How to Win in the NBA Playoffs: A Statistical Analysis

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Professional sports teams are big business. A team's competitive success is just one part of the franchise's overall financial success, but it is certainly an important factor. To achieve competitive success, the management of the team needs to address such concerns as player selection, training, motivation, and game strategy. To address these concerns, it is important to recognize the factors that lead to a team's success. This study seeks to examine those factors that are associated with a team's success in the playoffs of the National Basketball Association (NBA).

INTRODUCTION

Regular-season games in the National Basketball Association may not always be representative of players' and teams' abilities. Coaches may experiment with different lineups, players may get days off to rest from fatigue and injury, and some games may not be as important as others to a team's eventual success for the season. However, in the playoffs we can assume that teams are playing to the fullest of their abilities, and therefore performance statistics should be more meaningful. While a team's success is obviously tied to certain factors such as their field-goal shooting percentage, the effects of other factors is not so clear. Is it beneficial to take a large number of 3-point shots? Do turnovers and assists have much significance? How important is having the home-court advantage? This study seeks to determine the relative importance of such factors in a team's playoff success.

Much of the recent work in performance statistics in basketball is based on Dean Oliver's "Four Factors" (Oliver, 2003). He identified four calculations to evaluate a team's performance: effective field goal percentage, turnover percentage, rebounding percentage, and free throw factor. These four calculations can be made both for a team's offense and for its defense. Also, these calculations can be made for basketball teams at any level. One major difference from past statistical analyses is that all of the Four Factors are calculated per possession, rather than per game. Oliver estimated the relative importance of the Four Factors as 40%, 25%, 20%, and 15%, respectively.

Kubatko, Oliver, Pelton, and Rosenbaum (Kubatko, 2007) related the Four Factors approach to a wide variety of other statistical methods used in analyzing performance in basketball. Teramoto and Cross (Teramoto, 2010) applied the Four Factors, along with overall offensive and defensive ratings, specifically to NBA teams and examined their importance in regular-season games and at different stages of the playoffs. They found that the importance of defensive performance increased from the regular season to the playoffs and as the playoffs progressed. Baghal (Baghal, 2012) used structural equation modeling (SEM) to show that the Four Factors on offense could be reduced to a single offensive performance factor, while the Four Factors on defense, slightly modified, could also be reduced to a single defensive performance factor. He also found that a team's salary was related to its offensive performance factor and that the offensive performance factor was more highly related to a team's winning percentage.

A study not based on the Four Factors was conducted using data from the Spanish Basketball League by Ibanez et al. (Ibanez, 2008). They found that, while previous studies generally showed that field-goal shooting and defensive rebounding were the most important factors in winning individual games, season-long success was more significantly associated with assists, steals, and blocks.

DATA

Common box-score statistics (Field Goals Made, Field Goals Attempted, Field Goal %, 3-Point Shots Made, 3-Point Shots Attempted, 3-Point %, Free Throws Made, Free Throws Attempted, Free Throw %, Offensive Rebounds, Defensive Rebounds, Total Rebounds, Assists, Steals, Blocks, Turnovers, Personal Fouls, and Points) were collected for each team for all 2012 playoff games from the ESPN website (NBA Playoffs 2012). The winning team and the home team were also recorded. There were 84 playoff games, resulting in a sample of 168 data points (Exhibit 1). A simple correlation and regression analysis was performed to determine which factors were most significantly associated with winning or losing each game.

RESULTS

Exhibit 2 shows the correlation matrix of all factors. As expected, the factor with the highest correlation with winning is the number of points scored. The correlation of .4444 was significant at the .001 level. The Home-Court advantage was also very significant, .3571. The two performance factors that past studies have shown to be most correlated to winning, Field Goal % and Defensive Rebounds, are also the highest here, with correlations of .4383 and .3474, respectively. Of course, Field Goals Made were highly correlated with Field Goal % and therefore also with winning. After Field Goal % and Defensive Rebounds, the most significant performance factor was Assists, with a correlation of .2564, also significant at the .001 level. Rebounds, Blocks, and Free Throws Made (or Attempted) were all significantly correlated with winning at the .01 level, although the Free Throw % was not significant. Personal Fouls were also correlated negatively with winning, also significant at the .01 level.

It is interesting that taking 3-point shots had virtually no correlation with winning, although the 3-Point % did have some effect, significant at the .05 level. The positive correlation of Steals and the negative correlation of Turnovers with winning were not significant. Strangely, Offensive Rebounds had a negative correlation with winning, although not significant. This can be explained by noting the highly significant negative correlation between Offensive Rebounds and Field Goal %. Obviously, there are more opportunities for offensive rebounds when you miss your shots.

Besides the factors that proved significant to winning, there were several other interesting correlations between factors. For instance, teams that shot more 3-point shots also made a higher percentage of their 3-point shots, with a correlation of .2642, significant at the .001 level. Therefore, taking 3-point shots, rather than being an act of desperation by an outmatched team, seems to be a natural result of having good long-range shooters on your team.

Blocks and Rebounds had a very high correlation of .2931, significant at the .001 level. This result is not surprising, as both likely result from having talented big men on the team.

As noted, there does appear to be a definite home-court advantage in the playoffs. There are several possible reasons for this effect. First, the players are more familiar and comfortable with their own facilities, and they don't have the fatigue and stress that can come from travel. However, a second widely-held reason is that the referees respond to the home team's fans by giving preferential treatment to the home team. Our data show that Free Throws Attempted have a positive correlation with being at Home of .2198, significant at the .01 level. Similarly, Personal Fouls have a negative correlation with being at Home of -.2477, also significant at the .01 level. Indeed, there was much discussion in the 2012 playoffs regarding the large disparity of fouls in favor of the Miami Heat, the eventual champions, when playing at home but not when on the road.

MULTIPLE REGRESSION MODEL

The best multiple regression model (Exhibit 3) for winning a game results from a set of independent variables that are each highly correlated with winning but not highly correlated to each other. As expected, the factors of HOME, FG%, and DREB are included in the best models. Among the other factors with high correlations to winning, FTM proved to be the best addition to the set of independent variables. The optimal model overall has a minuscule p-value of 3.8 E-19, while each of the four independent variables has a significance below .0003.

The overall regression equation may be expressed as

$$WIN = -2.639 + .227 * HOME + 3.756 * FG\% + .034 * DREB + .019 * FTM$$

The original data for WIN were either 0 or 1, so the result of the regression equation is somewhat like a probability of winning (although the results need not be between 0 and 1). It is interesting that the home-court advantage adds almost .23 to the WIN total. Also, note that this model looks at each team's performance factors in isolation, not in conjunction with the other team's performance. Thus, it is a prediction that assumes average performance by the opponent. In reality, each team's performance is affected by its opponent's performance. However, the opponent's performance is somewhat reflected in these statistics. For example, if one team is the home team, the other obviously isn't. Also, if one team has a high field-goal percentage, the other team will necessarily have fewer defensive rebounds.

As an example, if we insert the data from the first game listed in Exhibit 1, Philadelphia at Chicago, we get a result of .20 for Philadelphia and 1.10 for Chicago. In fact, Chicago did win that game by 12 points. In the final game of the playoffs, Oklahoma City at Miami, the results were .30 for Oklahoma City and 1.10 for Miami, a game which Miami won by 15 points.

CONCLUSIONS

Box score statistics from the 2012 NBA playoffs confirm earlier results that field-goal percentage and defensive rebounds are the performance factors most correlated with winning a game. Home-Court advantage was also highly significant. Assists were also significant at the .001 level, while Rebounds, Blocks, Free Throws Made, and Personal Fouls were all significant at the .01 level. 3-Point % was significant at the .05 level, but Steals, Turnovers, and Offensive Rebounds were not significantly related to winning the game. Home teams had significantly fewer fouls called on them than visiting teams. These correlations have implications for teams in player selection and in game strategy. Besides the advantage of having good shooters and athletic big men, the high significance of Assists shows the importance of a good point guard. Having a regular-season record that is good enough to obtain the home-court advantage for as many rounds as possible is also important.

A multiple regression model relating Winning to the independent variables of Home-Court advantage, Field Goal %, Defensive Rebounds, and Free Throws Made was developed to provide a measure of the likelihood of a team winning a particular game. The coefficients of the independent variables in this model provide a measure of the value of these performance factors to the likelihood of winning.

It would be interesting in further research to examine the interplay between both teams' performance measures within a game to see how they affect each other's statistics and the result of the game.

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EXHIBIT 1
2012 PLAYOFF GAME STATISTICS

	WIN	HOME	FGM	FGA	FG%	3PM	3PA	3P%	FTM	FTA	FT%
Phi	0	0	33	83	0.398	1	9	0.111	24	31	0.774
Chi	1	1	40	78	0.513	6	14	0.429	17	24	0.708
Phi	1	0	46	78	0.590	5	12	0.417	12	15	0.800
Chi	0	1	38	84	0.452	6	14	0.429	10	18	0.556
Chi	0	0	28	75	0.373	4	14	0.286	14	23	0.609
Phi	1	1	26	76	0.342	1	14	0.071	26	33	0.788
Chi	0	0	34	85	0.400	3	11	0.273	11	14	0.786
Phi	1	1	31	79	0.392	5	19	0.263	22	31	0.710
Phi	0	0	25	78	0.321	2	11	0.182	17	24	0.708
Chi	1	1	34	82	0.415	5	10	0.500	4	11	0.364
Chi	0	0	30	80	0.375	2	13	0.154	16	21	0.762
Phi	1	1	29	73	0.397	6	16	0.375	15	20	0.750
Nyk	0	0	25	70	0.357	7	21	0.333	10	11	0.909
Mia	1	1	34	70	0.486	8	21	0.381	24	33	0.727
Nyk	0	0	38	77	0.494	5	15	0.333	13	19	0.684
Mia	1	1	38	73	0.521	9	21	0.429	19	27	0.704
Mia	1	0	29	68	0.426	11	29	0.379	18	22	0.818
Nyk	0	1	22	69	0.319	4	20	0.200	22	29	0.759
Mia	0	0	30	73	0.411	3	19	0.158	24	35	0.686
Nyk	1	1	32	75	0.427	5	22	0.227	20	29	0.690
Nyk	0	0	36	76	0.474	4	13	0.308	18	21	0.857
Mia	1	1	34	78	0.436	9	19	0.474	29	34	0.853
Orl	1	0	32	81	0.395	9	24	0.375	8	11	0.727
Ind	0	1	30	87	0.345	4	13	0.308	13	22	0.591
Orl	0	0	27	76	0.355	8	25	0.320	16	19	0.842
Ind	1	1	33	77	0.429	2	20	0.100	25	28	0.893
Ind	1	0	37	79	0.468	8	20	0.400	15	20	0.750
Orl	0	1	30	71	0.423	5	15	0.333	9	18	0.500
Ind	1	0	39	84	0.464	6	21	0.286	17	20	0.850
Orl	0	1	34	85	0.400	9	29	0.310	22	28	0.786
Orl	0	0	32	76	0.421	11	30	0.367	12	19	0.632
Ind	1	1	43	82	0.524	9	17	0.529	10	14	0.714
Bos	0	0	32	82	0.390	0	11	0.000	10	13	0.769
Atl	1	1	31	76	0.408	7	20	0.350	14	21	0.667
Bos	1	0	29	68	0.426	3	14	0.214	26	31	0.839
Atl	0	1	29	83	0.349	6	22	0.273	16	20	0.800
Atl	0	0	34	90	0.378	4	20	0.200	12	15	0.800
Bos	1	1	32	79	0.405	4	13	0.308	22	25	0.880
Atl	0	0	31	76	0.408	4	20	0.200	13	17	0.765
Bos	1	1	41	80	0.513	11	26	0.423	8	13	0.615
Bos	0	0	34	77	0.442	6	14	0.429	12	15	0.800
Atl	1	1	34	73	0.466	7	16	0.438	12	14	0.857
Atl	0	0	32	78	0.410	7	15	0.467	9	10	0.900
Bos	1	1	31	74	0.419	2	10	0.200	19	24	0.792

EXHIBIT 1 (CONT.)
2012 PLAYOFF GAME STATISTICS

	OREB	DREB	REB	AST	STL	BLK	TO	PF	PTS
Phi	12	26	38	18	10	5	11	21	91
Chi	10	37	47	28	6	6	18	23	103
Phi	7	31	38	23	7	7	7	18	109
Chi	10	22	32	23	3	4	8	11	92
Chi	15	34	49	22	5	6	15	26	74
Phi	12	31	43	13	8	3	8	20	79
Chi	11	37	48	21	5	7	14	23	82
Phi	12	34	46	16	6	6	8	18	89
Phi	11	38	49	14	7	11	14	18	69
Chi	8	41	49	22	8	11	15	21	77
Chi	15	41	56	19	4	6	12	19	78
Phi	5	28	33	19	7	6	7	18	79
Nyk	15	26	41	11	8	0	24	26	67
Mia	13	25	38	16	12	4	14	17	100
Nyk	12	28	40	15	3	2	13	22	94
Mia	7	26	33	28	6	3	8	17	104
Mia	7	33	40	11	13	3	17	21	87
Nyk	14	28	42	8	6	3	18	21	70
Mia	9	31	40	20	8	6	14	26	87
Nyk	10	33	43	16	6	1	17	29	89
Nyk	11	25	36	13	7	5	13	23	94
Mia	13	29	42	20	7	3	10	18	106
Orl	11	34	45	18	3	8	12	17	81
Ind	15	35	50	17	7	11	10	17	77
Orl	13	25	38	16	6	4	16	20	78
Ind	15	31	46	9	9	6	11	17	93
Ind	13	33	46	16	9	5	12	17	97
Orl	5	28	33	14	6	1	17	18	74
Ind	13	36	49	23	4	4	16	28	101
Orl	11	31	42	24	7	3	11	23	99
Orl	9	25	34	14	8	6	11	17	87
Ind	10	33	43	16	8	5	13	16	105
Bos	7	34	41	21	9	3	6	24	74
Atl	11	39	50	16	3	1	13	18	83
Bos	3	42	45	14	6	6	14	24	87
Atl	10	30	40	14	7	5	11	26	80
Atl	11	37	48	15	8	4	17	21	84
Bos	7	44	51	18	10	8	13	18	90
Atl	8	32	40	18	3	0	17	15	79
Bos	5	32	37	24	10	6	11	20	101
Bos	9	24	33	23	11	3	14	13	86
Atl	13	28	41	20	6	6	18	19	87
Atl	7	29	36	22	6	4	13	20	80
Bos	11	29	40	19	8	11	12	14	83

EXHIBIT 1 (CONT.)
2012 PLAYOFF GAME STATISTICS

	WIN	HOME	FGM	FGA	FG%	3PM	3PA	3P%	FTM	FTA	FT%
Uth	0	0	32	76	0.421	4	13	0.308	23	30	0.767
Sas	1	1	40	84	0.476	6	17	0.353	20	28	0.714
Uth	0	0	31	90	0.344	1	6	0.167	20	23	0.870
Sas	1	1	47	82	0.573	10	22	0.455	10	10	1.000
Sas	1	0	39	80	0.488	7	20	0.350	17	22	0.773
Uth	0	1	36	89	0.404	4	13	0.308	14	26	0.538
Sas	1	0	28	74	0.378	10	22	0.455	21	30	0.700
Uth	0	1	32	88	0.364	0	13	0.000	17	26	0.654
Dal	0	0	34	78	0.436	10	22	0.455	20	25	0.800
Okc	1	1	38	79	0.481	6	16	0.375	17	20	0.850
Dal	0	0	33	79	0.418	5	23	0.217	28	32	0.875
Okc	1	1	30	67	0.448	5	16	0.313	37	39	0.949
Okc	1	0	36	85	0.424	12	28	0.429	11	17	0.647
Dal	0	1	26	76	0.342	7	22	0.318	20	26	0.769
Okc	1	0	39	75	0.520	9	24	0.375	16	20	0.800
Dal	0	1	33	79	0.418	10	19	0.526	21	24	0.875
Den	0	0	32	90	0.356	4	14	0.286	20	27	0.741
Lal	1	1	43	86	0.500	6	17	0.353	11	15	0.733
Den	0	0	40	91	0.440	4	19	0.211	16	22	0.727
Lal	1	1	43	96	0.448	2	15	0.133	16	21	0.762
Lal	0	0	29	78	0.372	6	25	0.240	20	25	0.800
Den	1	1	37	93	0.398	6	16	0.375	19	23	0.826
Lal	1	0	39	86	0.453	5	17	0.294	9	18	0.500
Den	0	1	39	86	0.453	3	19	0.158	7	12	0.583
Den	1	0	39	85	0.459	3	19	0.158	21	27	0.778
Lal	0	1	35	90	0.389	9	24	0.375	20	26	0.769
Lal	0	0	35	83	0.422	4	14	0.286	22	30	0.733
Den	1	1	47	91	0.516	10	20	0.500	9	17	0.529
Den	0	0	35	89	0.393	7	26	0.269	10	14	0.714
Lal	1	1	35	89	0.393	11	24	0.458	15	23	0.652
Lac	1	0	38	76	0.500	6	18	0.333	17	23	0.739
Mem	0	1	38	85	0.447	11	16	0.688	11	18	0.611
Lac	0	0	38	67	0.567	9	16	0.563	13	18	0.722
Mem	1	1	36	75	0.480	2	12	0.167	31	39	0.795
Mem	0	0	26	65	0.400	4	13	0.308	30	39	0.769
Lac	1	1	33	70	0.471	8	17	0.471	13	30	0.433
Mem	0	0	36	83	0.434	4	13	0.308	21	27	0.778
Lac	1	1	34	76	0.447	5	16	0.313	28	40	0.700
Lac	0	0	26	70	0.371	7	24	0.292	21	29	0.724
Mem	1	1	32	72	0.444	0	6	0.000	28	34	0.824
Mem	1	0	35	77	0.455	3	10	0.300	17	27	0.630
Lac	0	1	34	79	0.430	4	15	0.267	16	25	0.640
Lac	1	0	30	78	0.385	4	17	0.235	18	23	0.783
Mem	0	1	25	77	0.325	0	13	0.000	22	31	0.710

EXHIBIT 1 (CONT.)
2012 PLAYOFF GAME STATISTICS

	OREB	DREB	REB	AST	STL	BLK	TO	PF	PTS
Uth	13	32	45	17	7	8	16	24	91
Sas	10	29	39	25	10	2	10	18	106
Uth	18	25	43	16	7	3	15	16	83
Sas	5	39	44	28	10	5	12	18	114
Sas	9	32	41	21	2	11	11	20	102
Uth	17	32	49	18	6	8	9	18	90
Sas	7	36	43	12	7	4	12	23	87
Uth	16	41	57	16	6	8	12	23	81
Dal	10	32	42	15	11	3	15	20	98
Okc	9	27	36	17	8	11	14	22	99
Dal	12	23	35	13	9	3	13	26	99
Okc	5	32	37	13	9	3	16	28	102
Okc	9	36	45	18	11	7	8	20	95
Dal	9	37	46	15	6	4	15	16	79
Okc	6	33	39	22	7	8	13	27	103
Dal	11	28	39	19	6	4	13	21	97
Den	16	30	46	17	6	4	10	18	88
Lal	11	41	52	22	6	15	11	22	103
Den	19	33	52	21	7	8	13	23	100
Lal	18	30	48	20	8	8	10	20	104
Lal	13	31	44	21	1	10	15	19	84
Den	19	35	54	23	9	5	6	25	99
Lal	19	29	48	22	4	7	13	13	92
Den	13	25	38	17	9	9	10	19	88
Den	8	35	43	19	7	5	7	19	102
Lal	15	33	48	20	6	5	9	20	99
Lal	13	29	42	23	6	7	11	17	96
Den	10	37	47	26	6	8	11	22	113
Den	23	31	54	23	5	9	18	21	87
Lal	24	26	50	22	10	14	11	20	96
Lac	13	34	47	19	8	7	17	19	99
Mem	14	27	41	19	3	1	12	22	98
Lac	4	24	28	15	8	6	20	29	98
Mem	16	21	37	12	13	7	12	17	105
Mem	8	32	40	19	10	4	17	26	86
Lac	7	28	35	18	11	5	17	27	87
Mem	19	28	47	18	2	4	16	34	97
Lac	10	26	36	18	8	8	9	26	101
Lac	8	27	35	11	7	5	13	26	80
Mem	10	32	42	14	6	5	12	20	92
Mem	15	33	48	20	5	9	20	24	90
Lac	10	22	32	21	13	6	7	24	88
Lac	13	33	46	12	10	6	16	28	82
Mem	12	32	44	12	11	4	13	20	72

EXHIBIT 1 (CONT.)
2012 PLAYOFF GAME STATISTICS

	WIN	HOME	FGM	FGA	FG%	3PM	3PA	3P%	FTM	FTA	FT%
Ind	0	0	31	77	0.403	4	17	0.235	20	28	0.714
Mia	1	1	33	81	0.407	0	6	0.000	29	38	0.763
Ind	1	0	28	74	0.378	3	15	0.200	19	27	0.704
Mia	0	1	27	78	0.346	1	16	0.063	20	29	0.690
Mia	0	0	29	78	0.372	4	20	0.200	13	18	0.722
Ind	1	1	33	76	0.434	8	14	0.571	20	23	0.870
Mia	1	0	38	80	0.475	5	12	0.417	20	28	0.714
Ind	0	1	33	79	0.418	7	22	0.318	20	24	0.833
Ind	0	0	30	89	0.337	6	21	0.286	17	23	0.739
Mia	1	1	43	70	0.614	9	16	0.563	20	29	0.690
Mia	1	0	41	76	0.539	7	20	0.350	16	20	0.800
Ind	0	1	34	70	0.486	6	17	0.353	19	24	0.792
Phi	0	0	36	82	0.439	5	14	0.357	14	20	0.700
Bos	1	1	36	82	0.439	2	18	0.111	18	19	0.947
Phi	1	0	31	76	0.408	5	14	0.357	15	21	0.714
Bos	0	1	33	79	0.418	8	18	0.444	7	9	0.778
Bos	1	0	40	77	0.519	5	11	0.455	22	28	0.786
Phi	0	1	33	81	0.407	8	15	0.533	17	22	0.773
Bos	0	0	30	71	0.423	7	23	0.304	16	19	0.842
Phi	1	1	31	82	0.378	5	11	0.455	25	36	0.694
Phi	0	0	36	77	0.468	3	9	0.333	10	16	0.625
Bos	1	1	36	69	0.522	3	15	0.200	26	33	0.788
Bos	0	0	26	78	0.333	3	14	0.214	20	23	0.870
Phi	1	1	32	70	0.457	1	9	0.111	17	28	0.607
Phi	0	0	28	80	0.350	5	18	0.278	14	20	0.700
Bos	1	1	31	73	0.425	3	17	0.176	20	22	0.909
Lac	0	0	37	83	0.446	9	19	0.474	9	13	0.692
Sas	1	1	39	80	0.488	13	25	0.520	17	21	0.810
Lac	0	0	31	63	0.492	9	13	0.692	17	23	0.739
Sas	1	1	42	79	0.532	10	25	0.400	11	17	0.647
Sas	1	0	35	76	0.461	9	22	0.409	17	25	0.680
Lac	0	1	37	80	0.463	3	9	0.333	9	18	0.500
Sas	1	0	38	72	0.528	6	15	0.400	20	27	0.741
Lac	0	1	41	86	0.477	4	16	0.250	13	19	0.684
Lal	0	0	35	81	0.432	7	16	0.438	13	15	0.867
Okc	1	1	44	83	0.530	7	17	0.412	24	29	0.828
Lal	0	0	30	78	0.385	2	15	0.133	13	14	0.929
Okc	1	1	29	69	0.420	6	17	0.353	13	16	0.813
Okc	0	0	33	83	0.398	4	17	0.235	26	28	0.929
Lal	1	1	27	70	0.386	4	11	0.364	41	42	0.976
Okc	1	0	38	77	0.494	6	16	0.375	21	25	0.840
Lal	0	1	37	86	0.430	5	18	0.278	21	29	0.724
Lal	0	0	34	75	0.453	2	11	0.182	10	26	0.385
Okc	1	1	42	90	0.467	3	13	0.231	19	25	0.760

EXHIBIT 1 (CONT.)
2012 PLAYOFF GAME STATISTICS

	OREB	DREB	REB	AST	STL	BLK	TO	PF	PTS
Ind	8	30	38	18	7	3	15	31	86
Mia	15	30	45	16	8	5	12	22	95
Ind	15	35	50	10	8	7	17	25	78
Mia	14	26	40	11	10	5	12	22	75
Mia	11	25	36	9	5	6	14	21	75
Ind	16	36	52	20	6	8	14	20	94
Mia	14	33	47	20	8	9	15	24	101
Ind	8	30	38	17	7	6	15	28	93
Ind	13	22	35	15	8	3	9	21	83
Mia	7	42	49	20	5	10	13	20	115
Mia	5	21	26	16	9	4	9	20	105
Ind	10	27	37	18	3	2	20	22	93
Phi	8	33	41	19	9	8	11	15	91
Bos	9	36	45	28	7	7	13	16	92
Phi	11	36	47	17	10	6	16	13	82
Bos	6	30	36	23	11	6	17	22	81
Bos	7	37	44	26	6	6	7	19	107
Phi	11	26	37	22	3	7	9	20	91
Bos	5	33	38	23	7	6	17	28	83
Phi	17	35	52	18	9	2	11	19	92
Phi	14	23	37	20	7	1	15	24	85
Bos	8	23	31	22	11	5	10	18	101
Bos	14	34	48	14	5	2	16	25	75
Phi	7	30	37	22	7	6	12	16	82
Phi	13	32	45	15	9	1	15	23	75
Bos	4	40	44	17	10	6	14	22	85
Lac	8	26	34	19	11	9	15	21	92
Sas	11	36	47	29	9	7	18	17	108
Lac	4	28	32	13	7	7	18	20	88
Sas	6	29	35	23	12	3	11	16	105
Sas	6	35	41	27	5	7	13	19	96
Lac	9	35	44	22	11	8	12	23	86
Sas	9	31	40	28	4	4	15	22	102
Lac	10	26	36	22	10	5	7	22	99
Lal	13	30	43	14	1	3	15	20	90
Okc	10	31	41	20	13	8	4	19	119
Lal	11	30	41	11	9	2	12	20	75
Okc	6	30	36	15	7	8	13	19	77
Okc	13	24	37	13	11	9	9	30	96
Lal	12	32	44	20	7	9	15	22	99
Okc	9	30	39	16	6	10	7	23	103
Lal	18	25	43	19	5	7	8	19	100
Lal	3	32	35	12	6	6	12	24	90
Okc	14	37	51	20	7	6	11	22	106

EXHIBIT 1 (CONT.)
2012 PLAYOFF GAME STATISTICS

	WIN	HOME	FGM	FGA	FG%	3PM	3PA	3P%	FTM	FTA	FT%
Bos	0	0	32	81	0.395	4	14	0.286	11	21	0.524
Mia	1	1	36	72	0.500	5	25	0.200	16	23	0.696
Bos	0	0	40	81	0.494	5	16	0.313	26	29	0.897
Mia	1	1	37	83	0.446	10	26	0.385	31	47	0.660
Mia	0	0	38	77	0.494	5	17	0.294	10	20	0.500
Bos	1	1	38	76	0.500	5	17	0.294	20	26	0.769
Mia	0	0	34	80	0.425	6	19	0.316	17	24	0.708
Bos	1	1	35	85	0.412	9	27	0.333	14	20	0.700
Bos	1	0	33	81	0.407	6	15	0.400	22	27	0.815
Mia	0	1	32	82	0.390	7	26	0.269	19	25	0.760
Mia	1	0	37	76	0.487	7	16	0.438	17	22	0.773
Bos	0	1	32	75	0.427	1	14	0.071	14	20	0.700
Bos	0	0	35	75	0.467	6	19	0.316	12	15	0.800
Mia	1	1	36	70	0.514	9	26	0.346	20	27	0.741
Okc	0	0	35	83	0.422	9	23	0.391	19	23	0.826
Sas	1	1	38	83	0.458	8	24	0.333	17	25	0.680
Okc	0	0	37	88	0.420	8	17	0.471	29	36	0.806
Sas	1	1	43	78	0.551	11	26	0.423	23	35	0.657
Sas	0	0	30	76	0.395	11	26	0.423	11	15	0.733
Okc	1	1	40	88	0.455	6	22	0.273	16	17	0.941
Sas	0	0	41	82	0.500	11	23	0.478	10	16	0.625
Okc	1	1	44	78	0.564	5	13	0.385	16	21	0.762
Okc	1	0	40	80	0.500	8	21	0.381	20	23	0.870
Sas	0	1	34	74	0.459	9	24	0.375	26	31	0.839
Sas	0	0	37	84	0.440	11	26	0.423	14	18	0.778
Okc	1	1	36	72	0.500	10	18	0.556	25	31	0.806
Mia	0	0	36	78	0.462	8	19	0.421	14	18	0.778
Okc	1	1	40	77	0.519	5	17	0.294	20	27	0.741
Mia	1	0	36	76	0.474	6	14	0.429	22	25	0.880
Okc	0	1	34	79	0.430	9	26	0.346	19	26	0.731
Okc	0	0	33	77	0.429	4	18	0.222	15	24	0.625
Mia	1	1	28	74	0.378	4	13	0.308	31	35	0.886
Okc	0	0	40	82	0.488	3	16	0.188	15	16	0.938
Mia	1	1	38	79	0.481	10	26	0.385	18	25	0.720
Okc	0	0	36	87	0.414	11	28	0.393	23	26	0.885
Mia	1	1	40	77	0.519	14	26	0.538	27	33	0.818

EXHIBIT 1 (CONT.)
2012 PLAYOFF GAME STATISTICS

	OREB	DREB	REB	AST	STL	BLK	TO	PF	PTS
Bos	10	23	33	19	6	1	8	19	79
Mia	13	35	48	17	4	11	12	21	93
Bos	8	34	42	15	5	2	8	33	111
Mia	13	29	42	24	7	5	8	18	115
Mia	6	26	32	20	5	5	10	24	91
Bos	12	32	44	16	4	4	12	24	101
Mia	7	33	40	20	6	6	17	28	91
Bos	11	28	39	22	6	7	15	30	93
Bos	9	30	39	19	13	4	12	21	94
Mia	12	37	49	13	6	3	15	21	90
Mia	10	34	44	15	8	4	12	21	98
Bos	7	27	34	14	9	3	13	19	79
Bos	7	26	33	19	10	2	13	24	88
Mia	9	29	38	16	8	3	13	14	101
Okc	9	34	43	18	11	9	13	24	98
Sas	12	38	50	22	5	2	16	18	101
Okc	16	24	40	19	10	8	10	28	111
Sas	8	33	41	27	3	8	13	26	120
Sas	12	29	41	18	2	7	21	19	82
Okc	12	32	44	23	14	9	7	16	102
Sas	7	24	31	17	5	2	10	20	103
Okc	7	34	41	27	5	5	12	15	109
Okc	6	28	34	22	12	5	16	25	108
Sas	10	32	42	23	8	1	21	25	103
Sas	9	25	34	20	9	2	12	24	99
Okc	6	36	42	18	6	6	15	18	107
Mia	7	28	35	20	6	1	10	19	94
Okc	10	33	43	22	5	3	10	16	105
Mia	11	29	40	13	5	4	13	21	100
Okc	10	26	36	14	9	9	10	22	96
Okc	11	27	38	11	9	8	11	25	85
Mia	14	31	45	13	6	5	12	19	91
Okc	8	27	35	13	6	2	11	20	98
Mia	9	31	40	19	8	2	9	18	104
Okc	10	28	38	19	7	3	13	29	106
Mia	8	33	41	25	8	7	13	21	121

EXHIBIT 2
CORRELATION MATRIX

	WIN	HOME	FGM	FGA	FG%	3PM	3PA	3P%	FTM	FTA	FT%
WIN	1.000										
HOME	0.357	1.000									
FGM	0.337	0.131	1.000								
FGA	-0.148	0.016	0.388	1.000							
FG%	0.438	0.128	0.842	-0.166	1.000						
3PM	0.141	0.044	0.315	-0.008	0.341	1.000					
3PA	0.015	0.020	0.100	0.065	0.063	0.734	1.000				
3P%	0.159	0.022	0.356	-0.080	0.432	0.817	0.264	1.000			
FTM	0.227	0.168	-0.211	-0.239	-0.084	-0.142	-0.091	-0.162	1.000		
FTA	0.218	0.220	-0.202	-0.235	-0.074	-0.160	-0.122	-0.171	0.911	1.000	
FT%	0.081	-0.083	-0.081	-0.090	-0.038	0.001	0.074	-0.057	0.467	0.087	1.000
OREB	-0.088	0.044	-0.103	0.512	-0.402	-0.209	-0.100	-0.206	0.115	0.135	-0.009
DREB	0.347	0.118	0.034	0.055	-0.002	-0.043	-0.054	-0.016	0.002	-0.015	0.036
REB	0.225	0.125	-0.039	0.377	-0.263	-0.171	-0.109	-0.147	0.077	0.076	0.024
AST	0.256	0.191	0.569	0.271	0.449	0.300	0.085	0.338	-0.152	-0.121	-0.098
STL	0.117	0.104	0.007	-0.001	0.005	-0.010	0.016	-0.069	0.115	0.082	0.106
BLK	0.231	0.107	0.169	0.166	0.086	-0.018	-0.073	0.044	-0.041	-0.011	-0.115
TO	-0.137	-0.183	-0.337	-0.409	-0.121	0.098	0.073	0.106	-0.069	-0.113	0.081
PF	-0.227	-0.248	-0.103	-0.051	-0.082	-0.015	0.067	-0.052	0.186	0.168	0.094
PTS	0.444	0.211	0.825	0.196	0.767	0.452	0.225	0.429	0.320	0.283	0.167

	OREB	DREB	REB	AST	STL	BLK	TO	PF	PTS
OREB	1.000								
DREB	-0.078	1.000							
REB	0.587	0.762	1.000						
AST	-0.089	0.179	0.088	1.000					
STL	-0.135	-0.152	-0.212	-0.082	1.000				
BLK	0.153	0.238	0.293	0.179	0.048	1.000			
TO	-0.001	0.123	0.100	-0.137	-0.151	-0.122	1.000		
PF	-0.035	-0.035	-0.051	-0.150	-0.006	-0.041	0.242	1.000	
PTS	-0.092	0.020	-0.043	0.477	0.063	0.118	-0.301	0.013	1.000

Correlation	Significance
0 – .150	Not Significant
.150 – .196	p < .05
.196 – .248	p < .01
.248 – 1.000	p < .001

EXHIBIT 3
BEST MULTIPLE REGRESSION MODEL

Regression Statistics	
Multiple R	0.656734153
R Square	0.431299748
Adjusted R Square	0.417343913
Standard Error	0.38280055
Observations	168

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	18.11458941	4.5286474	30.904619	3.8117E-19
Residual	163	23.88541059	0.1465363		
Total	167	42			

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-2.63871386	0.320640987	-8.229496	5.706E-14
HOME	0.226812118	0.061001964	3.7181117	0.0002757
FG%	3.756293504	0.524876827	7.1565238	2.672E-11
DREB	0.033921313	0.006292392	5.3908452	2.424E-07
FTM	0.018510468	0.004976996	3.719205	0.0002746