

March Madness? Underreaction to hot and cold hands in NCAA basketball

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- ▶ (tendency to overestimate positive serial correlation)
- ▶ (Ironically HH is mostly a function of psychology that BE people typically say is so important.. including HH bias..)

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- ▶ Finance: Jegadeesh and Titman (2001)
- ▶ Lab: Offerman and Sonnemans (2004); Massey and Wu (2005)

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- ▶ HH *underreaction*: hot recent performance predicts better tourney

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- ▶ We do analysis for pre/post regime change (2001-09; 2010-2016 samples)

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- ▶ Overreaction: signals of *levels* of team quality predict tourney performance
- ▶ Another issue: overreaction vs HH bias vs salience/inattention

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- ▶ 2) changes in Sagarin ratings $\Delta SR_{T,T-1}$

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- ▶ Team-tourney-level: easier to control for serial correlation within tournament and bigger picture outcomes

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- ▶ Team-tourney-level: regress $Y = \#$ team's tourney wins on
- ▶ $X =$ team's recent performance vars, seed FEs, earlier Sag ratings

2001-09 Game-level results (LHS = higher seed win)

Table: All vars diffs (higher seed - lower seed). T = pre-tourney ratings.

	(1)
$\Delta SR_{T,T-1}$	0.027 (0.021)
$\Delta SR_{T-1,T-2}$	
$\Delta SR_{T-2,T-3}$	
$\Delta SR_{T,T-2}$	
SR_{T-1}	0.015*** (0.005)
SR_{T-2}	
SR_{T-3}	

2001-09 Game-level results (LHS = higher seed win)

Table: All vars diffs (higher seed - lower seed). T = pre-tourney ratings.

	(1)	(2)
$\Delta SR_{T,T-1}$	0.027 (0.021)	0.026 (0.022)
$\Delta SR_{T-1,T-2}$		0.033 (0.028)
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SR_{T-1}	0.015*** (0.005)	
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SR_{T-3}		

2001-09 Game-level results (LHS = higher seed win)

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	(1)	(2)	(3)
$\Delta SR_{T,T-1}$	0.027 (0.021)	0.026 (0.022)	0.027 (0.022)
$\Delta SR_{T-1,T-2}$		0.033 (0.028)	0.034 (0.028)
$\Delta SR_{T-2,T-3}$			0.008 (0.025)
$\Delta SR_{T,T-2}$			
SR_{T-1}	0.015*** (0.005)		
SR_{T-2}		0.015*** (0.005)	
SR_{T-3}			0.015*** (0.005)

2001-09 Game-level results (LHS = higher seed win)

Table: All vars diffs (higher seed - lower seed). T = pre-tourney ratings.

	(1)	(2)	(3)	(4)
$\Delta SR_{T,T-1}$	0.027 (0.021)	0.026 (0.022)	0.027 (0.022)	
$\Delta SR_{T-1,T-2}$		0.033 (0.028)	0.034 (0.028)	
$\Delta SR_{T-2,T-3}$			0.008 (0.025)	
$\Delta SR_{T,T-2}$				0.032** (0.015)
SR_{T-1}	0.015*** (0.005)			
SR_{T-2}		0.015*** (0.005)		
SR_{T-3}			0.015*** (0.005)	0.018*** (0.006)

2010-16 Game-level results (LHS = higher seed win)

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	(1)	(2)	(3)	(4)
$\Delta SR_{T,T-1}$	0.060*** (0.019)	0.062*** (0.019)	0.061*** (0.020)	
$\Delta SR_{T-1,T-2}$		0.040 (0.029)	0.041 (0.030)	
$\Delta SR_{T-2,T-3}$			-0.035 (0.028)	
$\Delta SR_{T,T-2}$				0.055*** (0.018)
SR_{T-1}	0.017** (0.007)			
SR_{T-2}		0.017** (0.007)		
SR_{T-3}			0.018** (0.007)	0.020** (0.007)

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- ▶ Evidence of effects declining in *latter* part of 2001-09 time-frame
- ▶ Effects driven by higher-seeded team overrated when cold in 01-09; by lower-seeded team underrated when hot in 2010-16

2001-09 Conf tourney effects (LHS = higher seed win;
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	(1)	(2)	(3)	(4)	(5)	(6)
CT Champ	-4.558 (3.952)	-4.237 (3.661)	-5.817 (4.872)	-4.774 (5.072)	-5.619 (4.855)	-3.140 (12.415)
CT SD_1	0.080 (0.056)			0.076 (0.082)		
CT SD_2		0.144* (0.084)			0.130 (0.089)	0.023 (0.229)
CT # W's			1.898 (1.733)	0.172 (2.528)	0.783 (1.843)	1.893 (5.258)
Seed 5-12						✓

2001-09 CT and reg. season effects (LHS = higher seed win)

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	(1)
CT Champion	-5.405 (4.929)
CT SD_2	0.173* (0.087)
CT # Wins	0.388 (1.928)
<hr/>	
SD_2 in last X (pre-CT) regular season games	
X=1	-0.103 (0.140)
<hr/>	
# Wins in last X (pre-CT) regular season games	
X=1	5.959 (4.205)

2001-09 CT and reg. season effects (LHS = higher seed win)

	(2)
CT Champion	-5.771 (4.919)
CT SD_2	0.192** (0.084)
CT # Wins	0.42 (1.886)
<hr/>	
SD_2 in last X (pre-CT) regular season games	
X=2	-0.128 (0.086)
<hr/>	
# Wins in last X (pre-CT) regular season games	
X=2	7.565*** (2.416)

2001-09 CT and reg. season effects (LHS = higher seed win)

	(3)
CT Champion	-5.931 (4.710)
CT SD_2	0.191** (0.085)
CT # Wins	0.854 (1.870)
<hr/>	
SD_2 in last X (pre-CT) regular season games	
X=3	-0.035 (0.079)
<hr/>	
# Wins in last X (pre-CT) regular season games	
X=3	6.138*** (1.744)

2001-09 CT and reg. season effects (LHS = higher seed win)

	(4)
CT Champion	-6.297 (5.301)
CT SD_2	0.207** (0.088)
CT # Wins	0.994 (2.099)
<hr/>	
SD_2 in last X (pre-CT) regular season games	
X=4	-0.04 (0.073)
<hr/>	
# Wins in last X (pre-CT) regular season games	
X=4	4.341** (2.015)

2001-09 CT and reg. season effects (LHS = higher seed win)

	(5)
CT Champion	-4.158 (6.064)
CT SD_2	0.292** (0.113)
CT # Wins	-0.103 (2.260)
<hr/>	
SD_2 in last X (pre-CT) regular season games	
X=5	0.008 (0.072)
<hr/>	
# Wins in last X (pre-CT) regular season games	
X=5	2.024 (2.325)

2001-09 Tourney-level horse race/kitchen sink (LHS = #
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	(1)	(2)	(3)
$\Delta SR_{T,T-2}$	0.152*** (0.046)		0.160** (0.073)
CT Champion		-0.111 (0.171)	-0.117 (0.170)
CT SD_2		0.007*** (0.003)	0.003 (0.004)
CT # Wins		-0.004 (0.058)	-0.01 (0.058)
Last 2 RS: SD_2		-0.002 (0.003)	-0.006 (0.004)
Last 2 RS # Wins		0.201** (0.076)	0.205** (0.076)

2001-09 Tourney-level horse race/kitchen sink by seed

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Seeds:	1-8	5-12	9-16
$\Delta SR_{T, T-2}$	0.102 (0.141)	0.203* (0.101)	0.093 (0.067)
CT Champion	-0.198 (0.224)	0.002 (0.191)	0.029 (0.199)
CT SD_2	0.012* (0.006)	-0.001 (0.006)	-0.003 (0.004)
CT # Wins	-0.07 (0.085)	-0.037 (0.088)	0.042 (0.064)
Last 2 RS: SD_2	-0.002 (0.007)	-0.006 (0.004)	-0.005* (0.003)
Last 2 RS # Wins	0.331** (0.127)	0.136 (0.090)	0.072 (0.077)
Adj R^2	0.42	0.03	0.161
N	285	287	288

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- ▶ Calculate 'optimal' seeds with and without incorporating recent performance
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- ▶ With: $\sim 35\%$ off by ≥ 2

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- ▶ But attention is endogenous - so inattention suggests under-appreciation of importance of hot/cold factors

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- ▶ The madness is very profitable !