





Roadmap

- ▣ Previous Research
- ▣ Methodology/Tests
- ▣ Results
- ▣ 2014
- ▣ Ideas for further research
- ▣ Sources

Previous findings:

- Based on poll data from 1994-2008, Scott Albrecht used regression to see how various factors can estimate the final rankings
- Findings:
 - Eg, using win-loss record and strength of schedule, he got an R^2 of .728
 - All-time W/L has no bearing on rankings. However, being in a BCS conference will give a winning team a bump of ~5 spots
 - Preseason polls: $P > |t|$ below .05
 - Estimates that if two teams are ranked 20 spots away from each other in the preseason, and they play identical schedules with identical outcomes, the higher ranked team will only be ahead by one spot

Penultimate Rankings

- Penultimate rankings dictate bowls
 - Bowls = \$
 - Bowls = Prestige
 - In a bowl, top teams can actually play it out. So after a bowl season, significantly more information than any other week
- Final rankings buck general week-to-week ranking trends
 - E.g., far tumble after a loss
 - Many more “top” teams are playing against each other
- Rare for final ranking to deviate too far from penultimate ranking anyway

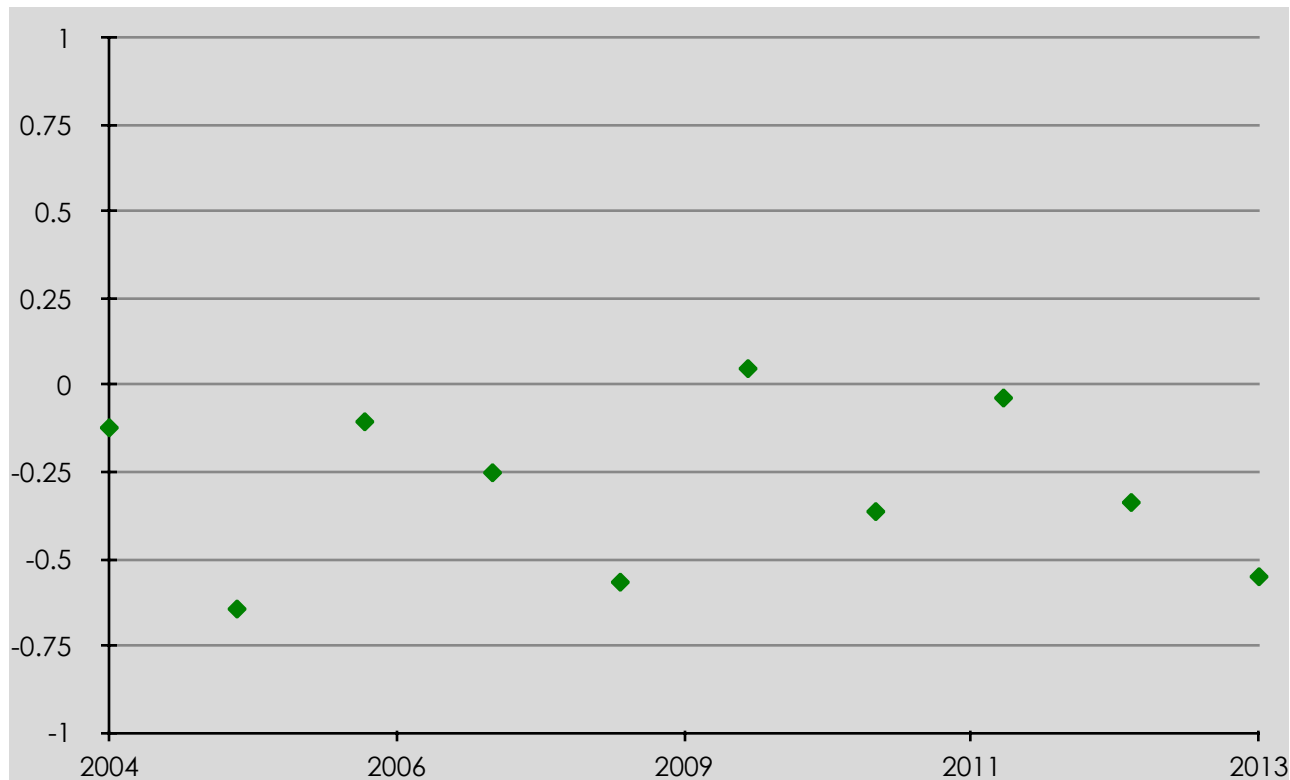
Analyses

- Spearman's Rank Correlation Coefficient
- Number of preseason unranked in penultimate poll
- Median penultimate rank given preseason rank
- Statistical significance in rankings and losses
- Preseason Rank of highest ranked team with X losses
- Bowl performance

Spearman's Rank Correlation Coefficient

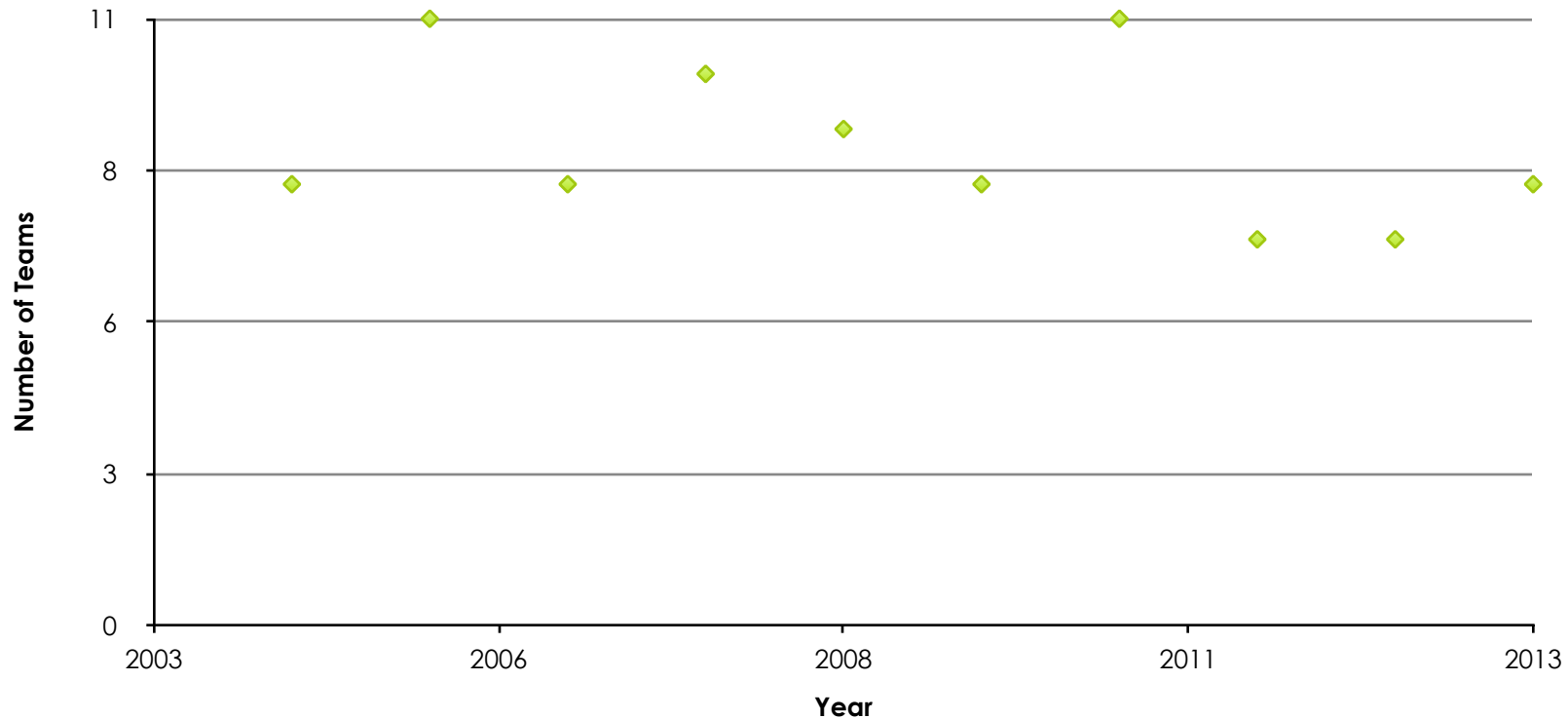
$$r_s = 1 - \frac{6 \sum_{i=1}^n D_i^2}{n(n^2 - 1)}$$

Average: `-.2932692`



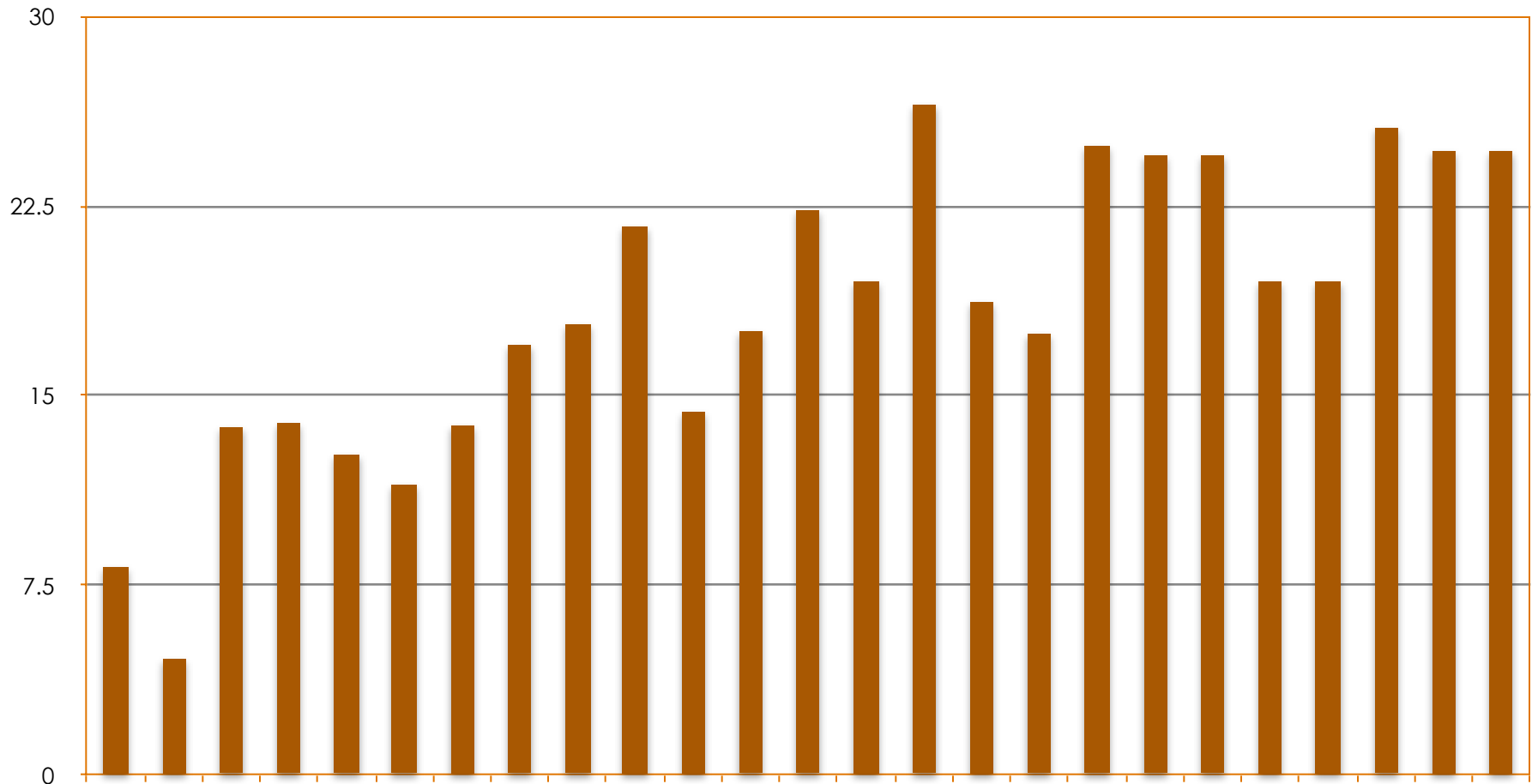
Turnover

Preseason Unranked teams in Penultimate Poll



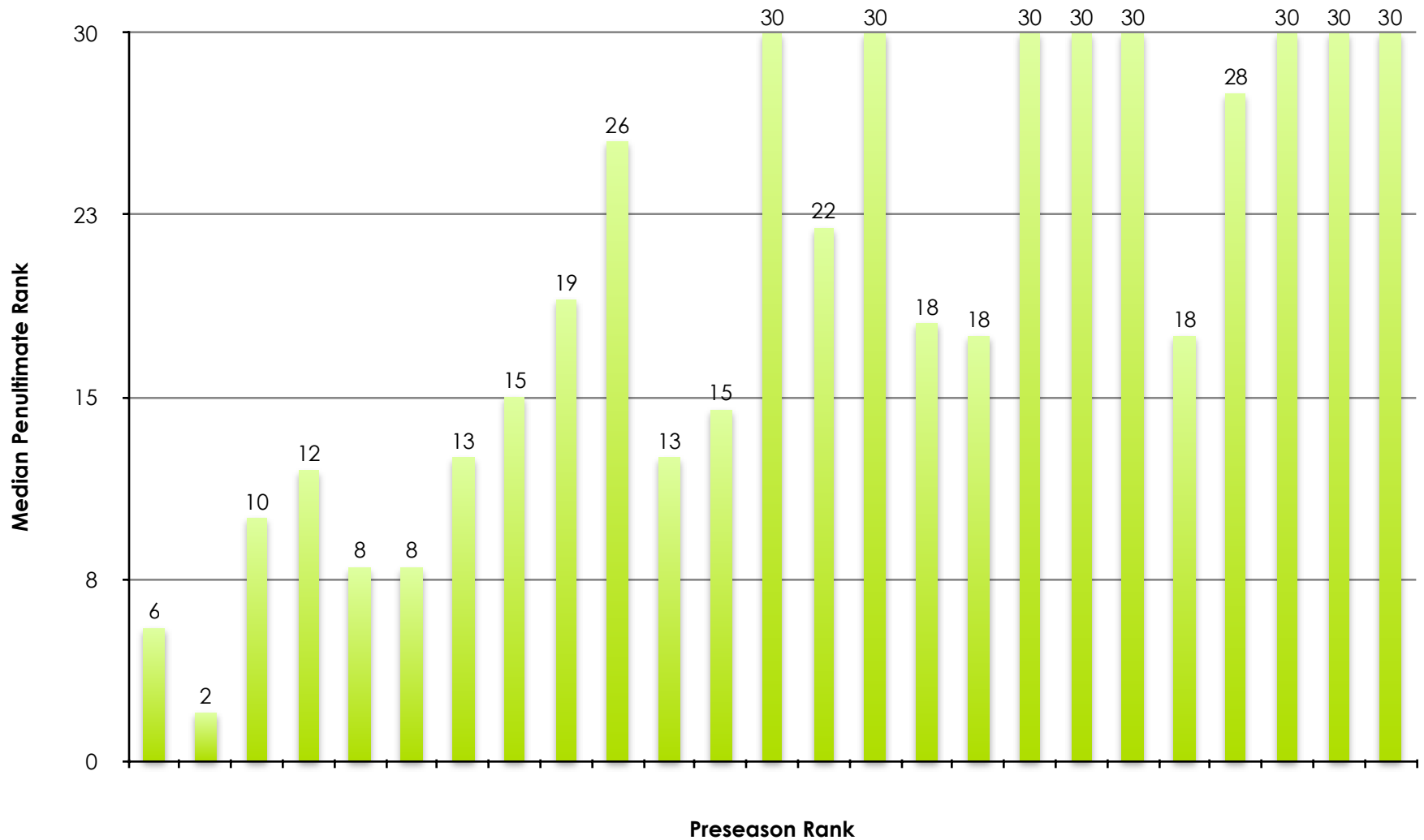
Expected Finish Given Preseason Rank

Average Finish



Expected finish given preseason rank

Median Finish



Statistical Significance from #1

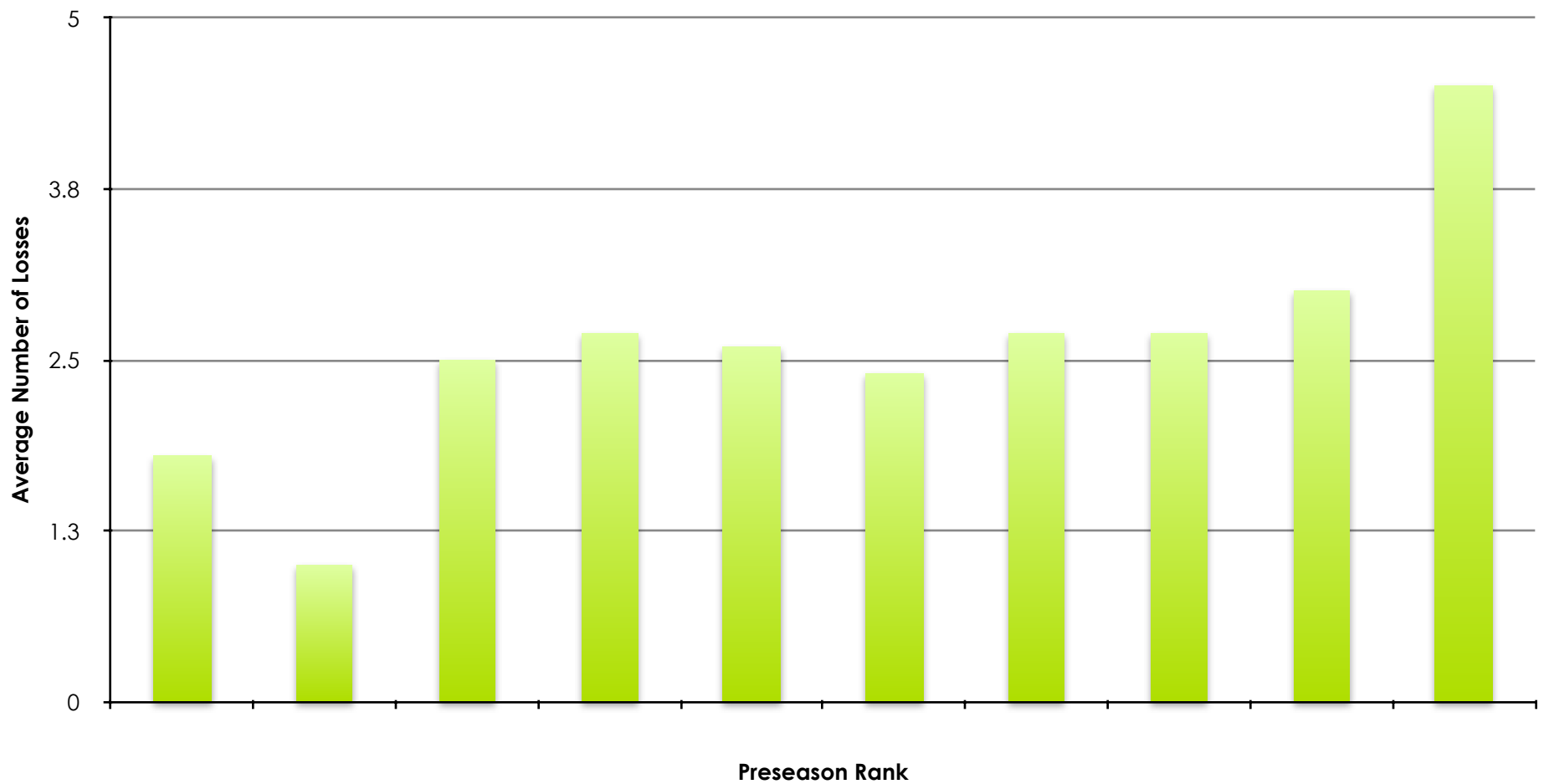
Rank	Median Finish	Average	StD	SD of difference	tstat	df num	diff	df dem1	df dem2	cv	Is Penultimate rank statistically significant (at $\alpha=1$) from #1?
1	5.5	8.2	6.838128399	2.162406067	0	9.150625	0	5.023575111	1.016736111	12.70620474	no
2	8	4.6	3.440930107	1.711724277	1.460515595	22.20765625	2.5	5.023575111	4.551111111	4.30265273	no
3	15.5	13.7	3.70599177	1.739171858	5.749863049	182.925625	10	5.023575111	64.13340278	2.91998558	yes
4	17	13.9	7.261843774	2.230407754	5.1560079	254.8014063	11.5	5.023575111	92.80111111	2.91998558	yes
5	11.5	12.66666667	3.337497399	1.701453627	3.526396433	66.015625	6	5.023575111	19.43340278	2.91998558	yes
6	14	11.5	3.16227766	1.684636459	5.04559898	127.9726563	8.5	5.023575111	42.68444444	2.91998558	yes
7	18	13.8	5.559998224	1.970705207	6.342907075	313.7326563	12.5	5.023575111	116.64	2.91998558	yes
8	18	17	5.57692037	1.973094534	6.335226105	313.7326563	12.5	5.023575111	116.64	2.91998558	yes
9	17	17.8	8.141603914	2.37745362	4.837108032	254.8014063	11.5	5.023575111	92.80111111	2.91998558	yes
10	17.5	21.7	3.201562119	1.688342382	7.10756309	283.080625	12	5.023575111	104.2100694	2.91998558	yes
11	15	14.4	7.690439334	2.301117741	4.128428473	162.8814063	9.5	5.023575111	56.25	2.91998558	yes
12	15	17.5	4.336537277	1.810601496	5.246875152	162.8814063	9.5	5.023575111	56.25	2.91998558	yes
13	16.5	22.3	4.60298816	1.843196951	5.967891817	228.765625	11	5.023575111	82.355625	2.91998558	yes
14	16	19.55555556	5.402545696	1.948685454	5.388247742	204.8476563	10.5	5.023575111	72.81777778	2.91998558	yes
15	18.5	26.5	3.5	1.717701953	7.568251277	346.890625	13	5.023575111	130.1500694	2.91998558	yes
16	15	18.72727273	7.431165603	2.258121146	4.207037349	162.8814063	9.5	5.023575111	56.25	2.91998558	yes
17	14	17.4	4.516635916	1.832484652	4.638510882	127.9726563	8.5	5.023575111	42.68444444	2.91998558	yes
18	17	24.88888889	8	2.353295562	4.886763987	254.8014063	11.5	5.023575111	92.80111111	2.91998558	yes
19	17	24.45454545	10.07747764	2.723192571	4.222984494	254.8014063	11.5	5.023575111	92.80111111	2.91998558	yes
20	16	24.5	5	1.894201679	5.543232338	204.8476563	10.5	5.023575111	72.81777778	2.91998558	yes
21	21.5	19.5	3.53160335	1.720933209	9.297281215	606.390625	16	5.023575111	237.4167361	2.91998558	yes
22	12.5	19.5	3.53160335	1.720933209	4.067560532	86.955625	7	5.023575111	27.12673611	2.91998558	yes
23	23	25.6	3.858612301	1.755689165	9.96759583	781.9014063	17.5	5.023575111	310.9344444	2.91998558	yes
24	30	24.7	9.428090416	2.604312663	9.407472594	2163.412656	24.5	5.023575111	900	2.91998558	yes

Statistical Significance from #10

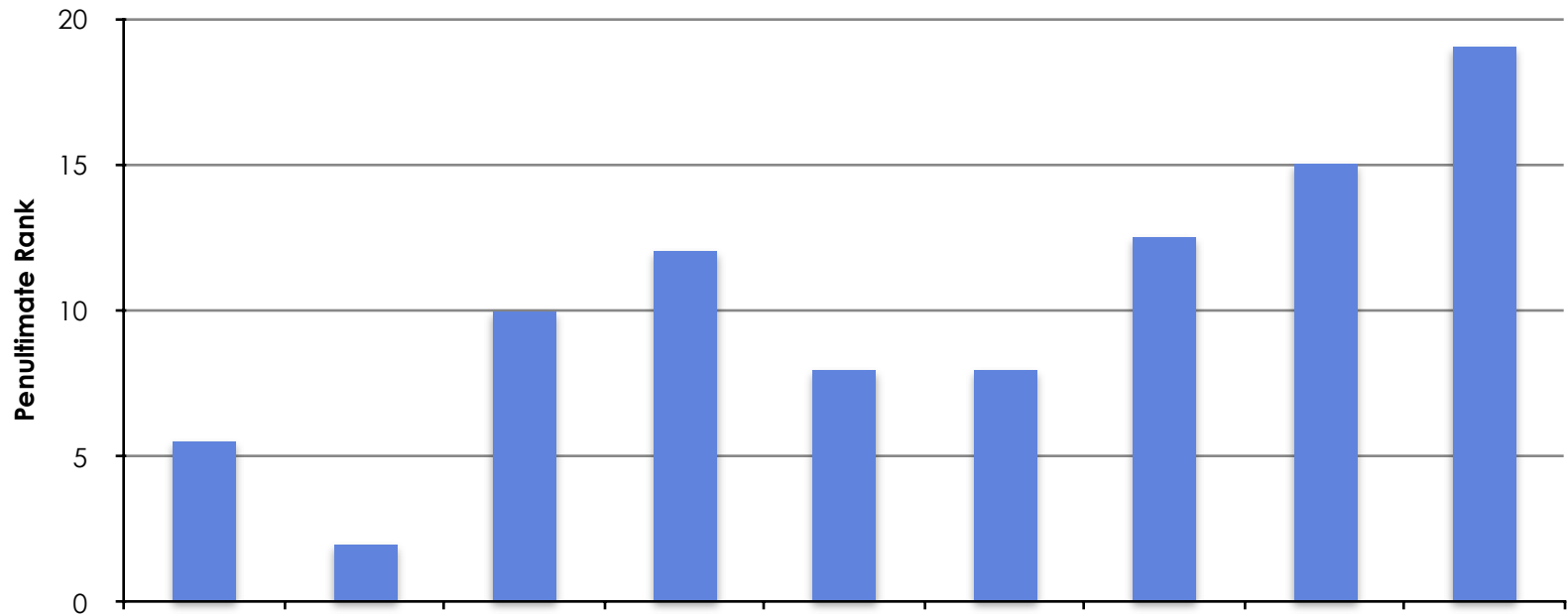
Rank	Median Finish	Average	StD	SD of difference	tstat	df num	diff	df dem1	df dem2	cv	Is Penultimate rank statistically significant (at $\alpha=1$) from #1?	
1	5.5	8.2	6.838128399	1.688342382	-7.10756309	7.10756309	9.150625	0	246.3748801	1.016736111	6.313751515	yes
2	8	4.6	3.440930107	1.050951949	-9.039423739	9.039423739	342.7126563	-9.5	246.3748801	4.551111111	6.313751515	yes
3	15.5	13.7	3.70599177	1.095088467	-1.826336466	1.826336466	746.655625	10	246.3748801	64.13340278	2.91998558	no
4	17	13.9	7.261843774	1.774603829	-0.281753027	0.281753027	885.8064063	11.5	246.3748801	92.80111111	2.91998558	no
5	11.5	12.66666667	3.337497399	1.03413947	-5.801925341	5.801925341	480.705625	6	246.3748801	19.43340278	6.313751515	no
6	14	11.5	3.16227766	1.00623059	-3.478327965	3.478327965	630.6376563	8.5	246.3748801	42.68444444	2.91998558	yes
7	18	13.8	5.559998224	1.434635498	0.348520583	0.348520583	993.0376563	12.5	246.3748801	116.64	2.91998558	no
8	18	17	5.57692037	1.437915867	0.34772549	0.34772549	993.0376563	12.5	246.3748801	116.64	2.91998558	no
9	17	17.8	8.141603914	1.956217195	-0.25559534	0.25559534	885.8064063	11.5	246.3748801	92.80111111	2.91998558	no
10	17.5	21.7	3.201562119	1.012422837	0	0	937.890625	12	246.3748801	104.2100694	2.91998558	no
11	15	14.4	7.690439334	1.862697736	-1.342139388	1.342139388	705.5664063	9.5	246.3748801	56.25	2.91998558	no
12	15	17.5	4.336537277	1.205312315	-2.074151212	2.074151212	705.5664063	9.5	246.3748801	56.25	2.91998558	no
13	16.5	22.3	4.60298816	1.253744392	-0.797610746	0.797610746	836.655625	11	246.3748801	82.355625	2.91998558	no
14	16	19.55555556	5.402545696	1.404234667	-1.068197528	1.068197528	790.3126563	10.5	246.3748801	72.81777778	2.91998558	no
15	18.5	26.5	3.5	1.060660172	0.942809042	0.942809042	1051.380625	13	246.3748801	130.1500694	2.91998558	no
16	15	18.72727273	7.431165603	1.809312331	-1.381740431	1.381740431	705.5664063	9.5	246.3748801	56.25	2.91998558	no
17	14	17.4	4.516635916	1.23794184	-2.827273371	2.827273371	630.6376563	8.5	246.3748801	42.68444444	2.91998558	no
18	17	24.88888889	8	1.926784887	-0.259499648	0.259499648	885.8064063	11.5	246.3748801	92.80111111	2.91998558	no
19	17	24.45454545	10.07747764	2.364376827	-0.211472213	0.211472213	885.8064063	11.5	246.3748801	92.80111111	2.91998558	no
20	16	24.5	5	1.327591805	-1.129865366	1.129865366	790.3126563	10.5	246.3748801	72.81777778	2.91998558	no
21	21.5	19.5	3.53160335	1.06588513	3.752749603	3.752749603	1476.480625	16	246.3748801	237.4167361	2.353363435	yes
22	12.5	19.5	3.53160335	1.06588513	-4.690937004	4.690937004	534.765625	7	246.3748801	27.12673611	6.313751515	no
23	23	25.6	3.858612301	1.121135337	4.905741365	4.905741365	1744.106406	17.5	246.3748801	310.9344444	2.353363435	yes
24	30	24.7	9.428090416	2.226419647	5.614395299	5.614395299	3637.597656	24.5	246.3748801	900	2.353363435	yes

Bias?

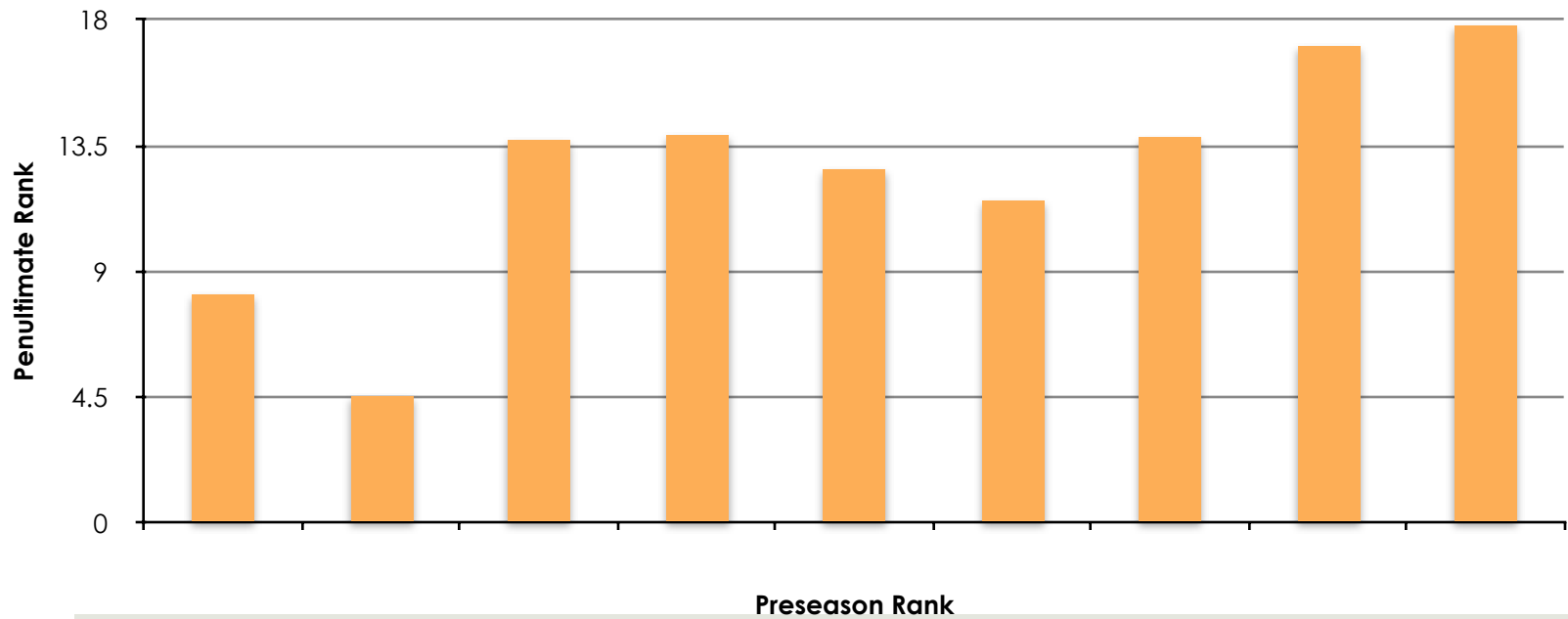
Average Number of Losses



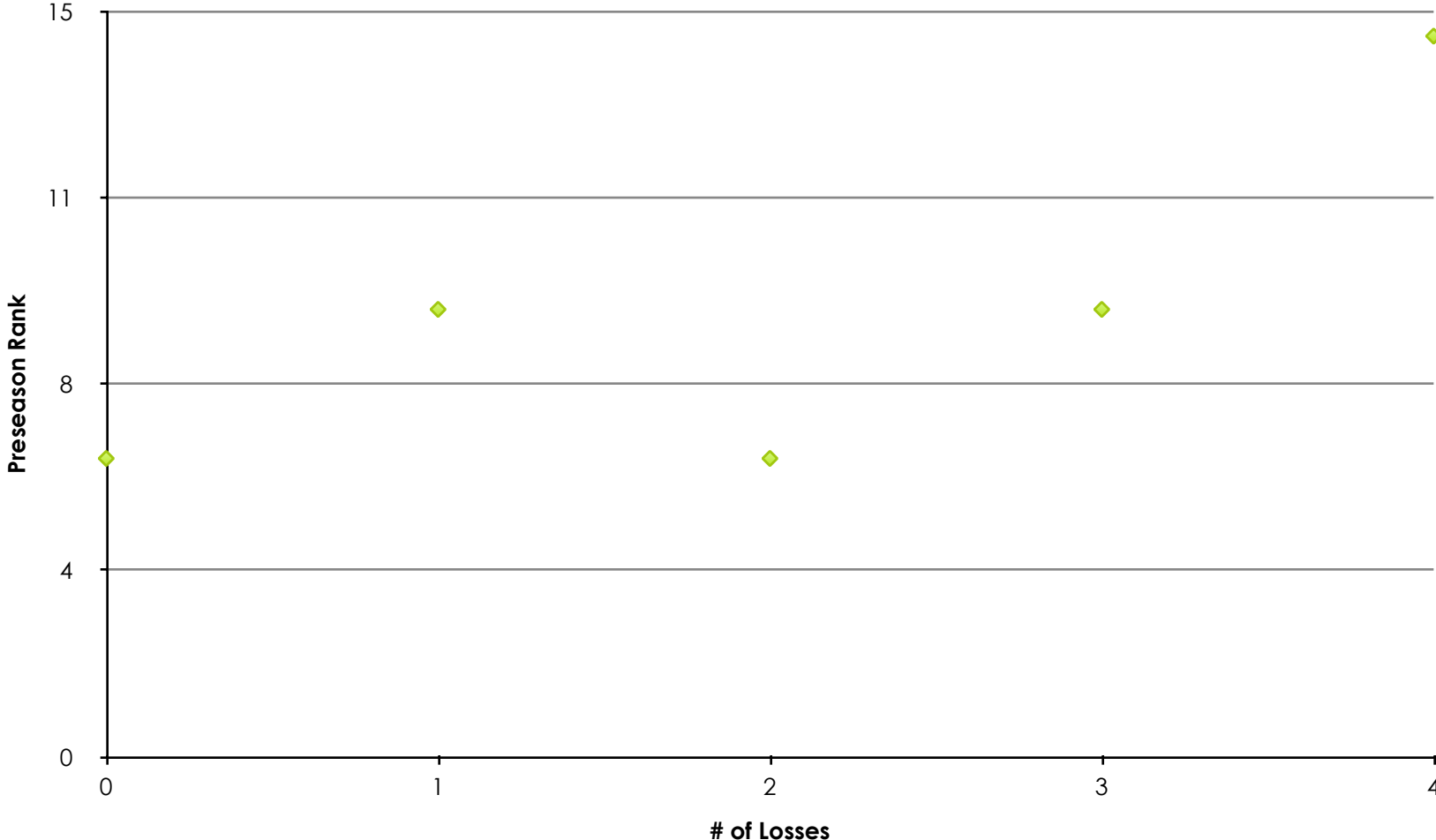
Median Finish



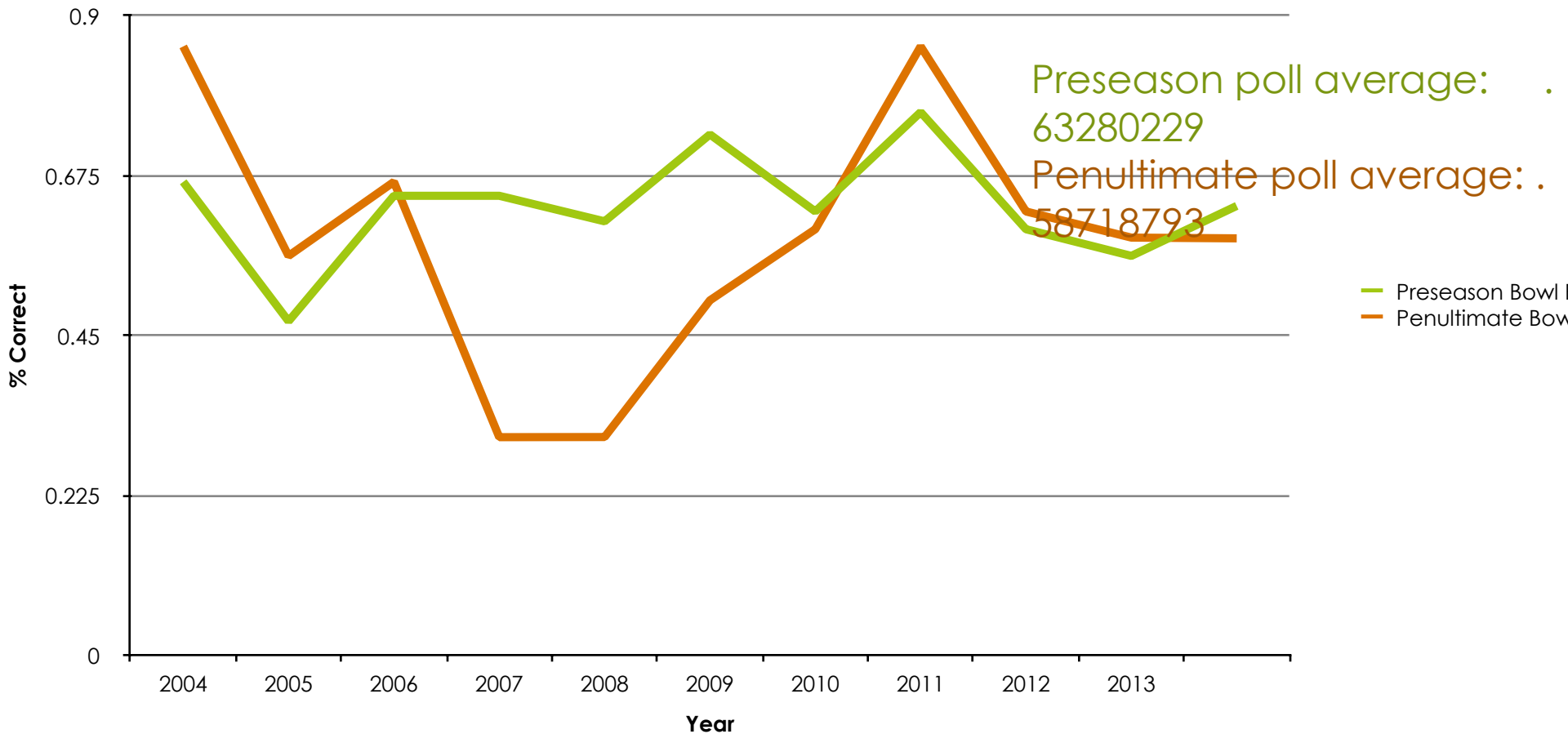
Average Finish



Median Preseason Ranking for the Penultimate Highest Rank Team with X losses



Bowl Predictions





59-0

2014

- ▣ Preseason #2: Alabama
- ▣ Preseason rankings of Playoff Teams:
 - ▣ Alabama: 2
 - ▣ Oregon: 3
 - ▣ Florida State: 1
 - ▣ Ohio State: 5
- ▣ Highest ranked team with X losses:
 - ▣ 0, FSU, Preseason 1
 - ▣ 1, Alabama, Preseason 2
 - ▣ 2, Mississippi State, Preseason NR
 - ▣ 3, Ole Miss, Preseason 18

Further Research

- Take other factors into account
 - Conference bias?
 - “Blue blood” bias?
 - East-coast bias?
- Figure out new measures to accommodate for the new playoff system
- Incorporate week-to-week polls
 - Timing of losses
- Better control for records

Sources

- <http://www.cfbtn.com/2009/08/ranking-high-scientific-proof-that.html>
- Cfbpolldata.com
- Collegefootballpoll.com