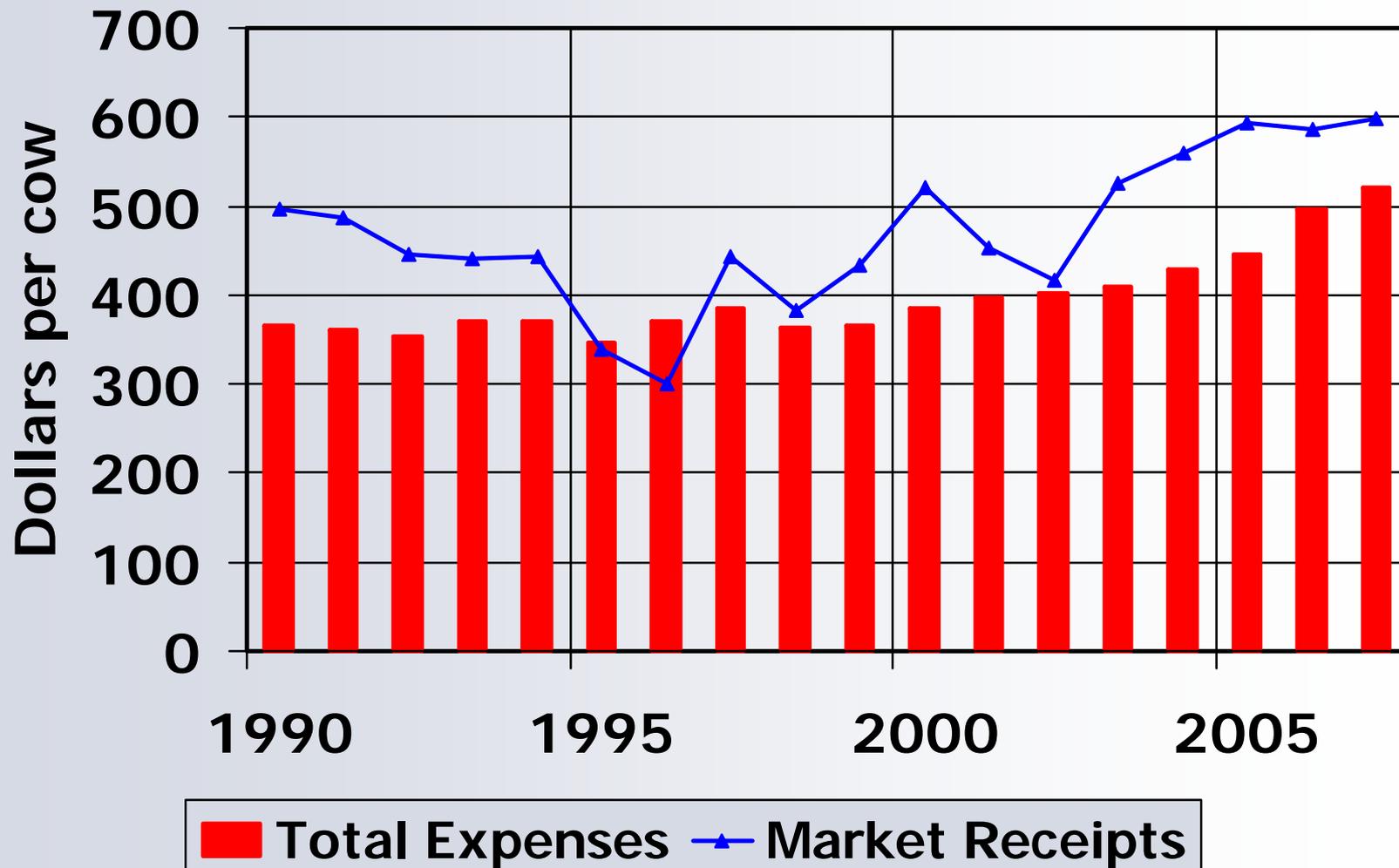
Theoretical Use Value

- Future stream of returns discounted to today's dollars
- Use Value = $\text{SUM}_{t = 1 \text{ to infinity}} (NR_t / (1 + r_t)^t)$
- If net return and discount rate are assumed constant, it collapses to $UV = NR/r$
- **THERE IS NO "RIGHT" FORMULA**

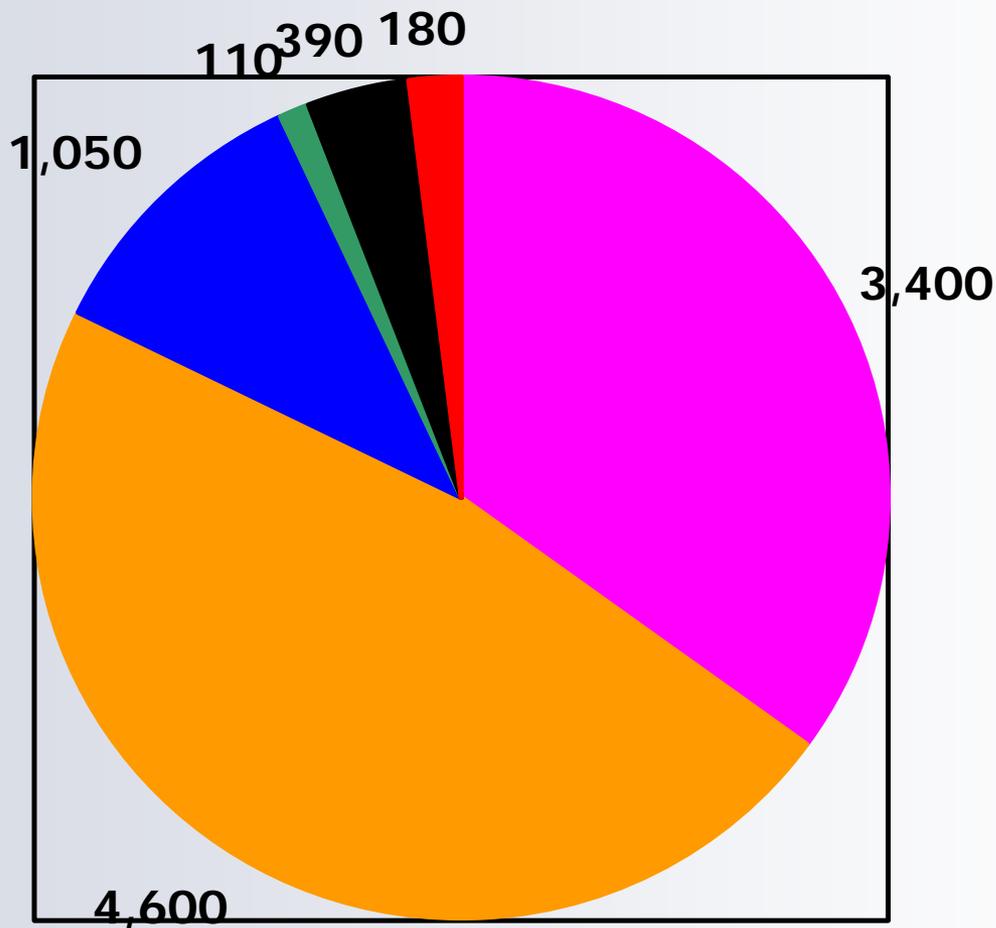
Corn Expenses Versus Market Receipts



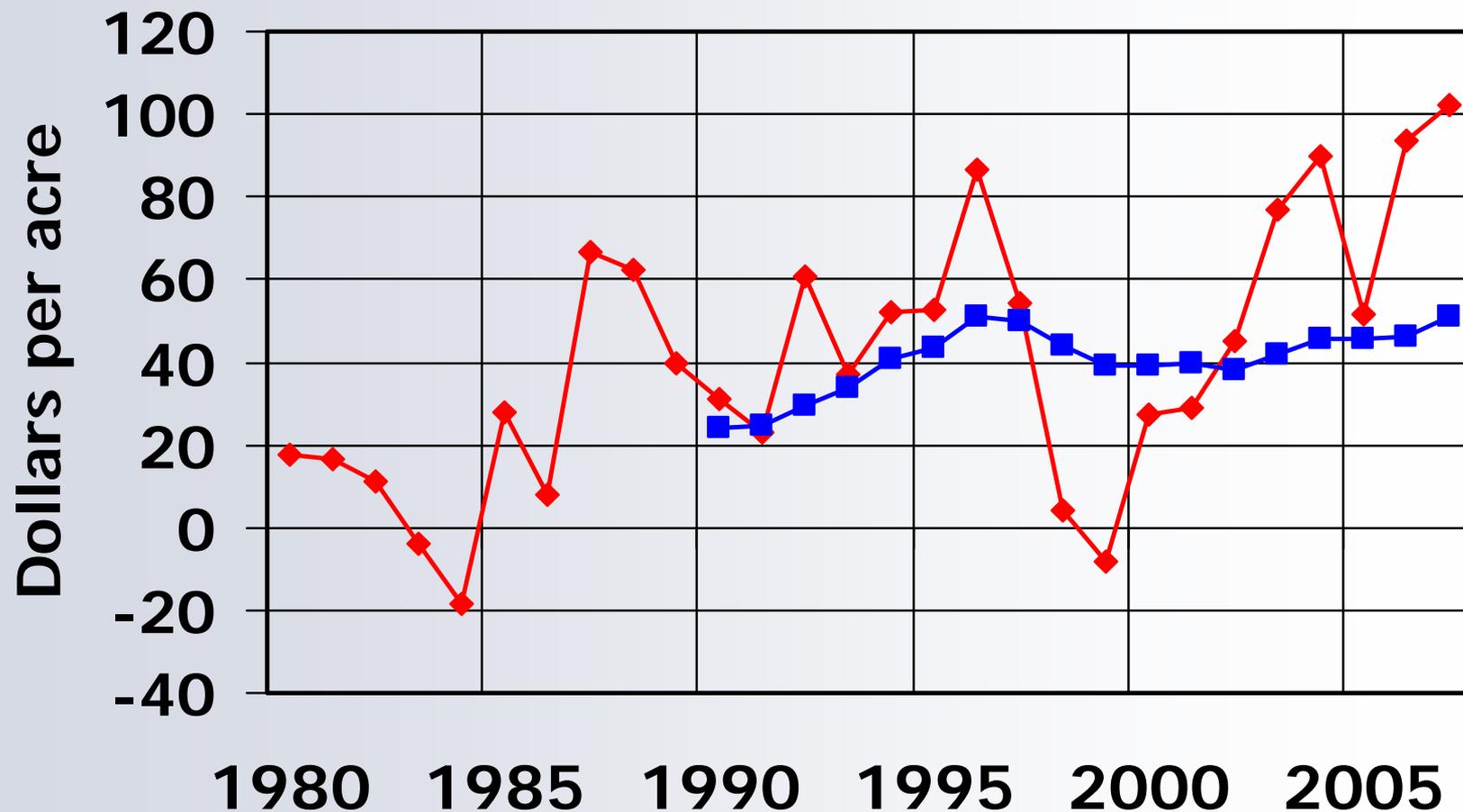
Beef Cow Expenses Versus Market Receipts



2007 Missouri Planted Acres (thousand acres)

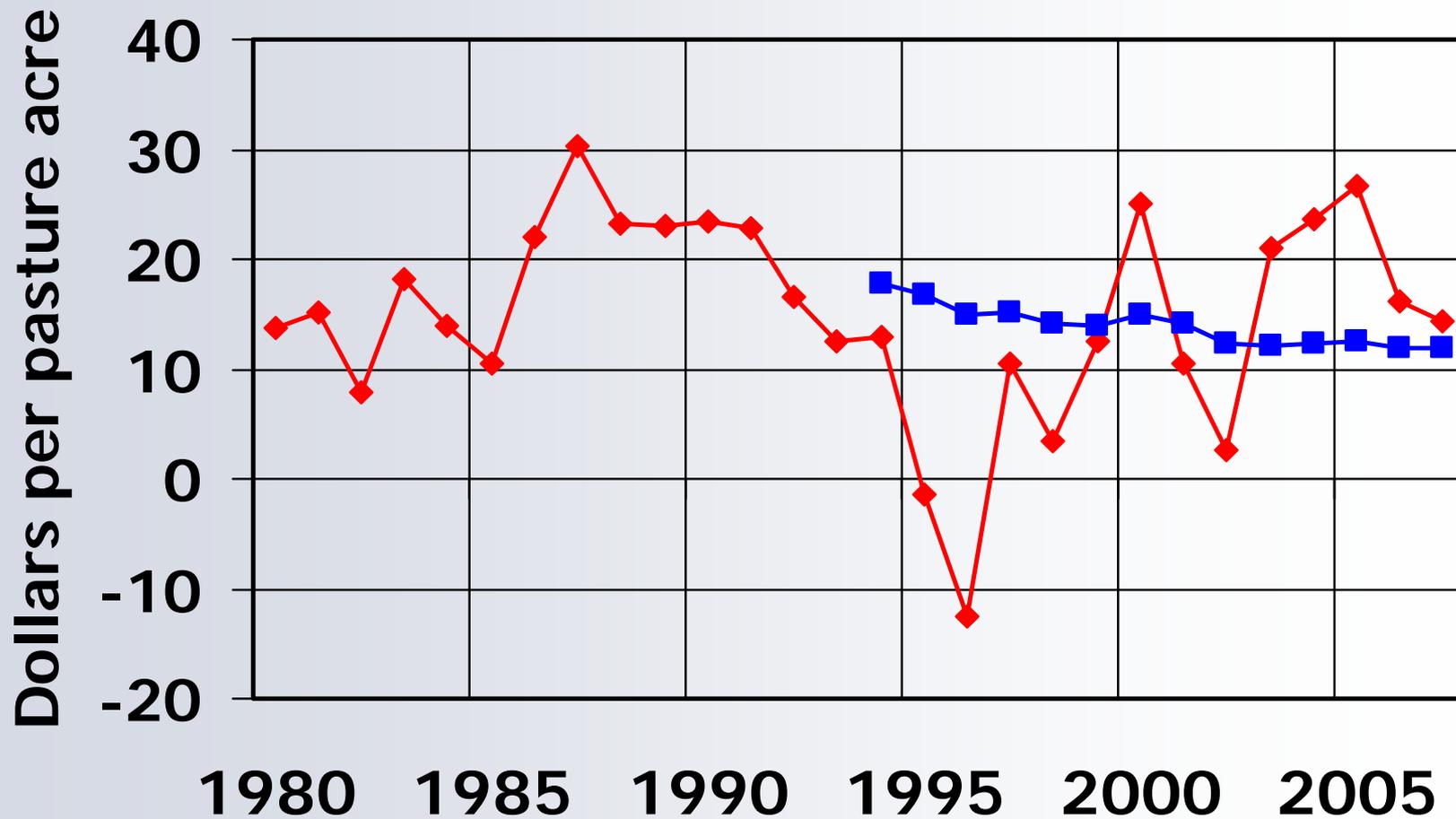


Weighted by Area Crop Returns



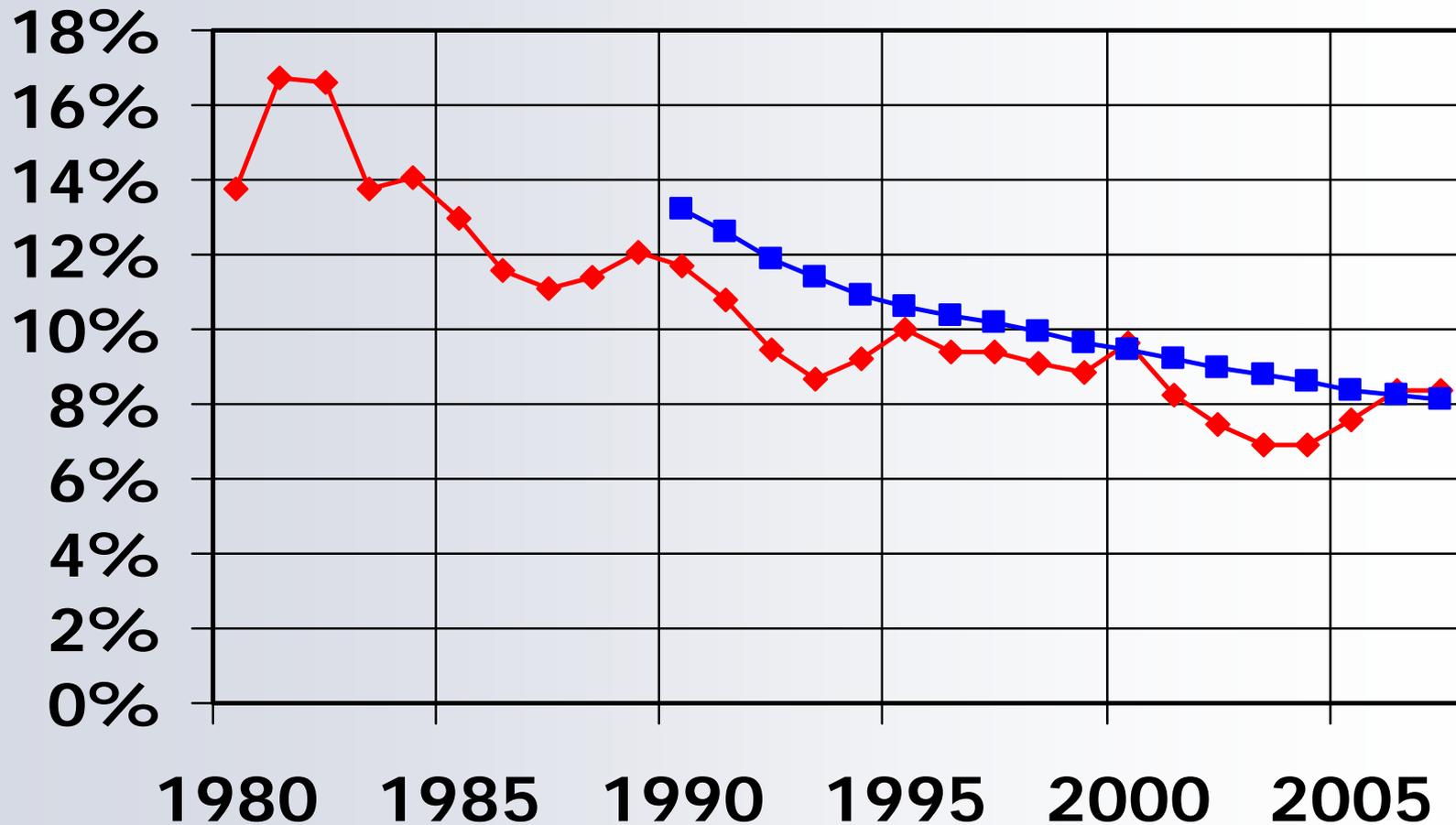
◆ Crop Returns ■ 10-year Moving Average

Cattle Returns



◆ Cattle Return ■ 15-year Moving Average

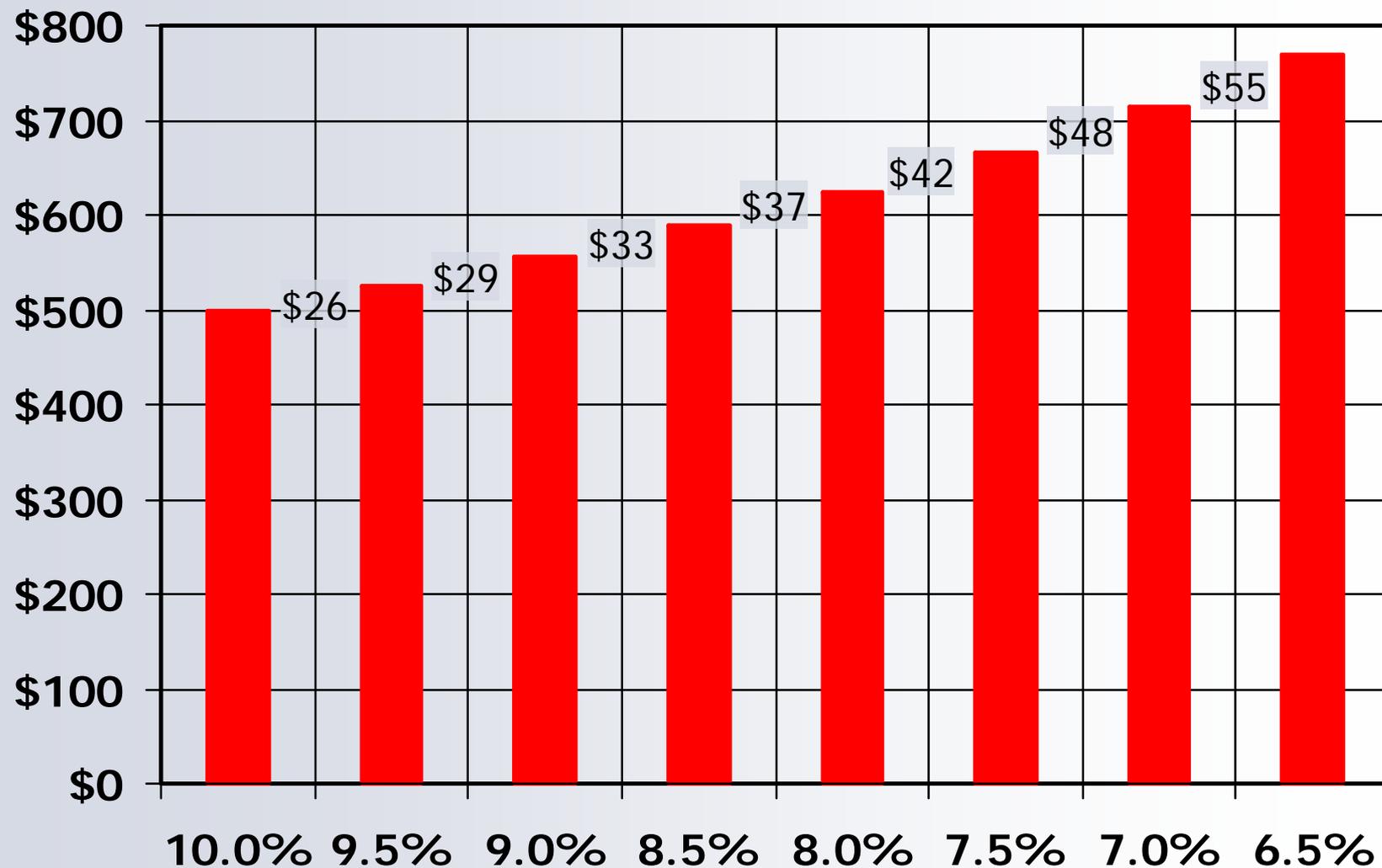
Agriculture Real Estate Loan Rate, 10th Fed. Reserve



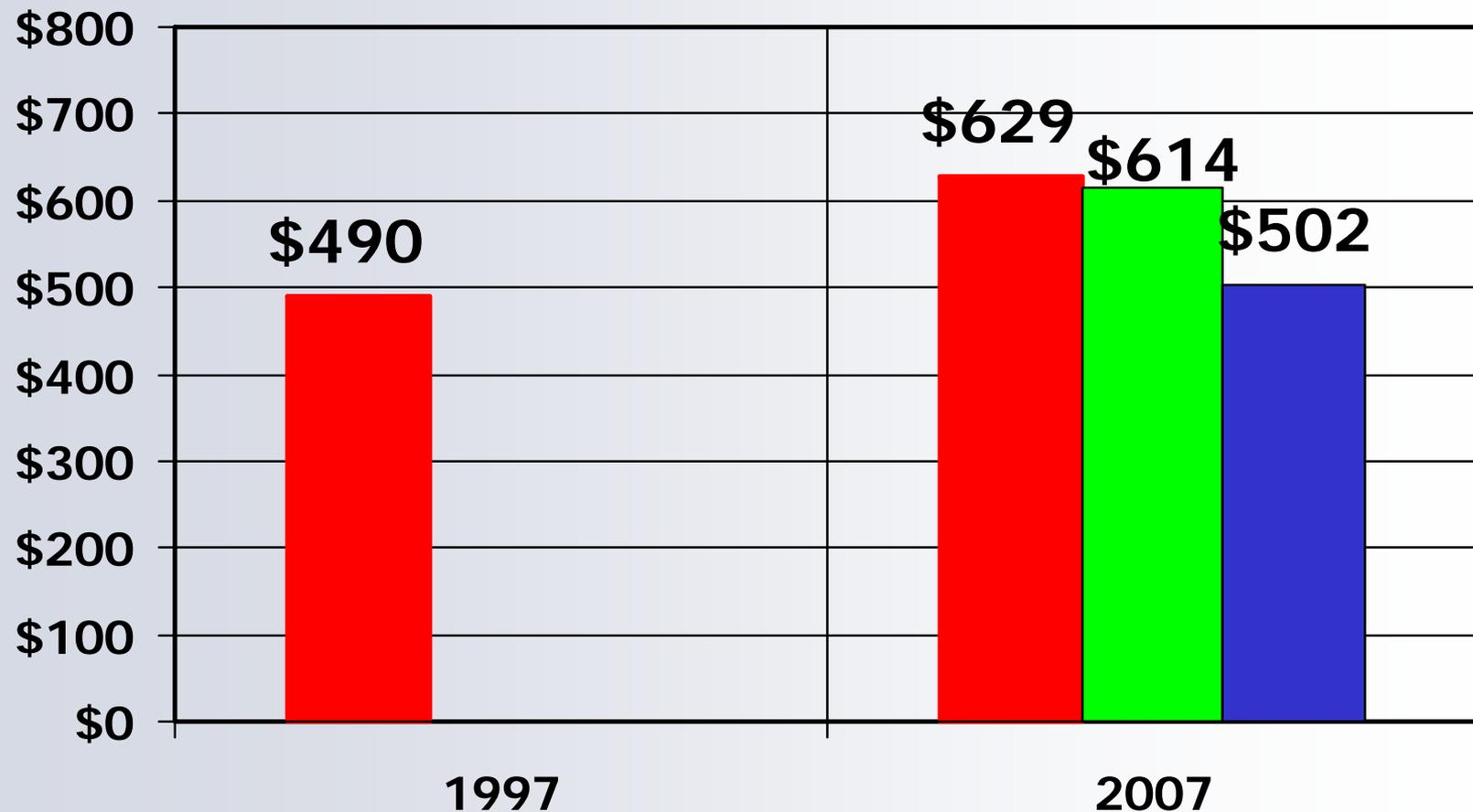
◆ Interest Rate ■ 10-year Moving Average

Interest Rates Are Important

Assume Crop Return is \$50



Growth in Weighted Average Grades 1-4, 1997 - 2007

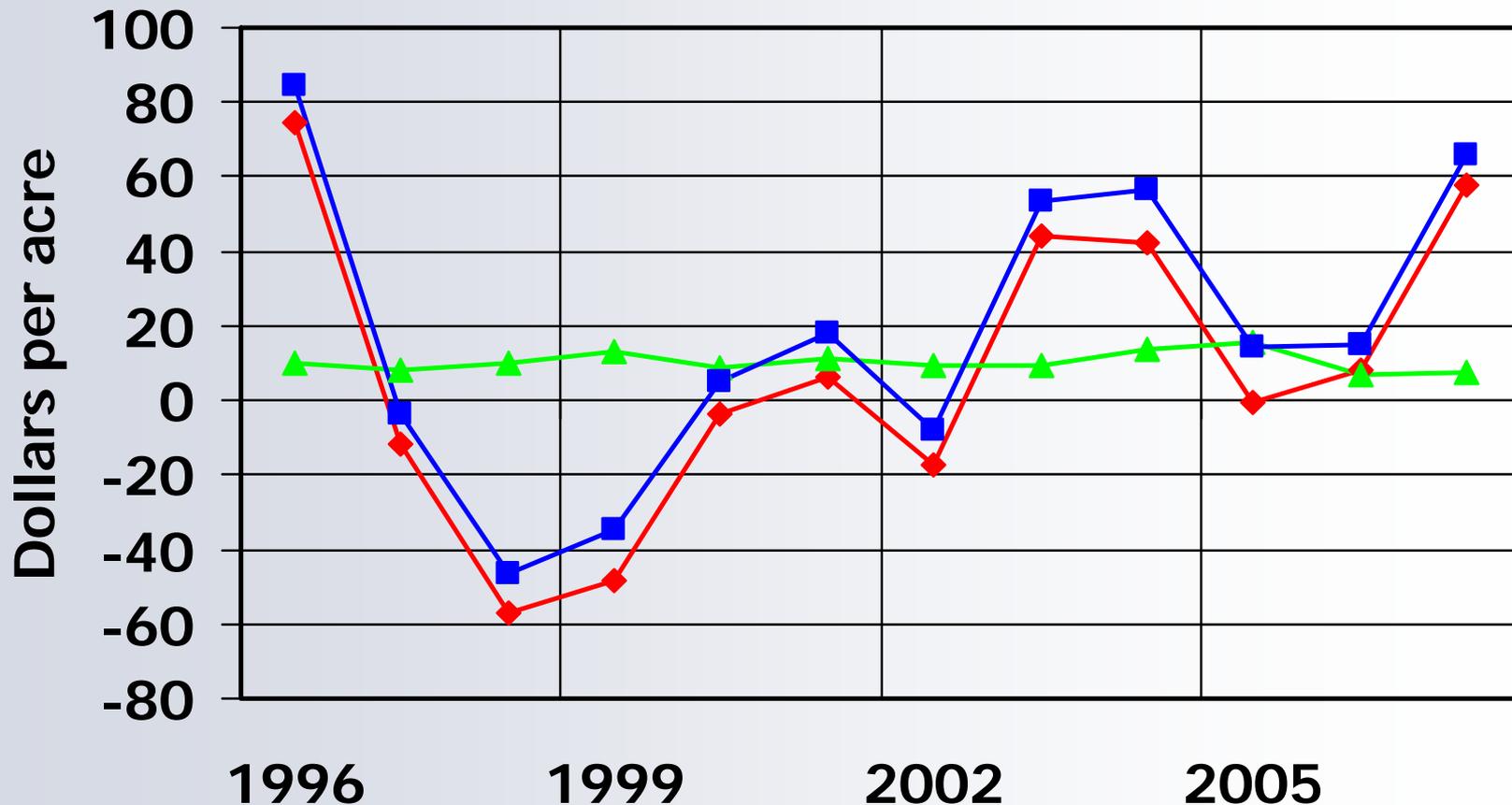


■ Estimated

■ Crop Returns Frozen at 1997

■ Interest Rates Frozen at 1997

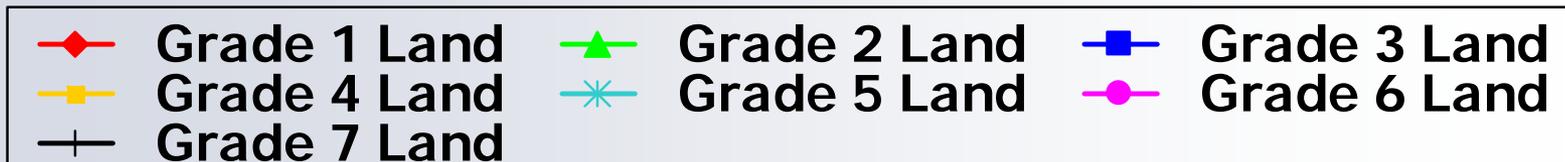
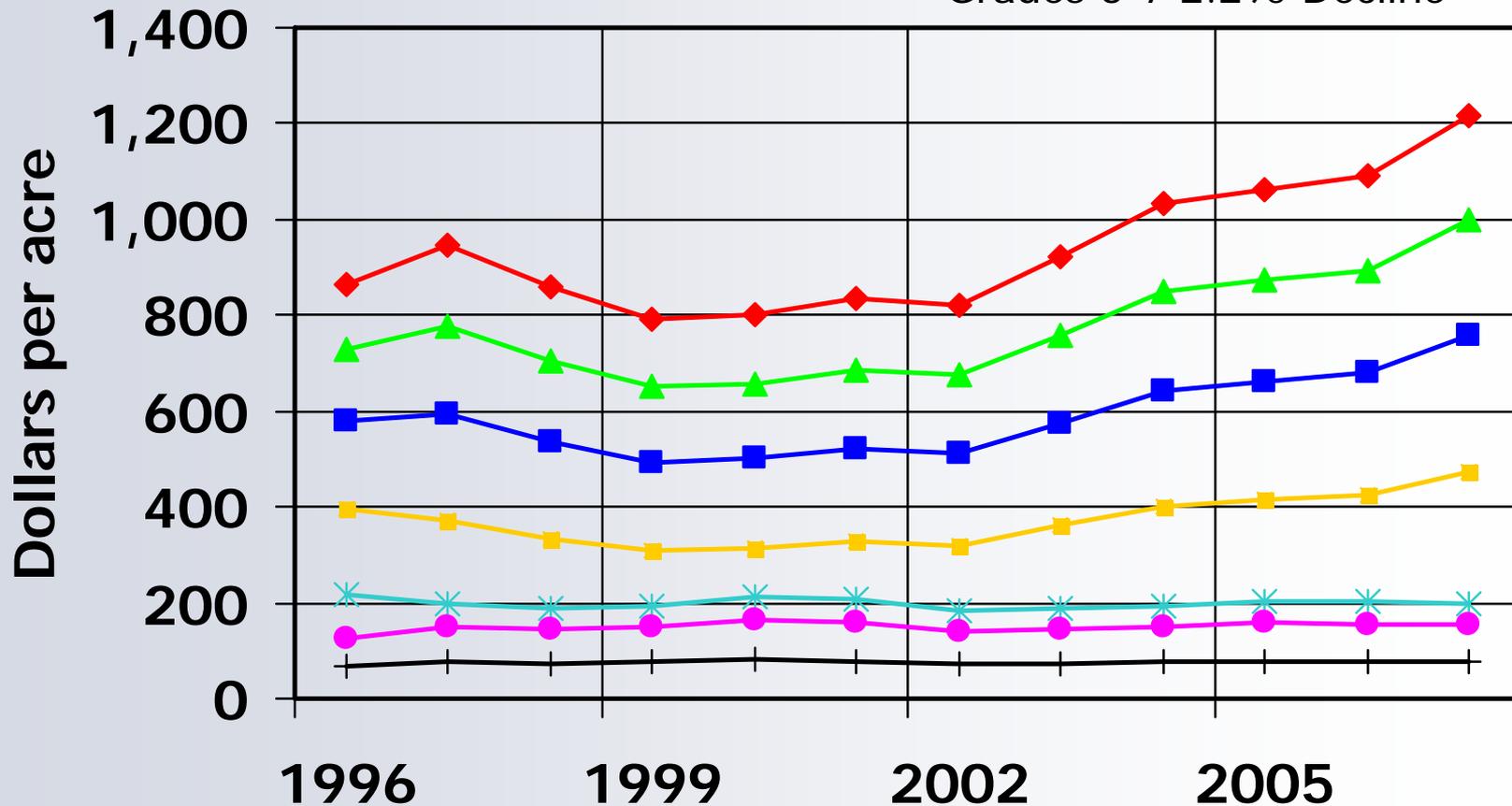
Change in Weighted Average Grades 1-4 Use Values



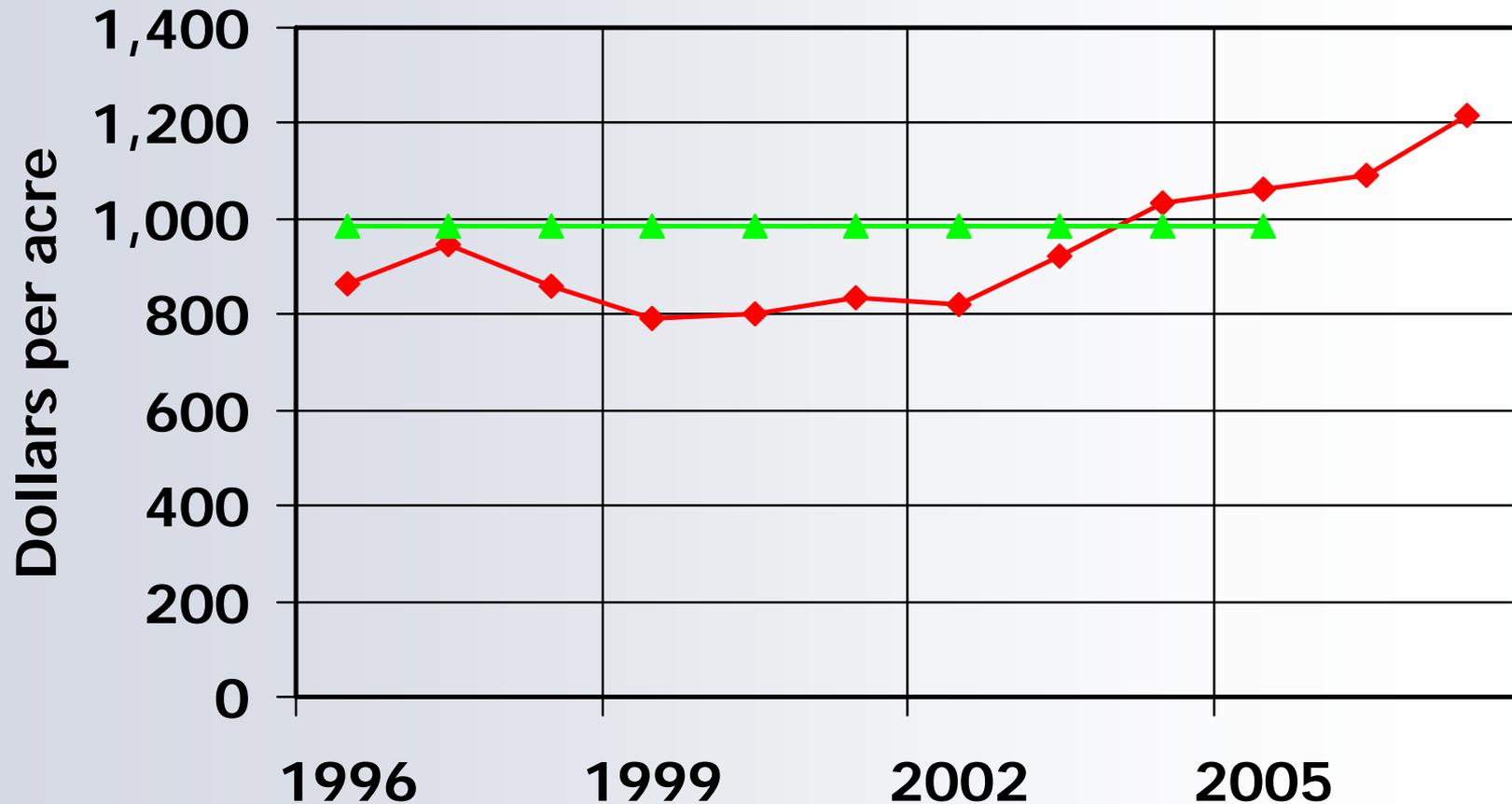
◆ Crop Returns ▲ Interest Rate ■ Total Change

FAPRI-MU Land Use Values, By Grade

2007 Compared to 2005
 Grades 1-4 14.7% Increase
 Grades 5-7 2.2% Decline



FAPRI-MU Versus State Tax Commission, Grade 1



◆ FAPRI-MU

▲ State Tax Commission

Missouri Agricultural Use Values

Missouri Agricultural Use Values

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Missouri Cropland Returns (\$ per Planted Acre)	(8.42)	27.49	29.21	44.90	76.98	89.64	51.71	93.54	102.20
Missouri Cattle Returns (\$ per Pasture Acre)	12.56	25.06	10.51	2.58	21.01	23.55	26.62	16.09	14.26
Ag. Real Estate Loan Rate, 10th Fed. Res. (%)	8.85	9.64	8.25	7.48	6.88	6.93	7.55	8.35	8.37
Historical Use Values, State Tax Commission	(Dollars per Acre)								
Grade 1 Land	985		985		985		985		
Grade 2 Land	810		810		810		810		
Grade 3 Land	615		615		615		615		
Grade 4 Land	385		385		385		385		
Grade 5 Land	195		195		195		195		
Grade 6 Land	150		150		150		150		
Grade 7 Land	75		75		75		75		
Calculated Use Values, FAPRI-MU									
Grade 1 Land	790	800	835	819	923	1,032	1,060	1,089	1,216
Grade 2 Land	650	658	687	674	759	848	872	895	1,000
Grade 3 Land	493	500	521	511	576	644	662	680	759
Grade 4 Land	309	313	326	320	361	403	414	426	475
Grade 5 Land	195	213	206	184	188	195	205	201	200
Grade 6 Land	150	164	159	142	144	150	157	155	154
Grade 7 Land	75	82	79	71	72	75	79	77	77

Summary

- Current moving average returns suggest increases in grades 1-4 and a decline in grades 5-7
- These recommendations are based on historical data, no guarantee that matches the future
- Interest rates remain a key driver in the long run calculation of agricultural use values
- Questions?