

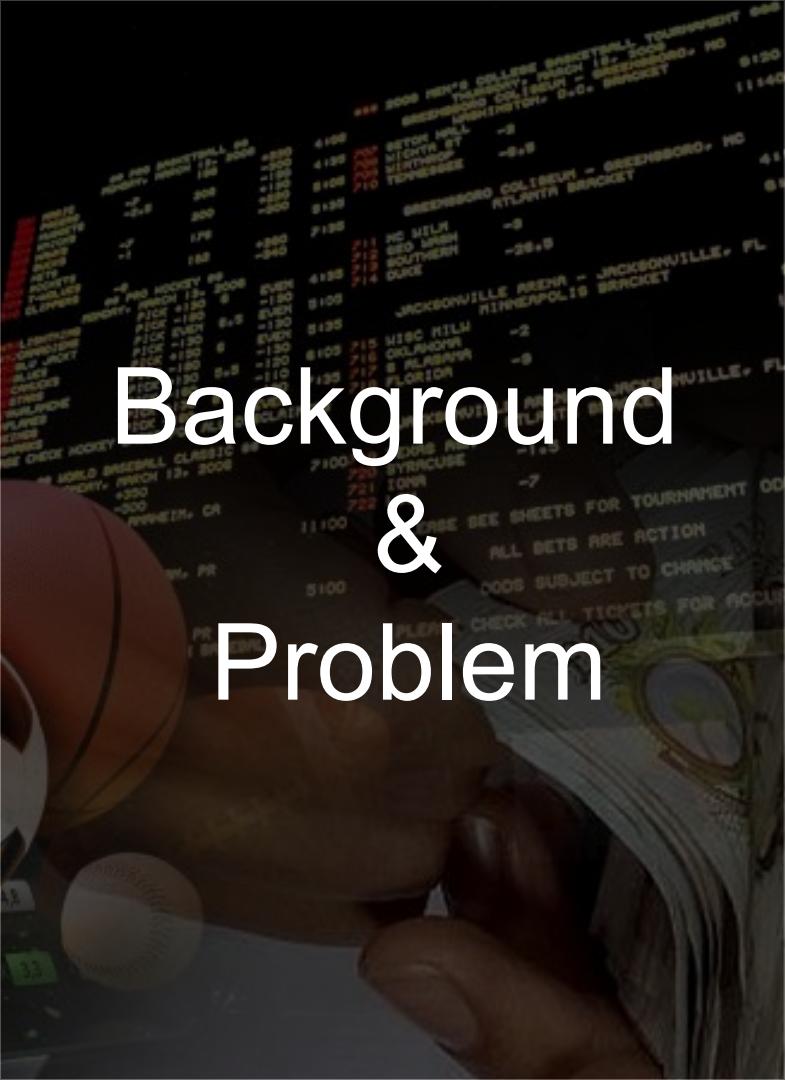
Application of Team Ratings to Sports Betting in the NBA

Tiffany Chen, Simon Gee, Hsu-Sheng (Johnson) Ko, Peter Leung, Susan Shang

Agenda

- Background & Problem
- Data
- Exploratory Data Analysis
- Model
- Result

Background & Problem



Motivation

- SRS Rating System in class
- Sports Betting in NBA

Problem

- Use Preseason Odds and Regular Season & Playoff Results to create an NBA team rating model that can be applied to sports betting
- Rolling 14-Day SRS and ELO rating system

Season Results

- 2017-2018 (1312 games)
- 2018-2019 (1312 games)
- 2019-2020 (1143 games)
- 2020-2021 (1171 games)

Preseason Win Totals

[2020-21 NBA Season](#) [Standings](#) [Schedule and Results](#) [Leaders](#) [Co.](#)

Odds given are preseason lines for the NBA championship (not for the over-

For example:

-200 odds would mean you wager \$200 for a \$100 payout

+1500 odds would mean you wager \$100 for a \$1500 payout

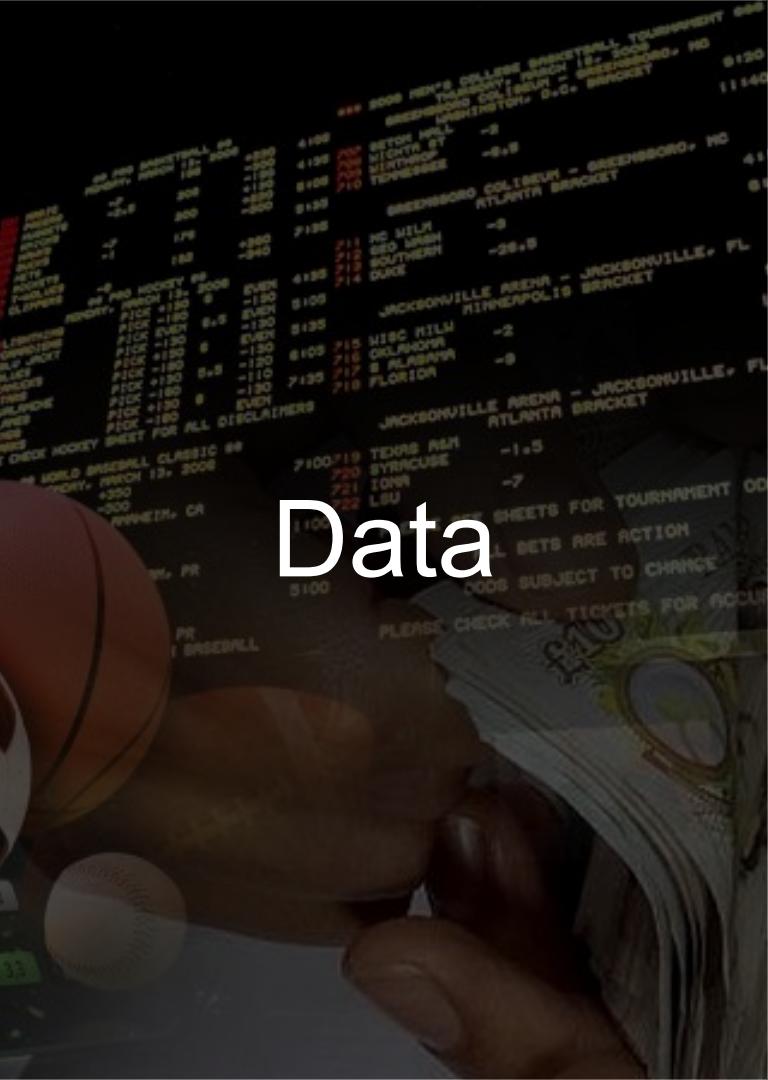
Wins O/U is the over-under for team wins during the regular season, general

2020-21 NBA Preseason Odds Share & Export ▾

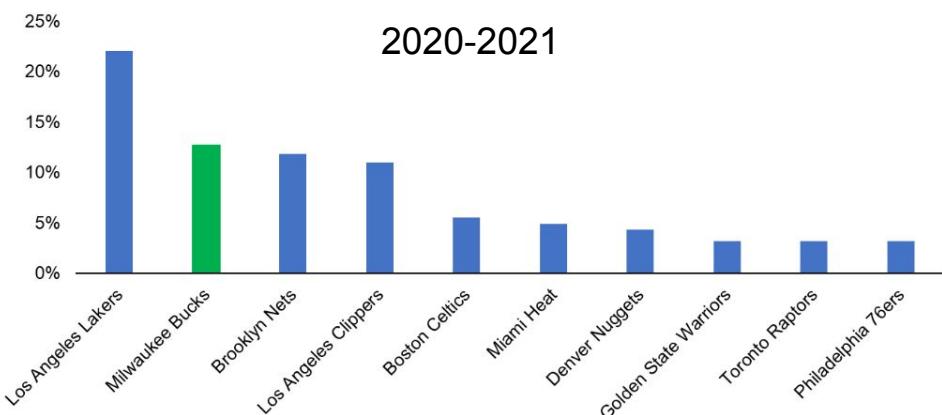
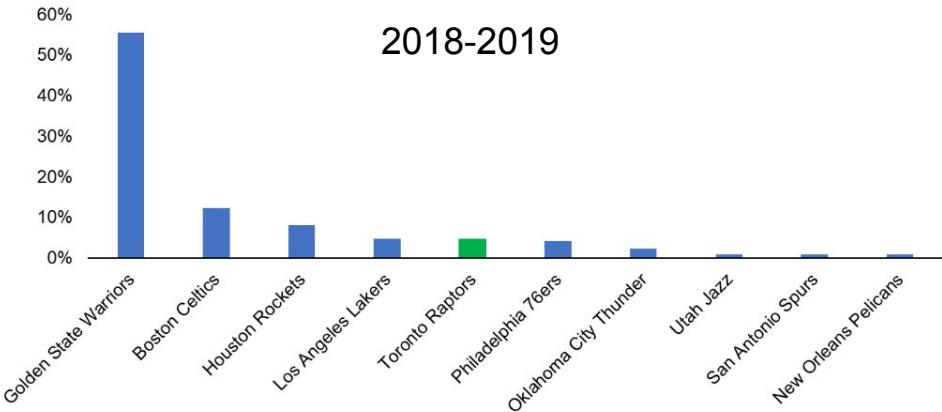
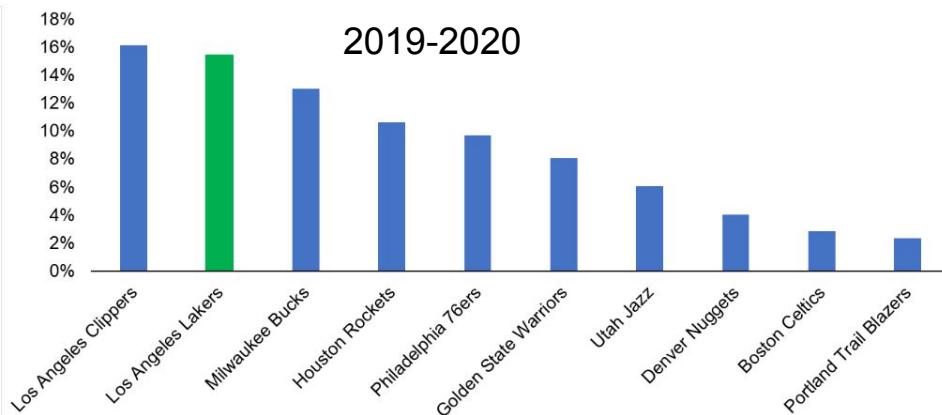
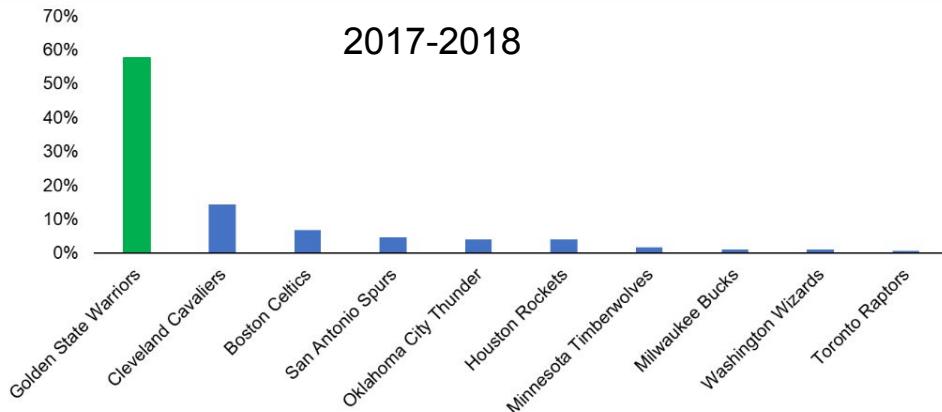
Team	Odds	W-L O/U	Result
Los Angeles Lakers	+275	47.5	42-30 (under)
Milwaukee Bucks	+550	49.5	46-26 (under)
Brooklyn Nets	+600	45.5	48-24 (over)
Los Angeles Clippers	+650	46.5	47-25 (over)
Boston Celtics	+1400	44.5	36-36 (under)
Miami Heat	+1600	43.5	40-32 (under)
Denver Nuggets	+1800	44.5	47-25 (over)
Golden State Warriors	+2500	37.5	39-33 (over)
Toronto Raptors	+2500	42.5	27-45 (under)
Philadelphia 76ers	+2500	43.5	49-23 (over)
Dallas Mavericks	+2500	42.5	42-30 (under)
Utah Jazz	+4000	41.5	52-20 (over)
Portland Trail Blazers	+4000	40.5	42-30 (over)
Phoenix Suns	+4000	38.5	51-21 (over)
Houston Rockets	+5000	34.5	17-55 (under)

Historical Betting Odds

Date	Rot	VH	Team	1st	2nd	3rd	4th	Final	Open	Close	ML	2H	
1222	501	V	GoldenState	25	20	26	28	99	228	234.5	265	1	
1222	502	H	Brooklyn	40	23	36	26	125	5.5	7.5	-320	115	
1222	503	V	LAClippers	39	17	33	27	116	223	219	115	108.5	
1222	504	H	LAklers	19	35	24	31	109	2.5	2	-135	3.5	
1223	521	V	Charlotte	23	21	36	34	114	215	217	-140	7	
1223	522	H	Cleveland	24	41	28	28	121	1	217	120	107	
1223	523	V	NewYork	33	33	16	25	107	214.5	215.5	270	107.5	
1223	524	H	Indiana	35	26	27	33	121	121	125	-320	75	
1223	525	V	Miami	29	24	30	24	107	3.5	4.5	-190	5	
1223	526	H	Orlando	27	29	23	34	113	220.5	219	170	106.5	
1223	527	V	Washington	26	33	24	24	107	229	230.5	250	113.5	
1223	528	H	Philadelphia	30	28	15	40	113	7.5	7	-300	5.5	
1223	529	V	Milwaukee	34	25	25	37	121	2.5	4.5	-190	4	
1223	560	H	Boston	31	33	37	21	122	226	223	170	115	
1223	561	V	NewOrleans	23	27	38	25	113	230	228.5	150	111	
1223	562	H	Toronto	26	31	22	20	99	5	3.5	-170	pk	
1223	563	V	Atlanta	42	41	28	13	124	1.5	2	-130	116	
1223	564	H	Chicago	29	30	20	25	104	227	234	110	6	
1223	565	V	Memphis	28	24	22	22	121	221.5	220	110	117	

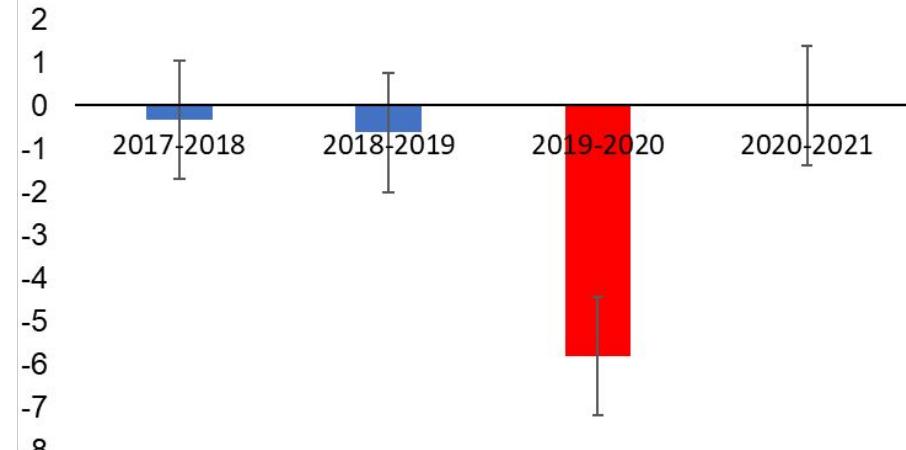


Championship Teams from Preseason Probabilities

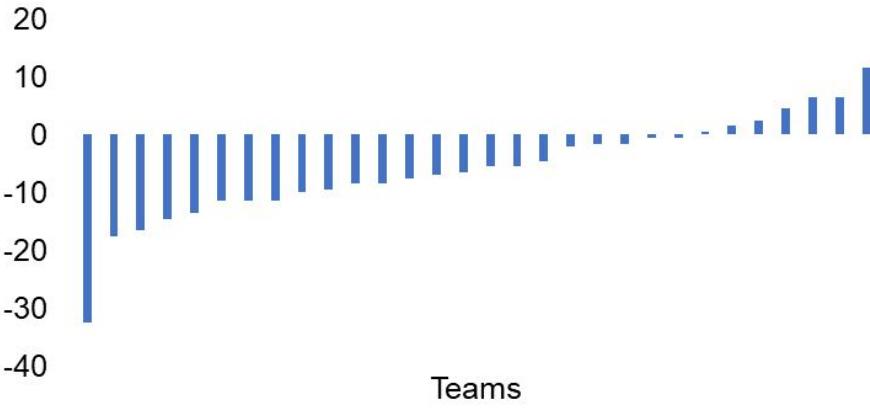


2019 - 2020 Season Discrepancy

Average of Wins - Predicted Wins



Wins - Predicted Wins for 2019-2020 (64-75 Games Played)



Ignored 2019-2020 Season

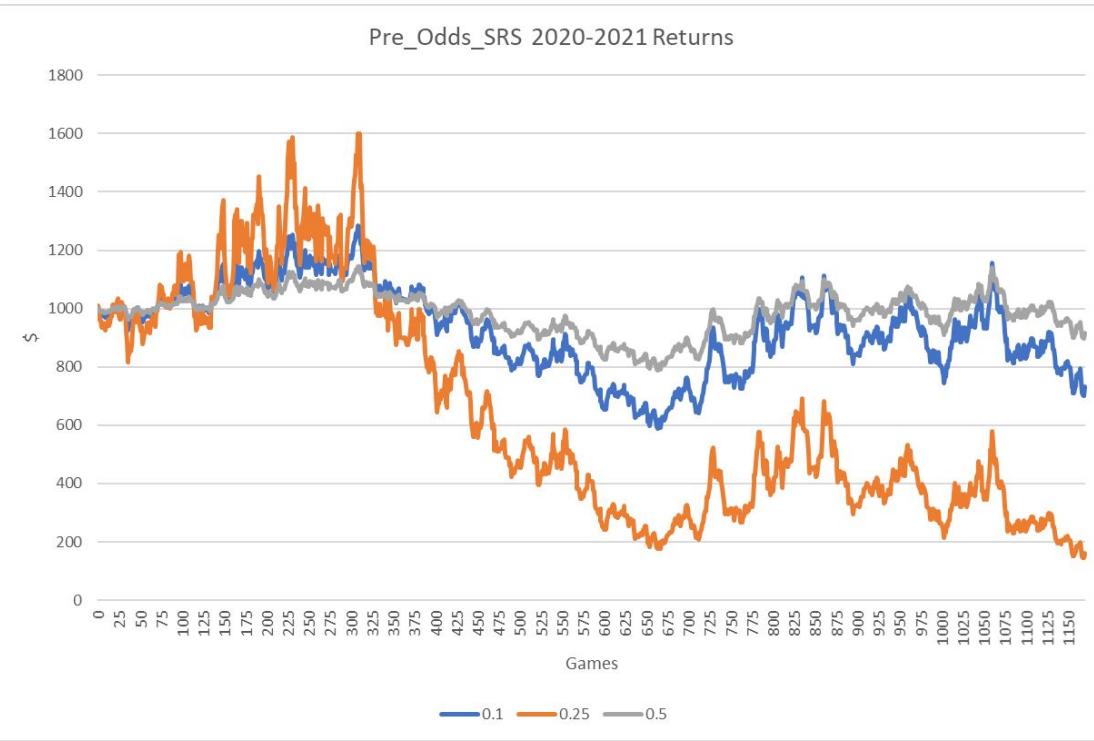
- Preseason odds cannot be used due to the shorter season to calculate the initial team ratings
- Many games were played on a neutral site



Rolling SRS and ELO Models

1. Converted preseason W/L predictions to initial team ratings for SRS and ELO
2. Created a Rolling SRS and ELO model based off wins and losses on strength of opponent and decreasing importance of initial team ratings in model as season progresses
3. Used home-win probabilities to decide on who to bet for based off our models' predicted spreads and Vegas' spreads
4. Kelly criterion to determine betting amount
 - a. Can never bet more than our bankroll at once
5. Calculated net worth for 2020-2021 season using an initial wealth of \$1000

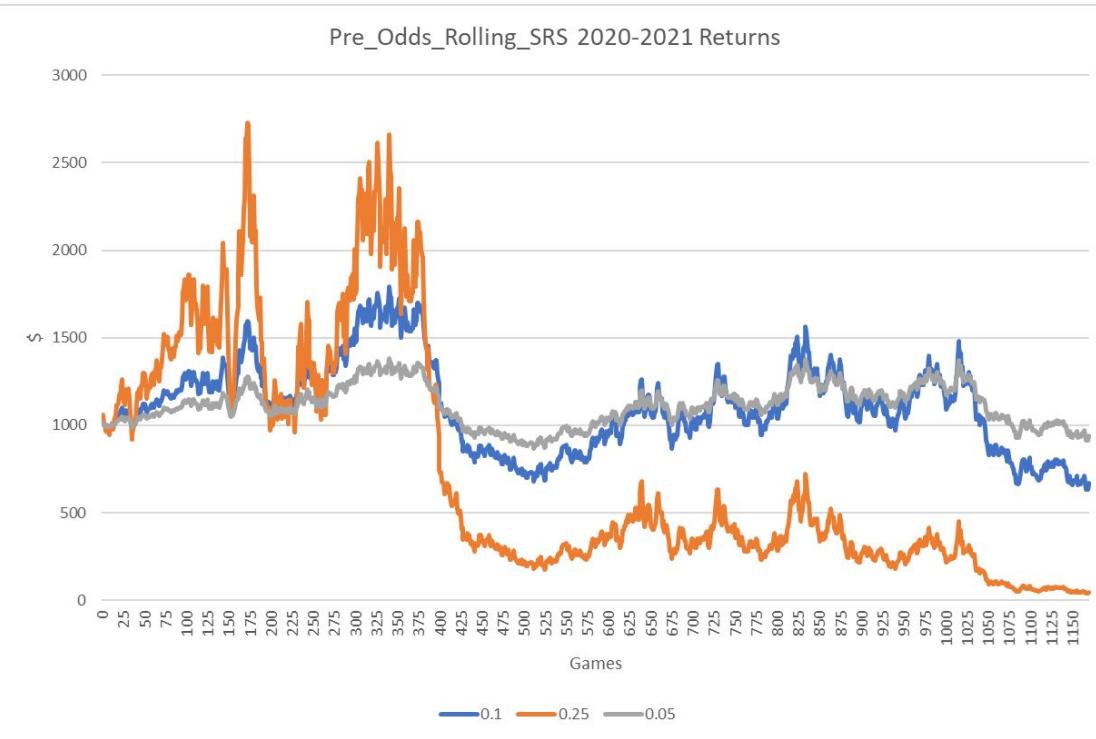
Baseline SRS Model



Kelly Fraction	Max Wealth	Final Wealth	Max Bet %
f = 0.05	\$1144.19	\$917.31	4.2%
f = 0.1	\$1282.85	\$732.92	8.4%
f = 0.25	\$1599.67	\$161.11	21%

Prediction Accuracy:
50.98%

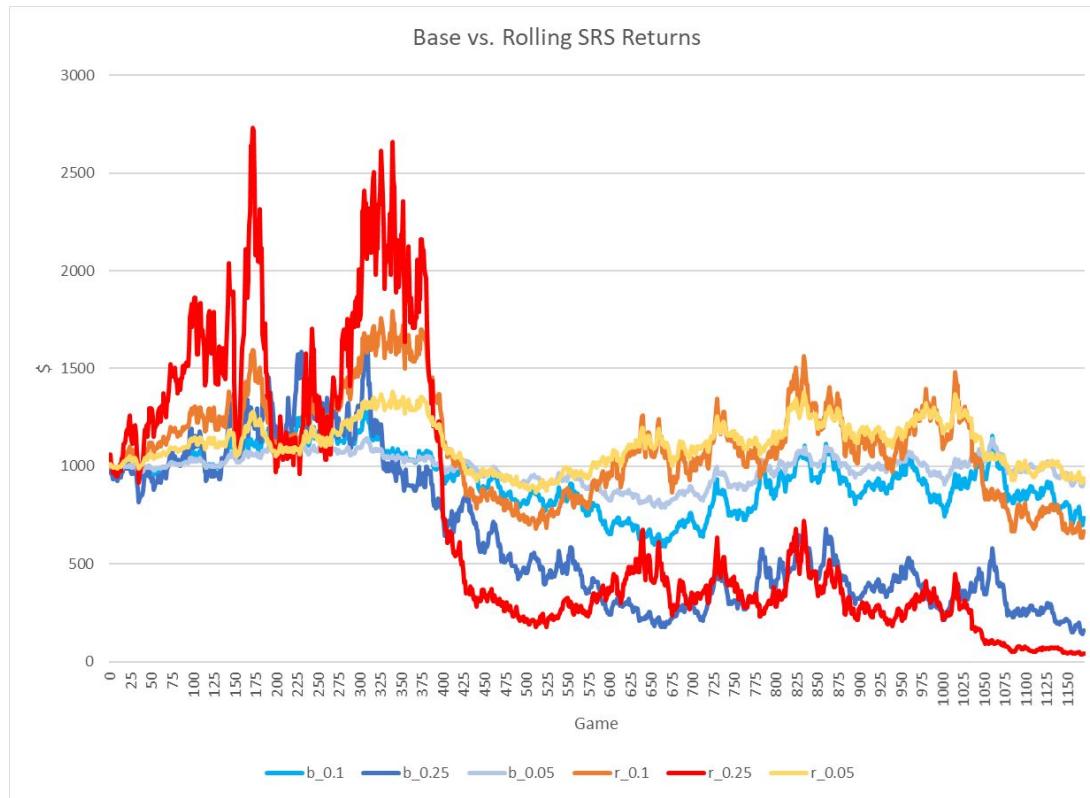
Rolling SRS Results



Kelly Fraction	Max Wealth	Final Wealth	Max Bet %
$f = 0.05$	\$1382.23	\$938.80	4.7%
$f = 0.1$	\$1792.34	\$666.75	9.4%
$f = 0.25$	\$2728.87	\$43.53	23%

Prediction Accuracy:
50.98%

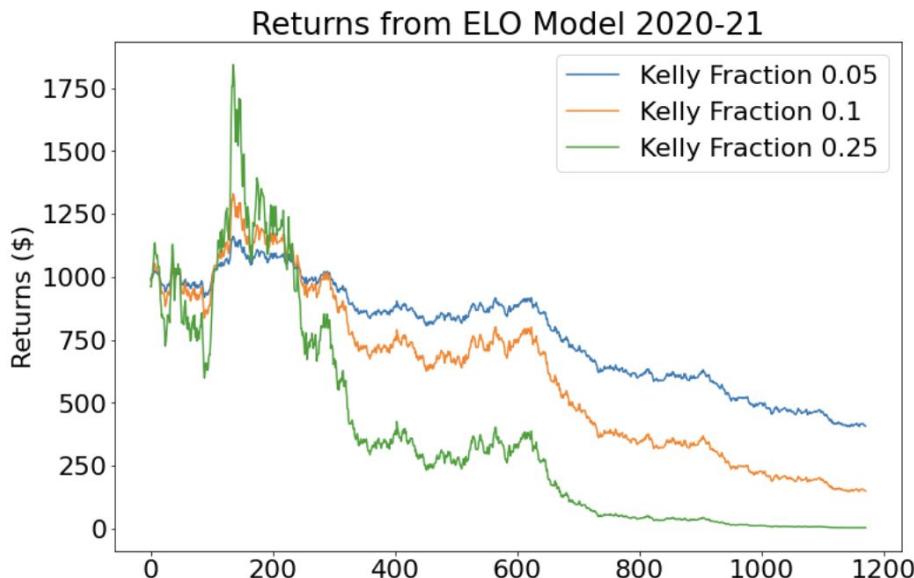
Comparison



ELO Results

ELO Model Params:

$K = 20$, `preseason_wins_to_elo = 6`, `elo_to_points = 28`, `homefield = 66`



Kelly Fraction	Max Wealth	Final Wealth	Max Bet %
$f = 0.05$	\$1161.45	\$408.13	3.9%
$f = 0.1$	\$1330.55	\$150.12	7.9%
$f = 0.25$	\$1843.01	\$3.96	19.7%

Prediction Accuracy:
51.24%

Conclusion

Model Comparison

- Rolling SRS Model did not produce better results than SRS
- ELO Model underperformed the Rolling SRS and SRS models but had a higher prediction accuracy

Future Work

- Consider other bets (money line, over/under) and bet on those with higher expected returns
- Smarter ways to determine home court and ELO point conversion rates
- Incorporate features that may impact game results (e.g. player ratings, travel)



Thank You!

Any questions?

Data Sources

Season Results

https://www.basketball-reference.com/leagues/NBA_2022.html

Preseason Win Totals

https://www.basketball-reference.com/leagues/NBA_2021_preseason_odds.html

Historical Betting Odds

<https://www.sportsbookreviewsonline.com/scoresoddsarchives/nba/nbaoddsarchives.htm?fbclid=IwAR3HlkEsMaXI3jRK-1fhNEj19DTD4h-wwKhh-UBYp3cZZG4jfsPsJth6Q7w>

Odds Shark (Used for Data Errors in Sports Book Reviews Online)

<https://www.oddsshark.com/nba>

True NBA home- and road-court performance (Used for Home Court Advantage)

<https://www.vsin.com/true-nba-home--and-road-court-performance/>

References

How Our NBA Predictions Work

<https://fivethirtyeight.com/methodology/how-our-nba-predictions-work/>

Extension of the Elo rating system to margin of victory

https://www.sciencedirect.com/science/article/pii/S0169207020300157?via%3Dihub&fbclid=IwAR2w_vGWoP3ex4cVQFM58bsDVbuZ4XSZ_z1W-nacGzyxeNjJwpk7OnRUSLc

The Betting Odds Rating System: Using soccer forecasts to forecast soccer

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0198668#sec001>

How We calculate NBA ELO Ratings

<https://fivethirtyeight.com/features/how-we-calculate-nba-elo-ratings/>

Appendix

Vegas Odds to SRS

* Approximated it from results of STDEV(margin - predicted spread) for 3 seasons used											
			Std dev	14	Pre-season SRS ratings from Vegas win totals				<a ghost"="" href="https://www.vsin.com>true-nba-home--and-road-court-performance/</th><th data-kind=">		
Visitor/Neutral	Home/Neutral	H-Predict	A-Predict	Margin	Pred H	win	Pred A	Win	Home advantage	2.52	RMSE
Golden State Warriors	Brooklyn Nets	7.24	0.85	6.39	0.675906	0.32409			Constant	0.00	
Los Angeles Clippers	Los Angeles Lakers	8.45	5.41	3.04	0.585905	0.41409			Rating average	0.0000	
Charlotte Hornets	Cleveland Cavaliers	-4.47	-4.88	0.41	0.511743	0.48826					
New York Knicks	Indiana Pacers	3.68	-7.60	11.28	0.789802	0.2102					
Miami Heat	Orlando Magic	0.19	3.70	-3.50	0.401217	0.59878					
Washington Wizards	Philadelphia 76ers	6.18	-1.82	8.01	0.716339	0.28366					
New Orleans Pelicans	Toronto Raptors	5.67	0.35	5.32	0.648132	0.35187					
Milwaukee Bucks	Boston Celtics	6.72	6.85	-0.13	0.496245	0.50376					
Atlanta Hawks	Chicago Bulls	-0.80	-0.82	0.03	0.500844	0.49916					
San Antonio Spurs	Memphis Grizzlies	0.39	-3.65	4.04	0.613446	0.38655					
Detroit Pistons	Minnesota Timberwolves	-0.63	-6.48	5.85	0.661874	0.33813					
Sacramento Kings	Denver Nuggets	6.89	-3.64	10.53	0.774071	0.22593					
Utah Jazz	Portland Trail Blazers	4.86	2.84	2.02	0.557407	0.44259					
Dallas Mavericks	Phoenix Suns	3.86	3.34	0.52	0.514791	0.48521					
New Orleans Pelicans	Miami Heat	6.21	0.35	5.86	0.662264	0.33774					
Golden State Warriors	Milwaukee Bucks	9.37	0.85	8.51	0.728457	0.27154					
Brooklyn Nets	Boston Celtics	6.72	4.73	1.99	0.556641	0.44336					
Dallas Mavericks	Los Angeles Lakers	8.45	3.34	5.11	0.64251	0.35749					
Los Angeles Clippers	Denver Nuggets	6.89	5.41	1.48	0.542036	0.45796					
Atlanta Hawks	Memphis Grizzlies	0.39	-0.82	1.21	0.534549	0.46545					
Oklahoma City Thunder	Charlotte Hornets	-2.37	-6.85	4.48	0.625513	0.37449					
Cleveland Cavaliers	Detroit Pistons	-3.96	-6.99	3.03	0.585551	0.41445					
Orlando Magic	Washington Wizards	0.69	-2.32	3.01	0.58519	0.41481					
Philadelphia 76ers	New York Knicks	-5.08	3.67	-8.75	0.265976	0.73402					
Indiana Pacers	Chicago Bulls	-0.80	1.17	-1.96	0.44227	0.55577					
Toronto Raptors	San Antonio Spurs	-1.13	3.16	-4.29	0.379604	0.6204					
Minnesota Timberwolves	Utah Jazz	5.35	-3.15	8.50	0.728104	0.2719					
Houston Rockets	Portland Trail Blazers	4.86	-0.64	5.50	0.652707	0.34729					
Phoenix Suns	Sacramento Kings	-1.12	1.34	-2.47	0.429997	0.57					
Dallas Mavericks	Los Angeles Clippers	7.93	3.34	4.59	0.62847	0.37153					
San Antonio Spurs	New Orleans Pelicans	2.87	-3.65	6.51	0.679104	0.3209					
Orlando Magic	Washington Wizards	0.69	-2.32	3.01	0.58519	0.41481					
Brooklyn Nets	Charlotte Hornets	-2.37	4.73	-7.10	0.30615	0.69385					
Philadelphia 76ers	Cleveland Cavaliers	-4.47	3.67	-8.14	0.28044	0.71956					

* Set initial home-advantage to 2.36

Win total predictions from SRS ratings

SRS Constants

- Stdev for SRS: 14
 - Rough average of the Stdev(margin - predicted spread) for the three seasons we used
- Sliding window for SRS to make sure all teams played once: 14 days
- Home court advantage: 2.36 Points

ELO Constants

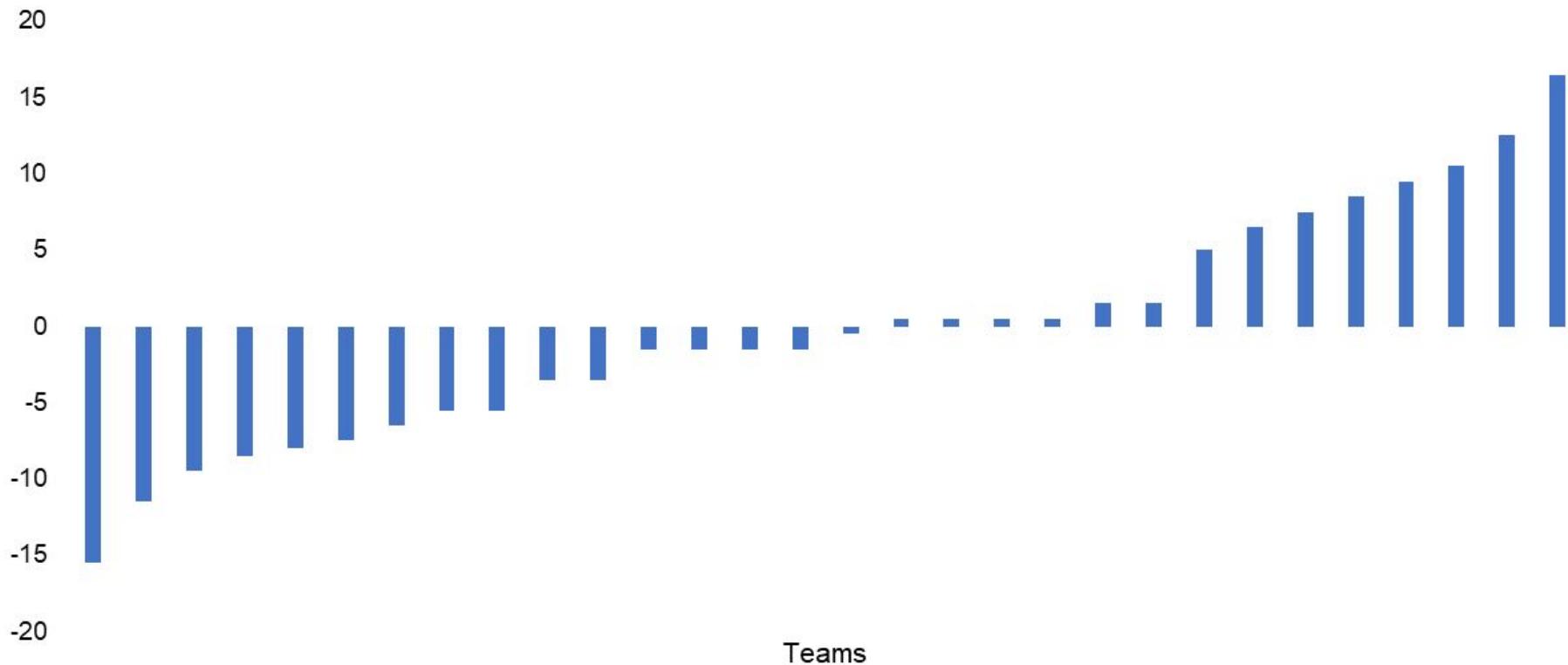
- Stdev for ELO: 14
 - Rough average of the Stdev(margin - predicted spread) for the three seasons we used
- K (the rate ELO adjusts based off new information): 20
- Home court advantage for ELO: 66 ($2.36 * 28$)
- ELO points to single game point: 28
- Average team with 41 wins starting ELO: 1500
- Therefore, team with 42 wins starting ELO: 1506

Kelly Constants

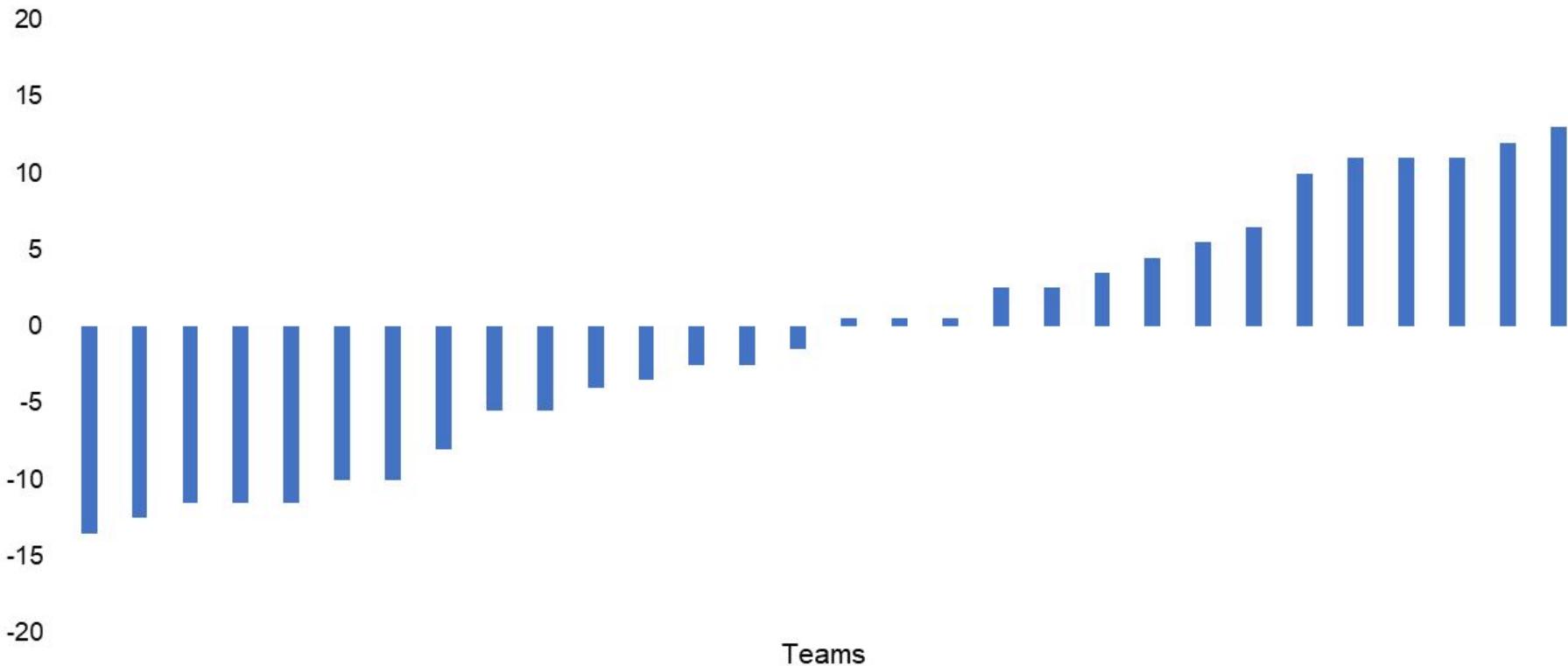
- Winning return: $10/11 \sim 90.9\%$
- Losing return: -100%
- Kelly fractions: 0.05, 0.1, 0.25
- $b^* = (pR_w + p - 1)/R_w$

Difference Between Actual Wins and Predicted Wins for Each Team

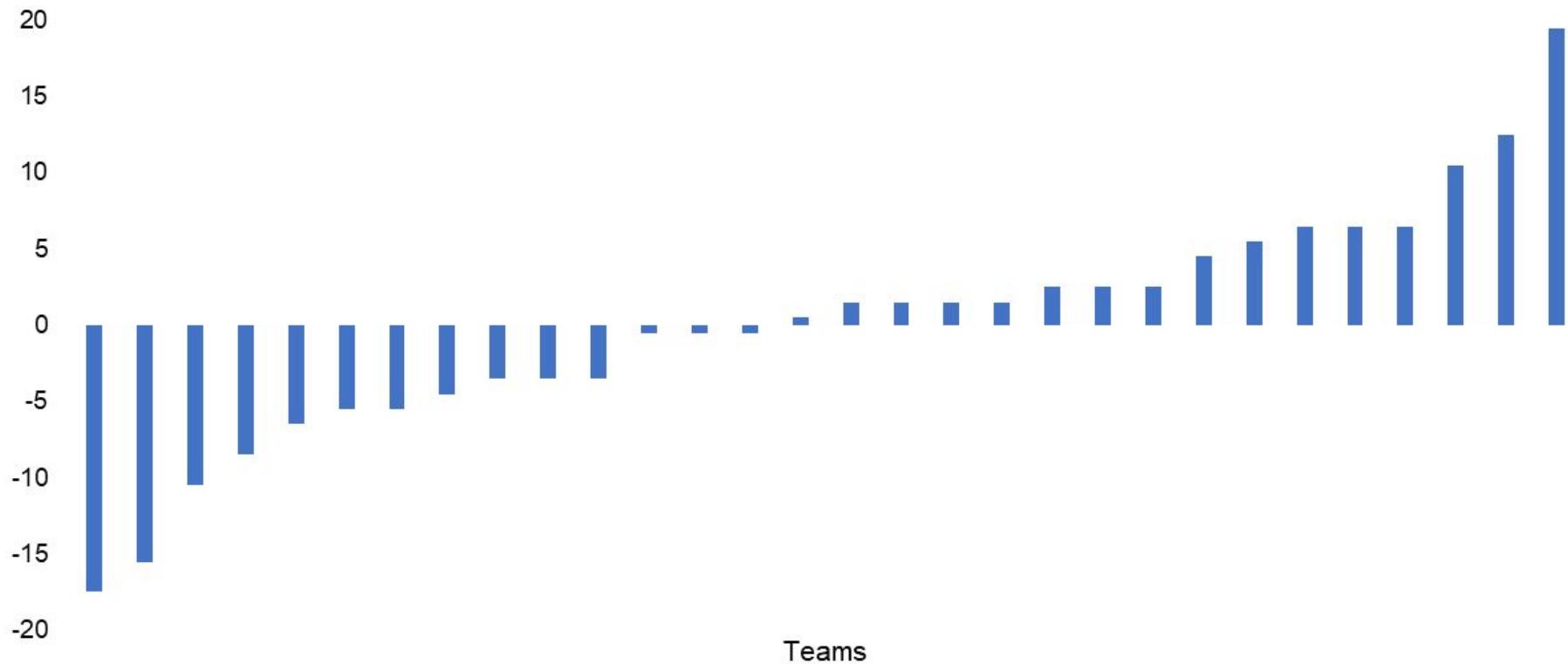
Wins - Predicted Wins for 2017-2018



Wins - Predicted Wins for 2018-2019



Wins - Predicted Wins for 2020-2021

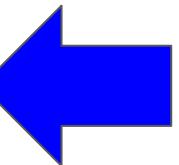


SRS Preseason and Regular Season Ratings

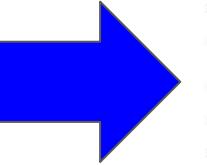
Team	Rating
Golden State Warriors	82.82063
San Antonio Spurs	4.705837
Houston Rockets	4.632433
Oklahoma City Thunder	3.935153
Boston Celtics	2.457837
Cleveland Cavaliers	2.404787
Minnesota Timberwolves	1.253814
Washington Wizards	0.45894
Denver Nuggets	0.128229
Toronto Raptors	0.11044
Milwaukee Bucks	-0.15041
Los Angeles Clippers	-0.93737
Portland Trail Blazers	-1.448
Utah Jazz	-1.97852
Miami Heat	-2.28791
Charlotte Hornets	-2.56468
New Orleans Pelicans	-2.59005
Philadelphia 76ers	-3.58159
Memphis Grizzlies	-3.72278
Detroit Pistons	-4.28086
Dallas Mavericks	-4.38667
Los Angeles Lakers	-5.43644
Orlando Magic	-6.53355
Indiana Pacers	-7.435
Phoenix Suns	-7.7883
New York Knicks	-7.84801
Sacramento Kings	-8.31245
Brooklyn Nets	-9.36478
Atlanta Hawks	-10.2349
Chicago Bulls	-12.0258

2017-2018 Preseason SRS Model Results

RMSE: 2.775



2017-2018 SRS Regular Season Model Results

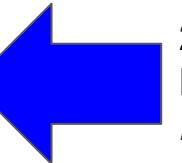


Team	Rating
Houston Rockets	8.209445
Toronto Raptors	7.295568
Golden State Warriors	5.788997
Utah Jazz	4.473704
Philadelphia 76ers	4.298519
Oklahoma City Thunder	3.420403
Boston Celtics	3.235369
San Antonio Spurs	2.88992
Portland Trail Blazers	2.600634
Minnesota Timberwolves	2.347978
Denver Nuggets	1.571566
New Orleans Pelicans	1.481843
Indiana Pacers	1.179224
Cleveland Cavaliers	0.59358
Washington Wizards	0.53087
Miami Heat	0.152619
Los Angeles Clippers	0.151377
Charlotte Hornets	0.068562
Detroit Pistons	-0.25653
Milwaukee Bucks	-0.44978
Los Angeles Lakers	-1.43309
Dallas Mavericks	-2.70033
New York Knicks	-3.52738
Brooklyn Nets	-3.66874
Orlando Magic	-4.91531
Atlanta Hawks	-5.29864
Memphis Grizzlies	-5.81183
Sacramento Kings	-6.59325
Chicago Bulls	-6.83793
Phoenix Suns	-8.79737

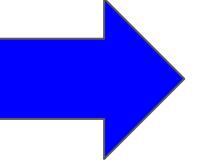
Team	Rating
Golden State Warriors	9.984598
Boston Celtics	7.685769
Houston Rockets	7.128417
Toronto Raptors	6.001702
Philadelphia 76ers	4.969602
Utah Jazz	3.673546
Los Angeles Lakers	3.345511
Oklahoma City Thunder	3.21881
Denver Nuggets	3.019204
Milwaukee Bucks	2.337835
Indiana Pacers	2.239308
New Orleans Pelicans	1.882986
Washington Wizards	1.17654
San Antonio Spurs	1.036452
Portland Trail Blazers	0.531817
Minnesota Timberwolves	0.314008
Miami Heat	0.283599
Detroit Pistons	-1.66496
Los Angeles Clippers	-1.83498
Dallas Mavericks	-2.35279
Memphis Grizzlies	-2.84359
Charlotte Hornets	-3.02566
Brooklyn Nets	-4.47969
Orlando Magic	-5.10582
Cleveland Cavaliers	-5.1445
Phoenix Suns	-5.37066
Chicago Bulls	-5.52038
New York Knicks	-6.09686
Sacramento Kings	-6.76706
Atlanta Hawks	-8.62276

2018-2019 Preseason SRS Model Results

RMSE: 0.633

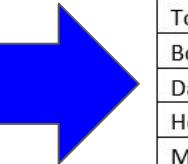


2018-2019 SRS Regular Season Model Results



Team	Rating
Milwaukee Bucks	8.045686
Golden State Warriors	6.422969
Toronto Raptors	5.491034
Utah Jazz	5.287307
Houston Rockets	4.965523
Portland Trail Blazers	4.435851
Denver Nuggets	4.197782
Boston Celtics	3.899489
Oklahoma City Thunder	3.559382
Indiana Pacers	2.764404
Philadelphia 76ers	2.257651
San Antonio Spurs	1.807832
Los Angeles Clippers	1.090654
Orlando Magic	0.278028
Brooklyn Nets	-0.39956
Miami Heat	-0.45018
Detroit Pistons	-0.55428
Sacramento Kings	-0.80984
Dallas Mavericks	-0.86176
Minnesota Timberwolves	-1.01921
New Orleans Pelicans	-1.09655
Charlotte Hornets	-1.31336
Los Angeles Lakers	-1.32421
Memphis Grizzlies	-2.08012
Washington Wizards	-3.29746
Atlanta Hawks	-6.05908
Chicago Bulls	-8.31564
Phoenix Suns	-8.60894
New York Knicks	-8.92401
Cleveland Cavaliers	-9.38937

2019-2020 SRS Regular Season Model Results



Team	Rating
Milwaukee Bucks	9.476194
Los Angeles Clippers	6.629519
Los Angeles Lakers	6.273031
Toronto Raptors	5.954382
Boston Celtics	5.810122
Dallas Mavericks	4.821587
Houston Rockets	3.111077
Miami Heat	2.613229
Utah Jazz	2.564391
Philadelphia 76ers	2.3176
Denver Nuggets	2.29932
Oklahoma City Thunder	2.241326
Indiana Pacers	1.643106
Phoenix Suns	0.398031
New Orleans Pelicans	-0.57479
Portland Trail Blazers	-0.58001
San Antonio Spurs	-0.58447
Orlando Magic	-0.85989
Memphis Grizzlies	-0.96496
Brooklyn Nets	-1.02023
Sacramento Kings	-1.54639
Minnesota Timberwolves	-4.04284
Chicago Bulls	-4.12686
Detroit Pistons	-4.40983
Washington Wizards	-5.25782
New York Knicks	-6.7406
Charlotte Hornets	-6.95942
Atlanta Hawks	-7.75406
Cleveland Cavaliers	-8.02355
Golden State Warriors	-8.2411

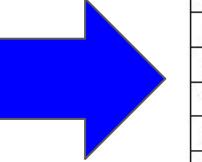
Team	Rating
Milwaukee Bucks	6.851611
Los Angeles Lakers	5.937733
Los Angeles Clippers	5.41453
Brooklyn Nets	4.725417
Denver Nuggets	4.377296
Boston Celtics	4.204693
Miami Heat	3.696361
Philadelphia 76ers	3.668842
Dallas Mavericks	3.340392
Toronto Raptors	3.159212
Utah Jazz	2.83784
Portland Trail Blazers	2.3443
Phoenix Suns	1.344419
Indiana Pacers	1.16843
Golden State Warriors	0.852607
New Orleans Pelicans	0.35039
Houston Rockets	-0.6375
Atlanta Hawks	-0.82482
Washington Wizards	-1.82404
Memphis Grizzlies	-2.126
Orlando Magic	-2.32154
Minnesota Timberwolves	-3.14628
Chicago Bulls	-3.31035
Sacramento Kings	-3.64008
San Antonio Spurs	-3.64722
Charlotte Hornets	-4.88483
Detroit Pistons	-6.47731
Oklahoma City Thunder	-6.84959
Cleveland Cavaliers	-6.9878
New York Knicks	-7.59671

2020-2021 Preseason SRS Model Results

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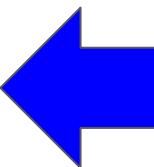
2020-2021 SRS Regular Season Model Results



Team	Rating
Utah Jazz	8.9648889
Los Angeles Clippers	6.0182222
Phoenix Suns	5.6715556
Milwaukee Bucks	5.5684444
Philadelphia 76ers	5.2751111
Denver Nuggets	4.8182222
Brooklyn Nets	4.2351111
Los Angeles Lakers	2.7648889
Dallas Mavericks	2.2582222
Atlanta Hawks	2.1417778
New York Knicks	2.1284444
Portland Trail Blazers	1.8048889
Boston Celtics	1.3151111
Golden State Warriors	1.0982222
Memphis Grizzlies	1.0715556
Miami Heat	-0.0582222
Indiana Pacers	-0.1248889
New Orleans Pelicans	-0.1951111
Toronto Raptors	-0.5382222
Chicago Bulls	-0.9382222
San Antonio Spurs	-1.5817778
Washington Wizards	-1.8448889
Charlotte Hornets	-1.9382222
Sacramento Kings	-3.4484444
Detroit Pistons	-4.3782222
Minnesota Timberwolves	-5.2484444
Houston Rockets	-7.5017778
Cleveland Cavaliers	-8.1915556
Orlando Magic	-9.0182222
Oklahoma City Thunder	-10.1284444

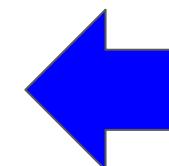
SRS Ratings on All Games Played (Regular and Postseason)

Team	Rating
Houston Rockets	7.674854
Golden State Warriors	7.144735
Toronto Raptors	5.919469
Philadelphia 76ers	4.156363
Utah Jazz	4.131444
Oklahoma City Thunder	2.982284
Boston Celtics	2.723763
San Antonio Spurs	2.468294
Minnesota Timberwolves	1.963625
Portland Trail Blazers	1.932261
New Orleans Pelicans	1.556384
Indiana Pacers	1.37106
Denver Nuggets	1.355597
Cleveland Cavaliers	0.693737
Washington Wizards	0.521522
Los Angeles Clippers	-0.05998
Charlotte Hornets	-0.17382
Miami Heat	-0.41445
Milwaukee Bucks	-0.43629
Detroit Pistons	-0.49494
Los Angeles Lakers	-1.64361
Dallas Mavericks	-2.9099
New York Knicks	-3.77669
Brooklyn Nets	-3.91593
Orlando Magic	-5.14993
Atlanta Hawks	-5.54421
Memphis Grizzlies	-6.04302
Sacramento Kings	-6.8022
Chicago Bulls	-7.08325
Phoenix Suns	-9.0145



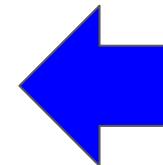
**2017-2018 SRS Model Results
on All Games Played**

Team	Rating
Milwaukee Bucks	8.389682
Golden State Warriors	6.369996
Toronto Raptors	6.174586
Houston Rockets	5.103095
Utah Jazz	4.52066
Denver Nuggets	3.945733
Portland Trail Blazers	3.937392
Boston Celtics	3.709511
Oklahoma City Thunder	3.007435
Philadelphia 76ers	2.491532
Indiana Pacers	2.207698
San Antonio Spurs	1.589061
Los Angeles Clippers	0.516076
Orlando Magic	-0.41842
Miami Heat	-0.72394
Brooklyn Nets	-1.05595
Sacramento Kings	-1.10621
Dallas Mavericks	-1.15957
Minnesota Timberwolves	-1.31827
New Orleans Pelicans	-1.38564
Detroit Pistons	-1.47776
Charlotte Hornets	-1.59235
Los Angeles Lakers	-1.61907
Memphis Grizzlies	-2.37495
Washington Wizards	-3.57507
Atlanta Hawks	-6.32933
Chicago Bulls	-8.58769
Phoenix Suns	-8.90893
New York Knicks	-9.19509
Cleveland Cavaliers	-9.66153



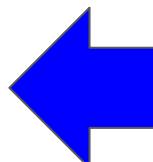
2018-2019 SRS Model Results on All Games Played

Team	Rating
Milwaukee Bucks	8.336641
Los Angeles Lakers	6.559979
Los Angeles Clippers	6.472983
Boston Celtics	6.180115
Toronto Raptors	5.829889
Dallas Mavericks	4.001266
Miami Heat	3.505973
Houston Rockets	3.039991
Utah Jazz	2.586588
Denver Nuggets	2.200412
Philadelphia 76ers	1.647626
Oklahoma City Thunder	1.548107
Indiana Pacers	0.914307
Phoenix Suns	0.109026
New Orleans Pelicans	-0.85409
San Antonio Spurs	-0.87993
Portland Trail Blazers	-1.02354
Orlando Magic	-1.11755
Memphis Grizzlies	-1.25643
Sacramento Kings	-1.84144
Brooklyn Nets	-1.9711
Minnesota Timberwolves	-4.34146
Chicago Bulls	-4.48909
Detroit Pistons	-4.76631
Washington Wizards	-5.55078
New York Knicks	-7.07237
Charlotte Hornets	-7.29268
Atlanta Hawks	-8.04409
Cleveland Cavaliers	-8.28823
Golden State Warriors	-8.49465



2019-2020 SRS Model Results on All Games Played

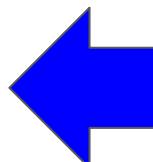
Team	Rating
Utah Jazz	7.90111
Los Angeles Clippers	6.384977
Phoenix Suns	6.198998
Milwaukee Bucks	6.02926
Philadelphia 76ers	5.304838
Brooklyn Nets	4.744701
Denver Nuggets	3.712915
Los Angeles Lakers	2.235158
Atlanta Hawks	2.06206
Dallas Mavericks	1.88291
Portland Trail Blazers	1.541139
New York Knicks	1.368553
Memphis Grizzlies	0.755811
Boston Celtics	0.711829
Golden State Warriors	0.682416
Indiana Pacers	-0.50188
New Orleans Pelicans	-0.52593
Toronto Raptors	-0.86237
Miami Heat	-1.09571
Chicago Bulls	-1.26237
San Antonio Spurs	-1.91501
Washington Wizards	-2.38774
Charlotte Hornets	-2.57936
Sacramento Kings	-3.77927
Detroit Pistons	-4.70237
Minnesota Timberwolves	-5.57927
Houston Rockets	-7.8326
Cleveland Cavaliers	-8.5157
Orlando Magic	-9.34237
Oklahoma City Thunder	-10.4593



2020-2021 SRS Model Results on All Games Played

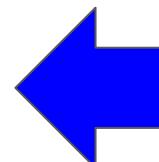
ELO Preseason Ratings

Team	Elo
GoldenState	1659
Houston	1587
SanAntonio	1584
Cleveland	1575
Boston	1575
OklahomaCity	1575
Minnesota	1545
Washington	1545
Toronto	1545
Milwaukee	1539
Denver	1527
LAClippers	1515
Miami	1515
Charlotte	1509
Portland	1509
Utah	1497
NewOrleans	1491
Philadelphia	1491
Detroit	1485
Memphis	1479
Dallas	1467
LALakers	1455
Orlando	1455
Indiana	1443
NewYork	1437
Phoenix	1425
Sacramento	1419
Brooklyn	1419
Atlanta	1407
Chicago	1386



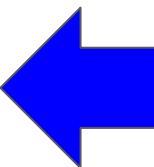
2017-2018 ELO Model Preseason Ratings

Team	Elo
GoldenState	1629
Boston	1608
Houston	1593
Toronto	1587
Philadelphia	1575
Utah	1551
LALakers	1545
OklahomaCity	1545
Milwaukee	1542
Indiana	1539
Denver	1539
NewOrleans	1527
Washington	1527
SanAntonio	1515
Miami	1512
Portland	1506
Minnesota	1503
Detroit	1485
LAClippers	1476
Dallas	1467
Charlotte	1467
Memphis	1461
Brooklyn	1446
Orlando	1440
Cleveland	1437
Chicago	1434
Phoenix	1428
NewYork	1425
Sacramento	1410
Atlanta	1395



2018-2019 ELO Model Preseason Ratings

Team	Elo
Milwaukee	1581
LALakers	1569
LAClippers	1563
Brooklyn	1557
Boston	1551
Denver	1551
Miami	1545
Philadelphia	1545
Toronto	1539
Dallas	1539
Utah	1533
Portland	1527
Phoenix	1515
Indiana	1515
GoldenState	1509
NewOrleans	1503
Atlanta	1491
Houston	1491
Washington	1479
Memphis	1473
Orlando	1473
Minnesota	1461
Chicago	1461
Sacramento	1455
SanAntonio	1455
Charlotte	1443
Detroit	1425
OklahomaCity	1419
Cleveland	1419
NewYork	1413

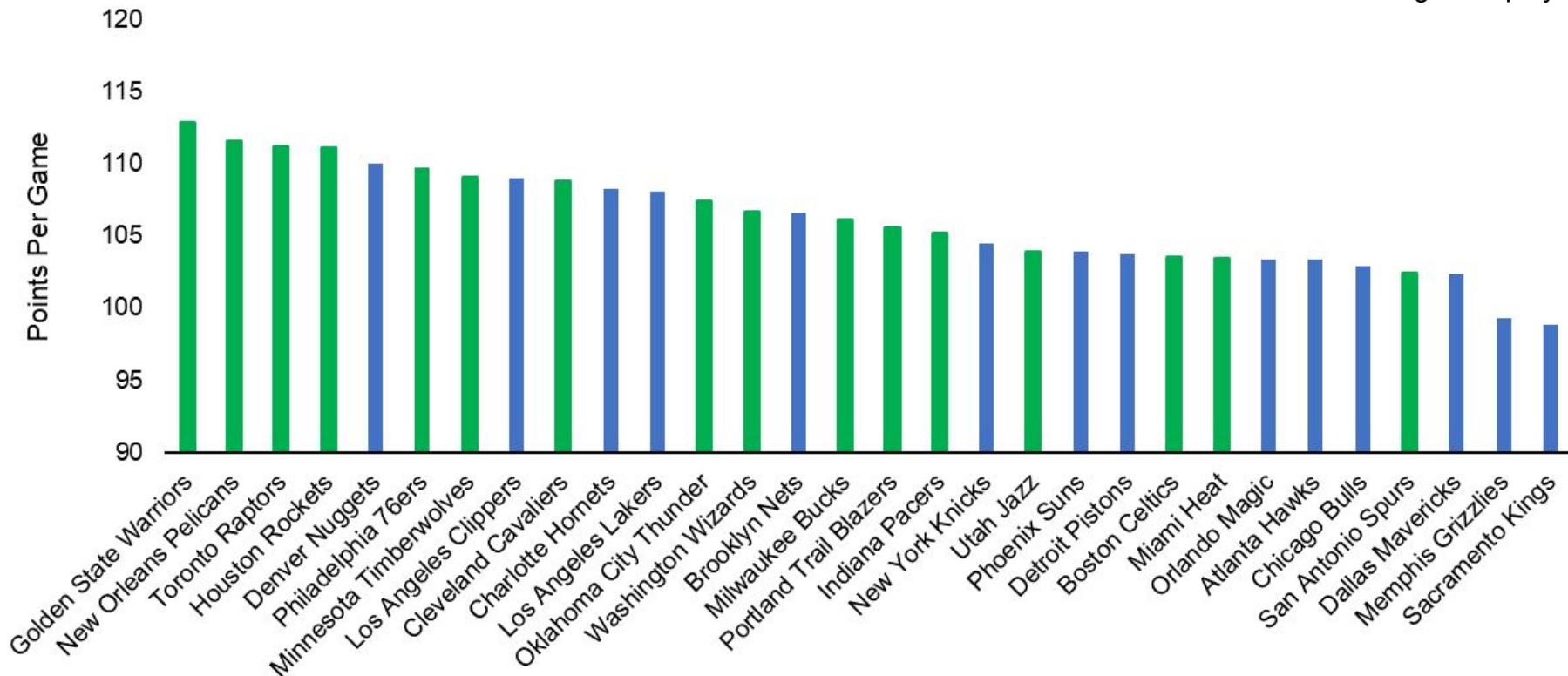


2020-2021 ELO Model Preseason Ratings

Points Per Game on All Games Played (Regular and Postseason)

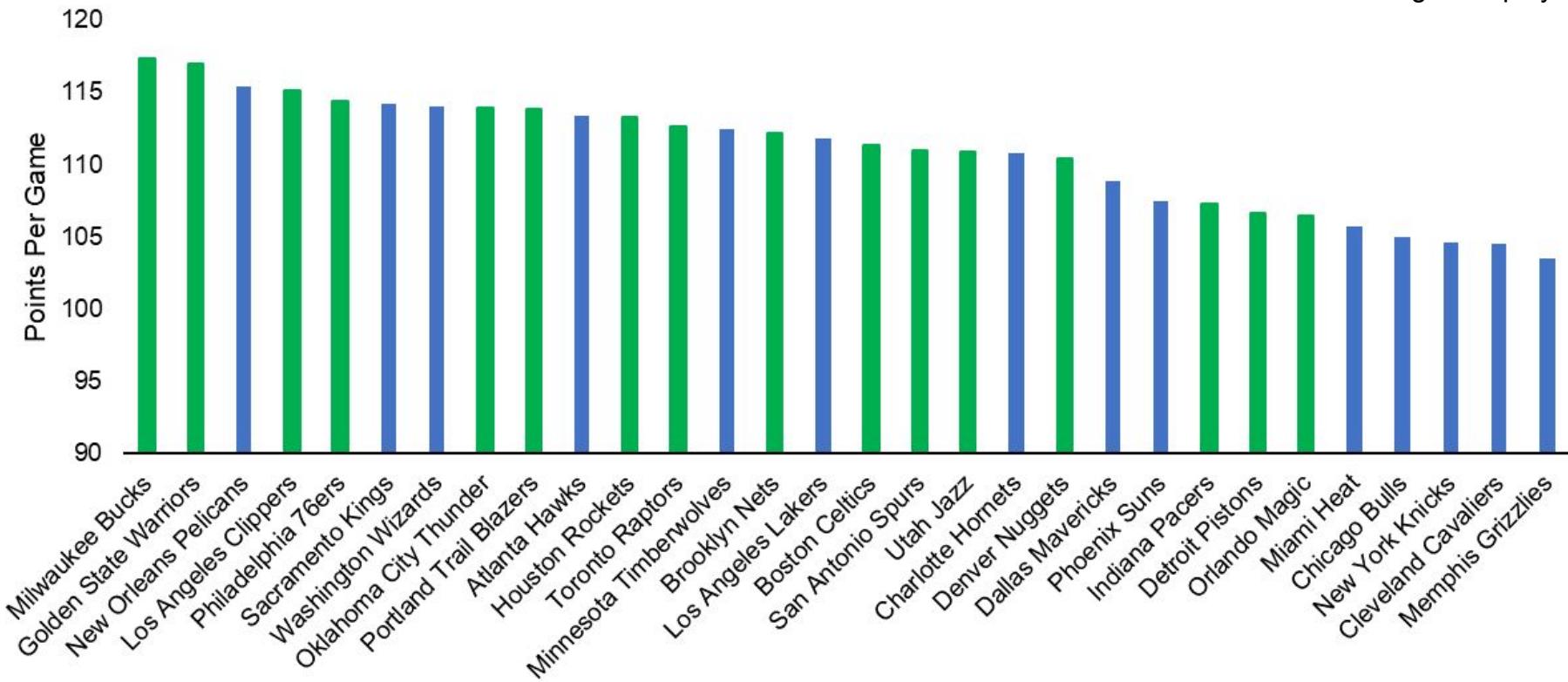
2017-2018 Playoff Teams

*Green Indicates Playoff Team
*Based off PPG of all games played



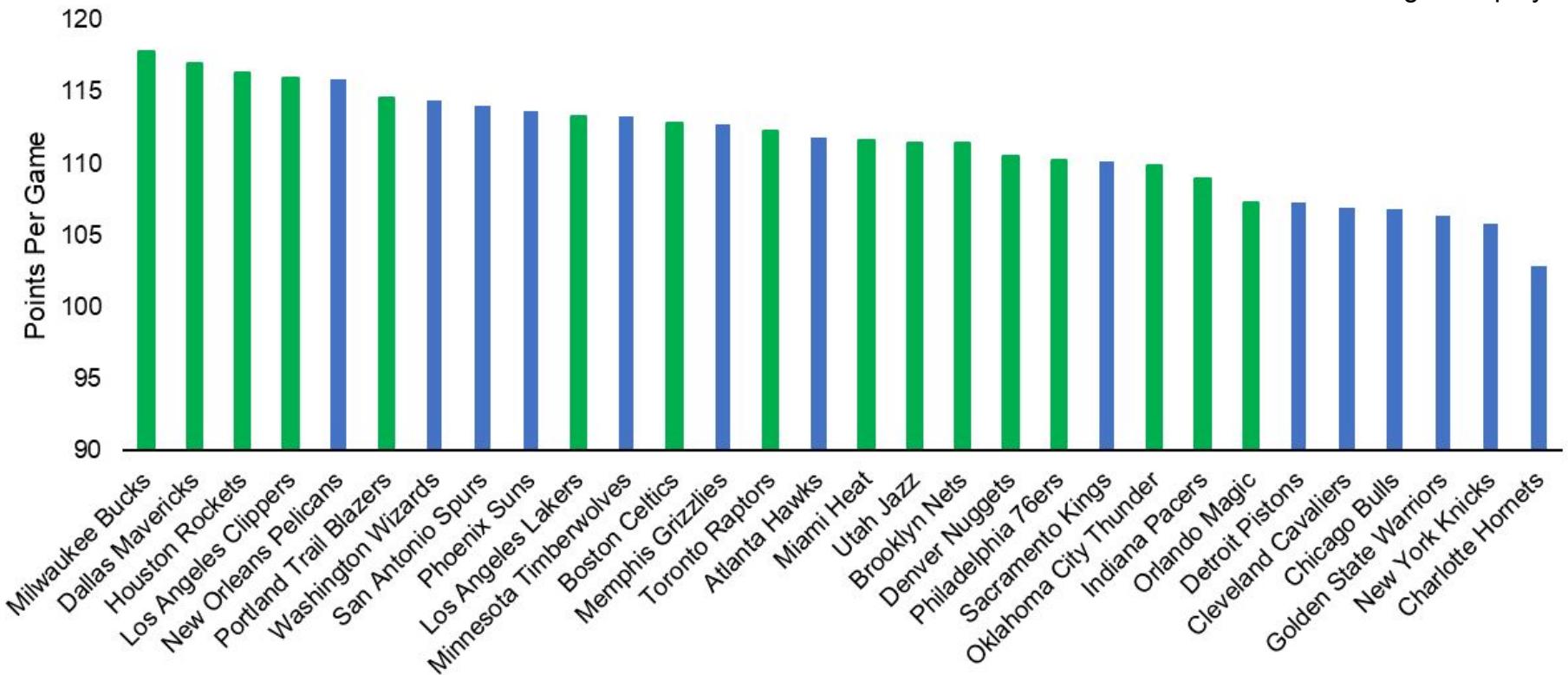
2018-2019 Playoff Teams

*Green Indicates Playoff Team
*Based off PPG of all games played



2019-2020 Playoff Teams

*Green Indicates Playoff Team
*Based off PPG of all games played



2020-2021 Playoff Teams

*Green Indicates Playoff Team
*Based off PPG of all games played

