Chapter 13

Teamwork 3: Distributing Credit among Cooperating Players

Players don't win games, teams do. As a result, players shouldn't look for their own points, they should look to maximize *team* points. Players shouldn't care about stopping their own man if it means that other guys are scoring easily against teammates. Basketball is a team game, where winning *as a team* is all that matters . . .

Or does it? The Ultimatum Game experiments (see chapter 10) do suggest that something about our humanity forces us to assign uneven credit for team accomplishments. The player offering the money seems to expect a little more than the player accepting the offer. It's not quite a fifty-fifty split. Teammates on a basketball team seem to behave in a similar fashion. A talented player not only wants to win; he wants to be the player leading the team to victory. The player who leads a team to a title enjoys more satisfaction than the player who gets one minute playing defense at the end of the first half of that title game.

As egalitarian as the philosophers would like us to be, we nevertheless instinctively assign individual credit in a team victory. We often name an MVP of a tournament or of a championship series; All-League Teams are compiled. The apparent reason for assigning individual credit is that we all have some need to understand the components of success: What created that championship team? We try to deconstruct a team's success as a hacker tries to deconstruct Microsoft software. Well, maybe not to that degree. Most of us are too lazy to really break down team success (or failure) in any detail. We offer our opinions and arguments, some logical, some purely emotional. We add our votes to those of others.

But basketball consists of an almost endless series of team events that could be broken down to assign credit to individual teammates. It's not just the performance of a championship team that can get broken down. It's every little play that any team runs and every defense that it sets up. That's why Dick Vitale, Billy

Packer, Matt Guokas, and Doug Collins (once he gets fired or quits again) have jobs on TV—to tell us what an outstanding play Joe Point Guard made in recognizing Frankie Forward's coming free on the baseline behind the defense. These former coaches recognize where credit is due in every play, i.e., who was responsible for what and how well they did it.

My original hope for this chapter was to get a few current coaches to actually assign numbers to the credit they mentally assess. For instance, if a point guard passes to that wide-open big guy near the basket, how do you split credit for the two points between the two players? Do you give one point to the passer and one point to the guy who made the shot? Do you give a point and a half to the assist man who saw through his own defender and only a half point to the guy who dunked the ball with no one around him?

I asked a few coaches questions like these using numerous different scenarios involving clear examples of teamwork, hoping to get their opinions and arguments. What I found out is that coaches hate answering these questions on the record, especially if there is "blame" to be assigned. A typical response: "We as a team, coaches included, share in all things. We don't blame any one person for a mistake. We work to correct the mistake." Good attitude, coach. But it doesn't shed any light on what many coaches really do, which is to account for interactions and responsibilities among teammates. So I tried again, simplifying my questions so that they didn't require "blame" or "credit" to be assigned. I asked the following:

> Coaches often look for a player who can distribute the ball to scorers. Coaches also look for scorers. Which is more important? If you have a great distributor and no creative scorers, but another great distributor comes along, what do you do? On the other hand, if you have a great creative scorer and no distributor, but another great scorer comes along, what do you do?

Phrasing the questions this way helped. Coaches did express some preference for having a scorer over a passer. My interpretation of their replies is that they'd assign more credit to a guy who made the basket than to a guy who passed him the ball. An equally correct interpretation is that coaches feel that scorers are in shorter supply than passers. Maybe it is appropriate to say that scoring is more difficult than passing.

That last statement is the basis for my personal Difficulty Theory for Distributing Credit in Basketball: The more difficult the contribution, the more credit it deserves.

- Example 1: On an assist to a big man underneath the basket, the passer gets relatively more credit because most defenses are not going to let a big man get open too often, so a passer seeing that opening deserves relatively more credit.

- Example 2: On a fluke assist to a big man who has no three-point range but makes a wide-open trey because the defense doesn't respect him, the theory gives the passer very little credit because his pass was probably being lightly defended and was virtually guaranteed to be completed, whereas the made shot—even with a defender giving the big man an open look—was quite unlikely.

Another way of viewing these two examples is to consider how much each player's contribution improves the team's expected number of points scored. On any possession in the NBA, the expected number of points to be scored is about one. After a pass to a big man under the hoop, you gotta think that the odds of the team scoring at least two points (maybe three, on a foul) go up. You can see this diagrammatically in figure 13.1, where I've assumed that the big man's dunk is an 85-percent proposition and that he doesn't get fouled after making the shot.

On the other hand, in the second example, after a pass to a poor-shooting big man on the perimeter, you assume that the passer is merely starting the offense, not significantly raising the odds of scoring. That big man's act of taking the shot surprises his defender, who is giving him that shot anyway, and if it goes in, most or all of the credit goes to that big man. This is represented in figure 13.2, where I've assumed that the big man was very unlikely to take the shot and, hence, that the expected value of the possession did not change with the pass to him.

Numerically, it's easy to read one type of "credit" in these two charts. The transition from the first bar to the second bar is the credit given to the passer, 0.7 in the first case and 0.0 in the second. The transition from the second bar to the third is the credit given to the scorer, 0.3 in the first case and 1.0 in the second. If

Figure 13.1. How Expected Points Changes with Pass to Big Man under the Basket

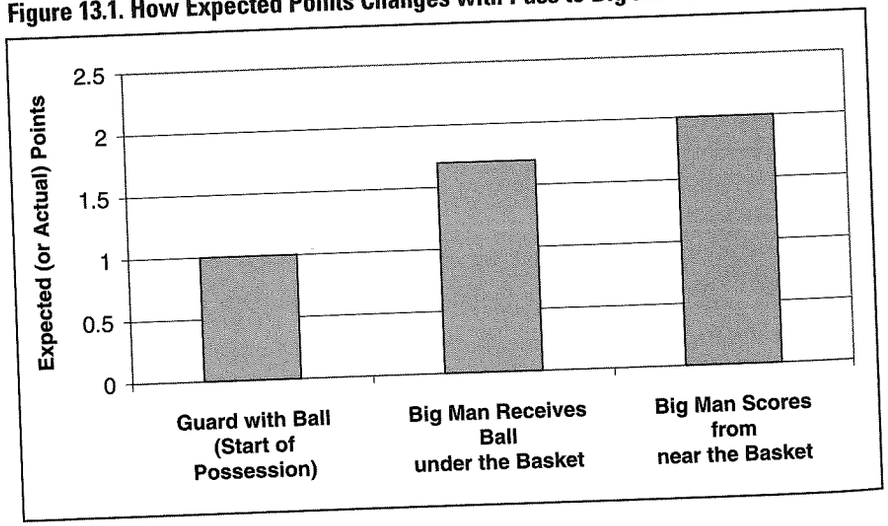
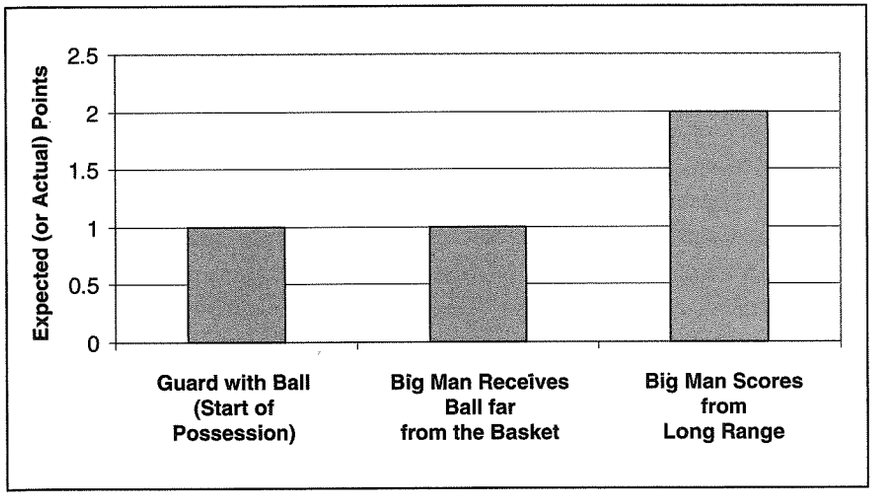


Figure 13.2. How Expected Points Changes with Pass to Big Man far from the Basket



you're going to split the two points of each possession between the two players, it would look like this:

- Case 1: Passer gets 1.4 points and scorer gets 0.6 points.
- Case 2: Passer gets 0.0 points and scorer gets 2.0 points.

That's my Difficulty Theory, in a nutshell. All you have to do is watch every single game, estimate the chance of scoring as a consequence of every dribble, pass, pick, and shot, then add things up.

Or you can make some estimates.

Some Implications of the Difficulty Theory on Player Behavior

This theory is a powerful one. It rewards cooperating players according to the needs of the team. If the team needs more shooters and fewer passers (passes are easier and field goal percentages are low), greater credit goes to players who can shoot. If a defense is pressuring every pass at the cost of easier shots, passers get relatively greater credit for their contribution to a team score. If a player is both a good passer and a good shooter, this theory says that how much he should do of each depends on his teammates' abilities. This interactive weighting dictates that a player's stats should change if his teammates' skills change, in order to optimize the scoring potential of his team. If a player has better shooting teammates around him, it makes more sense to get them the ball. Hence, an assist on a good shooting team tends to be more valuable than one on a poor shooting team.

Don't get confused, though! If you have a poor shooting team, that does not mean that you shouldn't pass the ball. Rather, it means that you need to find ways to get the ball to teammates in better shooting positions, making more of an effort to get the ball to them nearer the basket or in their favorite spots.

This Difficulty Theory also has the benefit of being applicable not only to situations involving an assist to a scorer, but also to other team accomplishments where two or more players cooperate toward that accomplishment. On defense, it takes one player to force his guy to miss a shot and (often) another player to get the defensive rebound. How you distribute credit to those two guys follows the same rule. Who did the harder job? In the NBA, where teams shoot around 45 percent and collect about 70 percent of their opponents' missed shots, it is harder to force guys to miss shots (forcing the miss is successful about 55 percent of the time) than to get the defensive rebounds (again, a team is able to grab the defensive board about 70 percent of the time). So good shot defenders are relatively more important than good defensive rebounders in the NBA. At lower levels, where shooting isn't as good and offensive rebounding is better, this theory shifts relatively more weight toward getting defensive rebounds and dictates that teams should shift emphasis to defensive rebounds in order to improve defense.

Another example of teamwork is when a player gets an offensive rebound that leads to a team score. This is a little different from the previous examples because an offensive rebound does not necessarily mean that a score will occur, nor is an offensive rebound necessary for there to be a team score. An offensive rebound really only increases the odds of a team scoring on a possession—and, according to chapter 6, it might increase the odds quite a bit. Because there isn't as much cause-and-effect with an offensive rebound, assigning credit is more complicated, something I'll discuss for persistent readers below. In general, however, rebounds are more valuable when they are relatively rare. If it is more difficult to get an offensive rebound and also relatively easy to score following a rebound (something that seems to be true), that implies higher value to the offensive rebound. On the other hand, if offensive rebounds are plentiful, but the guys getting them just can't score, that makes the offensive rebounds less valuable.

Two Points Is Two Points Is Two Points

The other important concept in splitting credit among teammates has gone unstated to this point but deserves mention. That concept is that the sum of the parts is neither greater than nor less than the whole. You can't give Kobe Bryant 50 percent of the credit on an assist to Shaq and also give Shaq 80 percent of the credit. Equivalently, you can't say that the value of such a possession is more than the two points that Shaq scored. Kobe and Shaq have to split credit for those two

points. You can't give Shaq two points for the basket and Kobe one point for the assist, something that I have heard argued because, as they say, "passing is an important part of the game." Passing is important—assists per field goal shows a correlation with offensive efficiency in chapter 3. I'd rather not give *extra* credit for that, but give relatively more credit to the passers who are making their shooters more efficient.

There are several benefits of constraining credit so that points or wins add up to real totals.[1] The first benefit is that the results "look real." If you create an individual points produced formula that sums to the team total points scored, that implies that you can say a player "produced thirty-four points," rather than saying he "produced forty-five credits," where "credits" are something that don't quite match anything real. Points are something a coach understands, whereas "credits" are not.

The second benefit of this constraint is that it forces value judgments. Most of us like looking at the good things that people do and neglecting some of the bad things, and we tend to cave in to that optimistic nature. Shaq is a great player, so let's give him lots of money! Kevin Garnett is a great player, so let's give him lots of money! Jerry Stackhouse is a great player, so let's give him lots of money! Dikembe Mutombo is a great player, so let's give him lots of money! This constraint says that you need to be careful about assessing who is so "great." It also says that you can't really have a bunch of good players on a team with a bad record. Antawn Jamison may have scored fifty points in back-to-back games in 2001, but he couldn't have been worth more than seventeen wins to the team that season because it won only seventeen games (and only one of his two fifty-point games). And the Warriors still said: "Let's give him lots of money!" Even if Jamison was worth nine wins to the Warriors, that would mean that near–Rookie of the Year Marc Jackson, shooting guard Larry Hughes, point guard Mookie Blaylock, sixth man Bob Sura, center Erick Dampier, and the other sixteen players on the team have to split eight wins. They weren't worth as much as Jamison alone! Having this constraint is like making a budget where you have a fixed amount of money to spend on food, rent, gas, utilities, and entertainment. You gotta find ways to cut. And you can't borrow to do it.

Individual Offensive Ratings and Floor Percentages

I use the difficulty concept to split credit among cooperating teammates, both for offense and for defense. It allows unique assignment of team success to the teammates who cooperated to create that success. In this chapter, I'll present only the formulas for the offensive contributions, contributions splitting the team points

and the team scoring possessions to arrive at formulas for *individual* floor percentage and *individual* offensive ratings. (I saved the individual defensive formulas for chapter 17.) Both of these individual offensive statistics are exactly analogous to the team statistics you've seen up to this point:

- *Individual floor percentage* is an individual's scoring possessions divided by his total possessions. It answers the question, "What percentage of the time that a player wants to score does he actually score?" A player like Shaq will do very well here because he shoots well, commits few turnovers, and gets to the line a lot.
- *Individual offensive rating* is the number of points produced by a player per hundred total individual possessions. In other words, "How many points is a player likely to generate when he tries?" Though Shaq may have a high individual floor percentage, his poor foul shooting means that he has a lot of one-point possessions, bringing his offensive rating down a bit. Good three-point shooters like Reggie Miller, who may not have the highest floor percentage, will have higher offensive ratings.

In looking at team numbers, you've actually seen a lot more offensive ratings than floor percentages up to now. In looking at individuals, you will often see both of these measures because they do reflect style differences. How individual players put points on the board is much more variable than how teams as a whole put points on the board.

There are three key elements that go into creating individual floor percentages and ratings. These three elements and their formulas are given below without significant explanation (see Appendix 1).

Individual scoring possessions reflect a player's contributions to a team's scoring possessions. The first contribution is through field goals, sharing credit with those who assisted on the shots:

$$\text{FG Part} = \text{FGM} \times \left(1 - \frac{1}{2} \times \frac{\text{PTS} - \text{FTM}}{2 \times \text{FGA}} \times q_{AST}\right)$$

where

$$q_{AST} = \frac{\text{MIN}}{\text{TMMIN}/5} q_5 + \left(1 - \frac{\text{MIN}}{\text{TMMIN}/5}\right) q_{12}$$

where

$$q_5 = \sum_{i \neq n} \frac{\text{AST}_i}{\sum_{k \neq i} \text{FGM}_k}$$

$$q_{12} = \frac{\frac{\text{TMAST}}{\text{TMMIN}} \times \text{MIN} \times 5 - \text{AST}}{\frac{\text{TMFGM}}{\text{TMMIN}} \times \text{MIN} \times 5 - \text{FGM}}$$

(A simplified approximate equation for q_5 is $q_5 \approx 1.14 \times \frac{\text{TMAST} - \text{AST}}{\text{TMFGM}}$.)

The second contribution is a player's own assists, which earns him credit based on how easy he made the shots for teammates:

$$\text{AST Part} = \frac{1}{2} \times \frac{(\text{TMPTS} - \text{TMFTM}) - (\text{PTS} - \text{FTM})}{2 \times (\text{TMFGA} - \text{FGA})} \times \text{AST}$$

The third contribution is through free throws:

$$\text{FT Part} = \left[1 - (1 - \text{FT\%})^2\right] \times 0.4 \times \text{FTA}$$

Finally, all of these contributions are aided by offensive rebounds. So you have to remove some credit from the above parts but also add back credit for the player's offensive rebounds, giving this equation:

$$\begin{aligned}\text{Scoring Possessions} = {} & (\text{FG Part} + \text{AST Part} + \text{FT Part}) \\ & \times \left(1 - \frac{\text{TMOREB}}{\text{TMScPoss}} \times \text{TMOREB weight} \times \text{TMPlay\%}\right) \\ & + \text{OREB} \times \text{TMOREB weight} \times \text{TMPlay\%}\end{aligned}$$

That "TMOREB weight" is given by

$$\text{TMOREB weight} = \frac{(1 - \text{TMOR\%}) \times \text{TMPlay\%}}{(1 - \text{TMOR\%}) \times \text{TMPlay\%} + \text{TMOR\%} \times (1 - \text{TMPlay\%})}$$

and the explanation for why it's there is in Appendix 1.

Individual total possessions is the total number of team possessions that a player can be considered responsible for. This includes scoring possessions, missed field goals that aren't rebounded, missed free throws that aren't rebounded, and turnovers, giving this formula:

$$\text{Possessions} = \text{Scoring Possessions} + \text{Missed FG Part} + \text{Missed FT Part} + \text{TOV}$$

The scoring possessions make up the hard part. The others are easy:

$$\text{Missed FG Part} = (\text{FGA} - \text{FGM}) \times (1 - 1.07 \times \text{TMOR\%})$$

$$\text{Missed FT Part} = (1 - \text{FT\%})^2 \times 0.4 \times \text{FTA}$$

Individual points produced is the number of points a player produces through scoring possessions, accounting for three-point shots and how well he does at the foul line. The formula ends up looking a lot like the scoring possession formula, which is ugly:

$$\text{Points Produced} = (\text{FG Part} + \text{AST Part} + \text{FT Part}) \times \left(1 - \frac{\text{TMOR}}{\text{TMScPoss}} \times \text{TMOR weight} \times \text{TMPlay\%}\right) + \text{OR part}$$

The "parts" are different here than for scoring possessions, though. They are different almost exclusively in that they are scaled up by the number of points each scoring possession creates.

$$\text{FG Part} = 2 \times \left(\text{FGM} + \frac{1}{2} \times \text{FG3M}\right) \times \left(1 - \frac{1}{2} \times \frac{\text{PTS} - \text{FTM}}{2 \times \text{FGA}} \times q_{AST}\right)$$

$$\text{AST Part} = 2 \times \frac{\text{TMFGM} - \text{FGM} + \frac{1}{2}(\text{TMFG3M} - \text{FG3M})}{(\text{TMFGM} - \text{FGM})} \times \frac{1}{2} \times \frac{(\text{TMPTS} - \text{TMFTM}) - (\text{PTS} - \text{FTM})}{2 \times (\text{TMFGA} - \text{FGA})} \times \text{AST}$$

$$\text{FT Part} = \text{FTM}$$

$$\text{OR part} = \text{OR} \times \text{TMOR weight} \times \text{TMPlay\%} \times \frac{\text{TMPTS}}{\text{TMFGM} + [1 - (1 - \text{TMFT\%})^2] \times 0.4 \times \text{TMFTA}}$$

That spinning feeling you currently are experiencing is temporary. Or maybe it just becomes so permanent that you don't notice it anymore. For the people who really want to calculate the numbers, those are the offensive formulas that I rely on. The formulas apply different weights to different stats for different players based on the difficulty the players face in recording those stats. For stats that come easily, players get relatively less weight than for stats that are more difficult to post. Notice, as mentioned several chapters ago, that individual floor percentage and individual offensive ratings are not just sums of good statistics and bad statistics. If you really want to understand the details for the formulas, see Appendix 1.

The difficulty concept provides a way to parse out the credit for things that *can be* measured, not just calculated—team floor percentage and team offensive ratings. These are absolutely real things that determine the success of a team. They are not artificial constructions of quality. By breaking them down using the difficulty concept, I wanted to assemble offensive statistics for individuals that were also real—not artificial constructions of statistics that didn't have meaning. The next chapter looks at some of the numbers for individuals and shows how their team offensive success followed.

Endnote

1. There are two ways to constrain credit so that points or wins add up. One way is to do it beforehand—as you give one player credit for 25 percent of a score, you remove that credit from other players. The other way is to assign all credit up front without regard to constraints, then, after summing all points (or wins or whatever real factor you're interested in), scale everyone's credit so that the sum matches the true total. The first way is more difficult, but a better test of the validity of the method. Even though the first way may not exactly replicate team values, if it is close, it says that the method is calibrated to reality. The second way is called "normalization" or, sometimes, "cheating." It usually replicates the team results exactly, but does so by forcing it. In this book, most methods involve distributing credit using the first method. There may be times where the second method is used, but not commonly.

Chapter 14

Individual Floor Percentages and Offensive Ratings

This chapter is about the numbers that are individual floor percentages and offensive ratings—two of the most important stats in this book. They tell *me* a lot about the offensive capabilities of players. Just as a team's offensive rating tells me its ability to produce points per possession, an individual's rating and floor percentage tell me how that person contributes to the team rating. These stats tell me how efficient a player is in creating a score and, because efficiency is what wins games, they tell me a lot about that, too. This chapter should help *you* to see how these stats tell you the same things.

Before jumping into all the numbers, it is important to point out that these two stats are essentially measurements—not artificial ratings of quality. There is no magic floor percentage or rating that is "good" in every league, in the way that a B means "good" in school. Just as a 40-percent field goal percentage may be great in a middle school league and horrible in the NBA, a team that produces eighty-five points per hundred possessions may be good for high school girls and bad in the WNBA. In order to really know what to expect for your high school league, your church league, or your recreational league, it is useful to just calculate team offensive ratings to set an average. From my experience calculating these for some of the lower levels, my sense is that the average ratings for the different age groups look approximately like those in table 14.1.

Table 14.1. Approximate Ranges of Ratings by Level

Level	Boys/Men	Girls/Women
High School	70–120	60–105
Division III College	80–120	70–105
Division II College	85–120	75–105
Division I College	85–120	80–105
Pro	95–115	85–105

I'm more confident in the pro ranges than those for the other levels, where data are somewhat sporadic. The ranges illustrate, though, that as players move up levels, the offensive skills usually get more refined. Individual player variability will, of course, be larger than the team ranges displayed here.

That is a big-picture context for applying the formulas at most any level. The greatest availability of data to illustrate actual numbers is in the NBA. The full history of numbers helps show how good offensive teams are structured, how good the great players can be, how the skills of certain positions can change through time (think of the centers), and how role players can be very useful in making a good offense. Most importantly, the NBA numbers show pretty clearly that these two stats are good predictors of performance. Beyond the NBA, the WNBA now has at least five years of good statistics, which is enough for me to do a little bit of analysis in the attached box.

The NBA Average

The individual ratings and floor percentages for NBA players should be couched by the NBA league averages, which have changed through time. Figure 14.1 shows both the average rating and floor percentage since 1974. That chart gives the kind of perspective that is necessary to evaluate players. A player who scored on 55 percent of his possessions in the 1980s, when the average was about 0.53, was above average—pretty good. A player who had a floor percentage of 0.55 in 2002, when the league average was about 0.49, was a *very* good offensive player. On the other hand, whereas few players until the mid-1980s had offensive ratings much higher than 120, there are many specialist three-point shooters now who can attain ratings that high. The rest of this chapter will give examples of the numbers put up by players of differing styles, while keeping in mind how the league has changed when looking at those numbers.

The 2002 Los Angeles Lakers

With Shaq and Kobe and a bunch of bums, the Lakers' offense turned in an offensive rating of 109.4 in 2002, above the league average of 104.5. Their stars did a great job. But what about the supporting cast? How did they look? The numbers for these Lakers are in table 14.2.

Shaq scored on 59 percent of his total possessions, a truly remarkable number in 2002 and the second best in the league among players producing at least fifteen points per game. His offensive rating of 116 is also quite good, but only fifth in the league. Though Shaq is the best at creating a score, he misses enough foul shots and makes no three-pointers, meaning that his offensive rating is not quite as high. Overall, Shaq produced 24.9 points per game through his various

Figure 14.1. NBA Historical Average Floor Percent and Rating

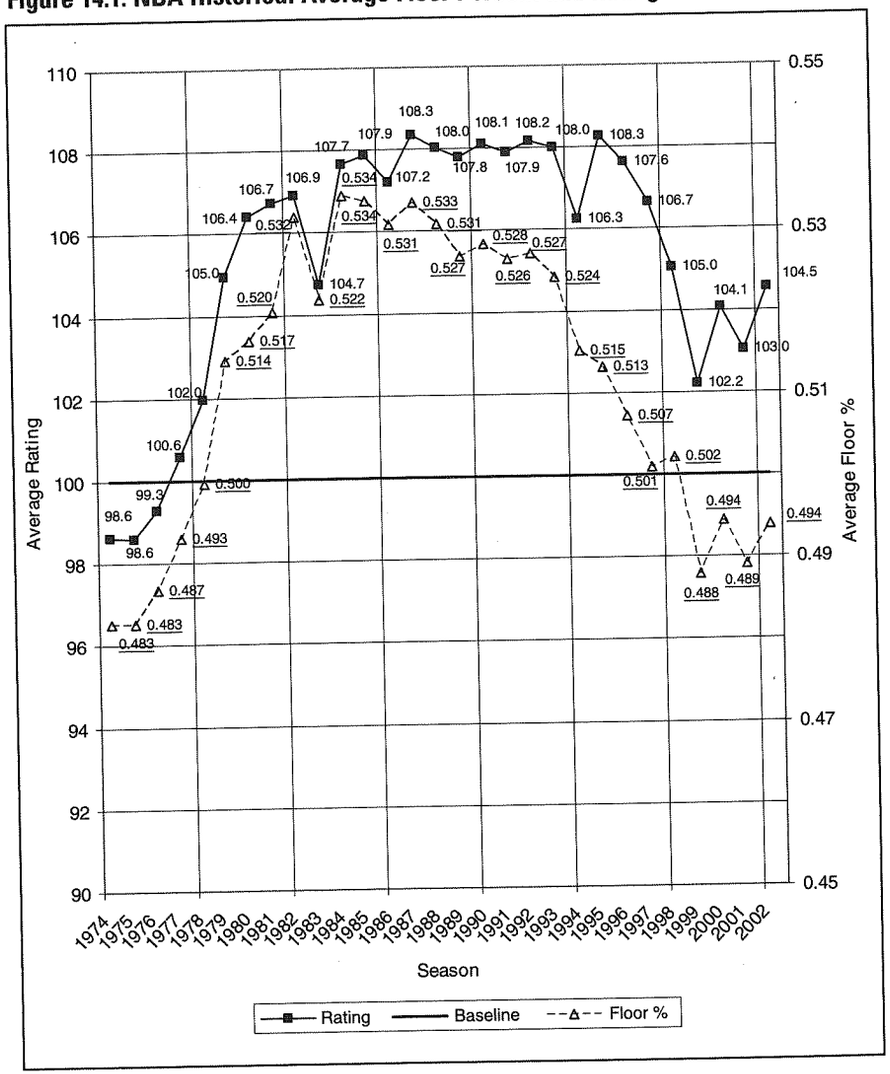


Table 14.2. Lakers' 2002 Individual Floor Percentages and Offensive Ratings

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss
Shaquille O'Neal	67	855	1441	0.59	116	24.9	31%
Kobe Bryant	80	949	1766	0.54	112	24.7	30%
Derek Fisher	70	299	633	0.47	114	10.3	17%
Rick Fox	82	327	702	0.47	103	8.8	16%
Robert Horry	81	287	569	0.50	114	8.0	14%
Devean George	82	261	544	0.48	106	7.0	16%
Samaki Walker	69	239	421	0.57	114	7.0	13%
Lindsey Hunter	82	194	463	0.42	98	5.5	15%
Stanislav Medvedenko	71	167	321	0.52	105	4.7	23%
Mitch Richmond	64	113	255	0.44	98	3.9	19%
Mark Madsen	59	106	186	0.57	115	3.6	15%
Brian Shaw	58	84	195	0.43	100	3.4	16%
Mike Penberthy	3	3	3	0.77	156	1.8	15%
Joseph Crispin	6	5	12	0.40	81	1.6	23%
Jelani McCoy	21	14	30	0.47	94	1.4	15%

efforts, lower than his 27.2 scoring average because he received assists on a fair number of his shots.

Kobe was right below him, producing 24.7 points per game, which is barely less than his 25.2 scoring average. Kobe averaged 5.5 assists per game, so he was helping out on a lot of other players' scores. He wasn't nearly as efficient from the floor as Shaq, scoring on only 54 percent of his attempts, but he made up for it partially by making his foul shots and hitting some threes, bringing his offensive rating up to 112. Relative to the league averages of 0.494 and 104.5, Kobe's numbers are still quite high.

Derek Fisher is a great complement to this team. He stands on the perimeter and makes enough jumpers that he himself is efficient. His offensive rating of 114 means that teams cannot ignore him or he'll hurt them. Sure, he plays off the fact that Shaq is down low to draw defenders away, but the threat of him making jumpers reciprocally helps keep defenders off of Shaq. Instead, you should probably double-team and leave some other player open, such as . . .

Vanessa Williams's husband, Rick Fox, hasn't proven himself to be a great offensive player. Like Ron Harper before him, Fox has provided solid defense on a team that didn't need much offensive help. Like Harper before him, Fox was more efficient in a couple of previous years, producing 110 points per hundred possessions in 2001, for example. But he's never been able to be a consistent offensive threat, even with the presence of the big two. Of the top five point producers on this team, Fox is the only one with a below-average offensive rating, implying that defenses should perhaps try to force him to use more possessions (chapter 19 goes beyond this concept to examine how Fox's efficiency changes with responsibility and how it affects team dynamics).

Fifth on the Lakers scoring list is Robert Horry, the player whose shots in the playoffs have doomed opponents since 1994. Horry's offensive numbers resemble those of Fisher: high rating, relatively low floor percentage, and not a lot of points produced per game. Notice the far right column in table 14.2—"% Team Possessions." What this captures is the percentage of the team's possessions a player contributes to when he's in the game. Horry has to do something on only 14 percent of the Lakers' possessions, which is one out of every seven possessions, rather than one out of every five, which is what you'd expect with five guys on the court. Shaq and Kobe carry 61 percent of the team's possessions when they're in the game together, an average load for three guys. That leaves 39 percent for Kobe and Shaq's teammates to handle. That's only 13 percent per guy, so Horry's 14 percent is actually more than his adjusted share. But the fact remains that Horry and Fisher are efficient because they don't have to do too much. When players like Fox, Devean George, and Lindsey Hunter aren't very efficient, that implies to me that they aren't very good offensive players.

Below Horry are a bunch of other Lakers who are perceived as pretty replaceable. Samaki Walker and Mark Madsen posted efficient numbers without carrying a heavy possession load. They are likely benefiting from the presence of Shaq and Kobe. They also might be getting a fair number of garbage minutes.

In general, what I have found is that the kind of offensive structure that the Lakers had in 2002, with the more efficient players also producing relatively more points, is a good one. It is a difficult offense to stop because those who can score efficiently also have the ability to create opportunities well. This is in contrast to...

The 1999 Portland Trail Blazers

I picked this team because it is the last Isaiah Rider team that I can remember. Rider offers a classic example of a player who scored a lot but didn't do it very efficiently. This 1999 team is also nice because the 2000 version didn't have Rider, so I can do a little compare and contrast. The numbers for the 1999 Blazers are in table 14.3.

Rider was indeed the team's leading point *scorer,* but he didn't *produce* the most points per game (taking into account assists and offensive rebounds)—that was Damon Stoudamire. But having these two rather inefficient players at the top of the list was not good for the team. Even though they didn't dominate possessions like Shaq and Kobe did (thank goodness), their leadership produced a team that scored 104.7 points per hundred possessions, above the league average but well below the 107.9 they would score the next year. In 2000, Steve Smith replaced Rider, and Rasheed Wallace took over the scoring lead, giving them the scoring list in table 14.4.

Table 14.3. Trail Blazers' 1999 Individual Floor Percentages and Offensive Ratings

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss
Damon Stoudamire	50	329	693	0.47	101	14.1	22%
Isaiah Rider	47	287	620	0.46	99	13.0	24%
Brian Grant	48	284	514	0.55	113	12.1	18%
Arvydas Sabonis	50	292	543	0.54	110	11.9	22%
Rasheed Wallace	49	273	513	0.53	109	11.4	20%
Walt Williams	48	179	375	0.48	111	8.6	19%
Jimmy Jackson	49	196	423	0.46	100	8.6	19%
Greg Anthony	50	137	293	0.47	107	6.3	20%
Stacey Augmon	48	113	209	0.54	108	4.7	13%
John Crotty	3	6	8	0.68	154	4.2	23%
Bonzi Wells	7	14	28	0.50	96	3.8	43%
Kelvin Cato	43	81	162	0.50	99	3.7	16%
Jermaine O'Neal	35	52	101	0.52	102	2.9	17%
Carlos Rogers	2	2	3	0.70	128	1.9	20%
Gary Grant	2	1	1	0.50	107	0.7	10%
Brian Shaw	1	0	2	0.12	25	0.5	20%

Table 14.4. Trail Blazers' 2000 Individual Floor Percentages and Offensive Ratings

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss
Rasheed Wallace	81	594	1102	0.54	108	14.8	21%
Steve Smith	82	530	975	0.54	120	14.2	19%
Scottie Pippen	82	513	1047	0.49	106	13.5	20%
Damon Stoudamire	78	476	969	0.49	107	13.3	22%
Arvydas Sabonis	66	357	656	0.54	113	11.2	21%
Bonzi Wells	66	267	534	0.50	103	8.3	24%
Detlef Schrempf	77	296	564	0.52	111	8.2	18%
Brian Grant	63	238	450	0.53	106	7.6	18%
Greg Anthony	82	226	481	0.47	110	6.5	17%
Jermaine O'Neal	70	145	276	0.52	104	4.1	17%
Stacey Augmon	59	108	210	0.51	103	3.7	16%
Gary Grant	3	5	12	0.39	79	3.2	27%
Antonio Harvey	19	20	41	0.48	94	2.1	16%
Joe Kleine	7	5	12	0.42	89	1.5	20%

This may not be an optimal distribution of possessions either, but it is better. Wallace's offensive rating stayed consistently high with more minutes. Smith gave them a very efficient off-guard in place of Rider. Whereas their top two point producers in 1999 combined for a rating of one hundred, their top two point producers in 2000 combined for a rating of 114. That is a big boost, and the resulting team improvement offensively is evidence that such individual offensive ratings "work"—they are good measures of how a team offense will respond to an individual.

After Wallace and Smith, the top point producer was Scottie Pippen, who also joined the club in 2000. Pippen's offensive rating here shows him in his elder days,

certainly not at his best, but he frankly was never the most efficient offensive player.

The Bulls, with and without Jordan

It is an interesting comparison to see how the Bulls' offense changed as Jordan went from playing basketball to playing baseball to playing basketball again. The Bulls' team offense went from 112.9 with Jordan leading the scoring in 1993 to 106.0 with Pippen leading the scoring in 1994, a huge drop. But the team's offense started recovering in 1995 with the maturation of Toni Kukoc, the shorter three-point line, and the return of Jordan late in the season. The team offense went up to 109.5. And then there was the monster year of 1996, when the Bulls went 72–10. Their offense leapt to an astounding 115.2. The following subsections show how their individual numbers changed from season to season.

1993

In 1993, Jordan's offensive rating was 119 while he used a huge 33 percent of the team's possessions. Compare that to what Shaq and Kobe did for the Lakers in 2002 and it's better. Pippen's offensive rating was a modest 108, about the league average that year, but he contributed on 25 percent of the team's possessions. B.J. Armstrong and Horace Grant played supreme roles in the supporting cast. (Not all the lesser producing players are shown.) The team's distribution is shown in table 14.5.

1994

In 1994, with Jordan gone, more guys got involved because Pippen couldn't handle the load that Jordan had. Pippen's efficiency numbers didn't change much, except that he tripled the number of three-pointers that he took, raising his offensive rating a little. He essentially diversified his game enough to overcome the fact that defenses now could key on him. Pete Myers—the joke was that he was the new Jordan because he took the off-guard spot—provided almost no offense.

Table 14.5. Select Individual Floor Percentages and Offensive Ratings for the 1993 Bulls

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss
Michael Jordan	78	1106	1938	0.57	119	29.7	33%
Scottie Pippen	81	785	1475	0.53	108	19.6	25%
Horace Grant	77	550	926	0.59	118	14.2	18%
B.J. Armstrong	82	450	784	0.57	123	11.7	16%
Scott Williams	71	233	426	0.55	110	6.6	16%
Bill Cartwright	63	187	376	0.50	100	6.0	16%
Stacey King	76	210	394	0.53	107	5.5	19%
Will Perdue	72	182	330	0.55	109	5.0	17%

Table 14.6. Select Individual Floor Percentages and Offensive Ratings for the 1994 Bulls

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss
Scottie Pippen	72	759	1426	0.53	109	21.6	27%
Horace Grant	70	557	948	0.59	117	15.8	19%
B.J. Armstrong	82	534	1004	0.53	113	13.8	19%
Toni Kukoc	75	404	840	0.48	100	11.2	24%
Pete Myers	82	335	672	0.50	101	8.3	17%
Steve Kerr	82	307	550	0.56	121	8.1	14%
Luc Longley	27	108	207	0.52	105	8.0	21%
Scott Williams	38	145	272	0.53	105	7.5	22%

Kukoc came in as a twenty-five-year-old rookie. He played only about twenty-five minutes per game but took on 24 percent of the offense when he was in. His offensive rating of one hundred was low, but not atypical for rookies in the NBA.

Notice in table 14.6 that every Bull except Pippen who was there in 1993 was less efficient in 1994, showing how Jordan did make most of his teammates a little better. The overall decline in efficiency of seven points per hundred possessions is very consistent with the replacement of Jordan by a player at the replacement level—with a rating of about ninety-five.

1995

In 1995, Kukoc played a lot better and was the big reason that the team offense improved. Specifically, if you replace Kukoc's 1994 stats with his 1995 stats (table 14.7) in the Bulls' team numbers from 1994, you end up coming very close to the efficiency of the 1995 Bulls, as shown in table 14.8.

Over the nearly two years that Jordan missed, the league changed into a major three-point shooting league. Some Bulls numbers show how floor percentages generally dropped and offensive ratings more or less remained stable. Pippen's floor percentage went from 0.53 to 0.52, but his rating went from 108 to 110. The Bulls' three-point threat of 1993 was Armstrong, whose floor percentage

Table 14.7. Select Individual Floor Percentages and Offensive Ratings for the 1995 Bulls

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss
Michael Jordan	17	208	399	0.52	109	25.7	31%
Scottie Pippen	79	793	1523	0.52	110	21.3	26%
Toni Kukoc	81	619	1103	0.56	118	16.1	22%
B.J. Armstrong	82	471	884	0.53	119	12.9	18%
Will Perdue	78	329	592	0.56	111	8.4	19%
Steve Kerr	82	262	463	0.57	129	7.3	13%
Ron Harper	77	258	549	0.47	98	7.0	19%
Luc Longley	55	185	380	0.49	100	6.9	20%
Greg Foster	17	51	98	0.52	104	6.0	17%
Pete Myers	71	183	386	0.47	97	5.3	16%

Table 14.8. Impact of Kukoc's 1995 Improvement on the Bulls

	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod
Bulls 1994 Stats	3919	7499	0.52	107	8035
Bulls 1994 Stats, using '95 Kukoc	4134	7761	0.53	110	8500
Bulls Actual 1995	3949	7530	0.52	111	8323

and rating were 0.57 and 123, respectively. By 1995, his numbers were 0.53 and 119. Jordan adapted his game after his baseball career to become more of a perimeter player, too.

1996

With the improved Kukoc, the more confident and proven Pippen, and Jordan, the Bulls 1996 team was going to be good. There was no doubt. But the Bulls ended up being great. Pippen and Kukoc got more efficient but scored less. Dennis Rodman signed up, rebounded a lot, and fit in efficiently. They didn't have an efficient scoring center, but they didn't need one (see table 14.9).

Jordan's return, though, was the key. It's remarkable to realize that he was only *nearly* at his most dominant offensively.

Michael Jordan's Career

Jordan's points per game and scoring titles don't do justice to his impact on the Bulls' success. He posted so many points so efficiently (see table 14.10) that he nearly single-handedly made his team's offenses good. From 1988 to 1997, Jordan's efficiency was near the top in the league for any player producing fifteen or more points per game. He was an extremely rare player in using over 30 percent of his team's possessions, something that neither Magic nor Bird ever did. They never had to.

Table 14.9. Select Individual Floor Percentages and Offensive Ratings for the 1996 Bulls

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss
Michael Jordan	82	1064	1833	0.58	124	27.6	31%
Scottie Pippen	77	696	1312	0.53	116	19.7	24%
Toni Kukoc	81	487	850	0.57	125	13.1	21%
Luc Longley	62	279	552	0.50	103	9.2	18%
Dennis Rodman	64	278	521	0.53	109	8.9	13%
Ron Harper	80	298	538	0.55	116	7.8	15%
Steve Kerr	82	262	448	0.58	141	7.7	12%
Bill Wennington	71	170	313	0.54	111	4.9	15%

Table 14.10. Michael Jordan's Individual Offensive Efficiency Statistics

Season	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss	Team Off. Rtg.
1985	82	1106	1921	0.58	118	27.6	30%	108.7
1986	18	179	336	0.53	109	20.4	36%	108.6
1987	82	1336	2355	0.57	117	33.6	36%	108.6
1988	82	1292	2143	0.60	123	32.2	33%	109.0
1989	81	1250	2104	0.59	123	31.9	32%	109.1
1990	82	1226	2092	0.59	123	31.4	32%	112.3
1991	82	1152	1892	0.61	126	29.0	31%	114.7
1992	80	1088	1841	0.59	121	27.9	30%	115.5
1993	78	1106	1938	0.57	119	29.7	33%	112.9
1995	17	208	399	0.52	109	25.7	31%	109.5
1996	82	1064	1833	0.58	124	27.6	31%	115.2
1997	82	1020	1791	0.57	121	26.5	31%	114.4
1998	82	1033	1857	0.56	114	25.8	31%	107.7
2002	60	647	1334	0.49	99	22.0	35%	104.8

Magic Johnson's Career

Magic entered the league on a team that had Kareem Abdul-Jabbar. He had to fit in, unlike Jordan, who had to carry his team as a rookie. And Magic fit in very well, playing multiple positions, using about 23 percent of his team's possessions, and producing 113 points per hundred possessions (see table 14.11). When he had to become the scorer in 1987, he maintained the efficiency and increased his load to 29 percent of the team's possessions. That year's offense was only one of several that he led to greatness.

Table 14.11. Magic Johnson's Individual Offensive Efficiency Statistics

Season	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss	Team Off. Rtg.
1980	77	755	1357	0.56	113	19.9	23%	110.5
1981	37	430	753	0.57	115	23.3	26%	108.7
1982	78	849	1441	0.59	118	21.9	22%	110.2
1983	79	810	1375	0.59	119	20.7	22%	110.5
1984	67	735	1263	0.58	118	22.3	23%	110.9
1985	77	855	1416	0.60	123	22.7	24%	114.1
1986	72	807	1364	0.59	122	23.1	25%	113.3
1987	80	1066	1768	0.60	124	27.4	29%	115.6
1988	72	814	1418	0.57	118	23.3	26%	113.1
1989	77	956	1631	0.59	125	26.5	27%	113.8
1990	79	933	1609	0.58	126	25.7	27%	114.0
1991	79	859	1505	0.57	124	23.5	26%	112.1
1996	32	248	459	0.54	117	16.8	25%	111.4

Larry Bird's Career

The Legend of Larry is that, as a rookie, he led a team that had no talent to greatness. The legend is a little exaggerated because the Celtics of 1980 did have talent, but he still deserved the label. As a rookie, Bird's offensive numbers only partially reflect his contribution. As Magic brought energy to the Lakers, Bird brought a positive attitude to the Celtics. That, plus his talents, made for the kind of Hall of Fame career seen in table 14.12.

Reggie Miller's Career

Reggie Miller might have been as good a three-point shooter as Bird. When I first experimented with individual offensive ratings, I tested the measure with Miller and his number was so high that I thought I'd made a mistake. No mistake, though—Reggie has been a great offensive contributor with that deadly outside range. At his peak, Miller created more points per hundred possessions than any of the above three guys, at about 130 (see table 14.13). His peak floor percentage wasn't as high as Jordan's or Magic's, and he didn't dominate an offense like the other guys did. But that 1991 season marked the highest offensive rating I have ever seen for someone using more than 20 percent of his team's possessions. Like Larry, Magic, and Michael, Miller did help one of his teams enough to get them onto the list of history's greatest offenses.

Evaluation Tools

That is how some of the great offensive players in the NBA look on paper. They generated high individual offensive ratings for clubs that were good offensively.

Table 14.12. Larry Bird's Individual Offensive Efficiency Statistics

Season	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss	Team Off. Rtg.
1980	82	825	1575	0.52	109	21.0	25%	110.7
1981	82	857	1642	0.52	107	21.4	24%	109.7
1982	77	867	1557	0.56	114	23.0	25%	109.8
1983	79	902	1608	0.56	115	23.4	25%	106.9
1984	79	942	1678	0.56	116	24.5	27%	110.9
1985	80	1066	1863	0.57	119	27.8	28%	112.9
1986	82	1004	1811	0.55	117	25.9	28%	111.8
1987	74	959	1691	0.57	121	27.6	27%	113.5
1988	76	992	1746	0.57	122	27.9	29%	115.4
1989	6	52	98	0.53	110	17.9	25%	110.8
1990	75	854	1627	0.52	111	24.1	27%	112.0
1991	60	561	1108	0.51	109	20.0	24%	112.6
1992	45	427	819	0.52	112	20.4	25%	110.8

Table 14.13. Reggie Miller's Individual Offensive Efficiency Statistics

Season	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss	Team Off. Rtg.
1988	82	360	682	0.53	114	9.5	18%	106.6
1989	74	507	940	0.54	118	15.0	18%	106.8
1990	82	844	1502	0.56	124	22.7	23%	111.5
1991	82	782	1328	0.59	130	21.0	22%	111.7
1992	82	706	1236	0.57	126	18.9	19%	111.7
1993	82	685	1227	0.56	126	18.8	21%	111.9
1994	79	622	1126	0.55	123	17.5	22%	107.8
1995	81	605	1139	0.53	123	17.4	23%	109.6
1996	76	634	1191	0.53	121	18.9	24%	110.8
1997	81	679	1308	0.52	121	19.6	24%	105.8
1998	81	603	1130	0.53	121	16.9	22%	108.4
1999	50	353	691	0.51	119	16.4	21%	108.7
2000	81	572	1124	0.51	118	16.4	19%	108.6
2001	81	598	1202	0.50	115	17.0	20%	102.8
2002	79	499	975	0.51	121	14.9	18%	104.1

Of all those seasons above, the only teams that were below average offensively were the Pacers in the first two years and the last two years of Miller's career. These guys help make good offensive teams.

In general, individual offensive ratings and floor percentages are very good cues as to how well a team will do, a key thing in making these measures useful. The Bulls and the Blazers examples show this, too. But what you often want to do with numbers like these is get a sense for how predictive they are. You want to look at the numbers for a lot of different players, see how they compare, get a sense of the patterns that occur through a player's career, and determine the impact these players have on their teams. That is what I've been doing for the last ten years. I've looked at Dennis Rodman's effect on offenses—he took very few possessions and generally was a bit over the league average efficiency, so his offensive impact was small and positive, like Horace Grant's. I've looked at Allen Iverson—he took a lot of possessions, was only of about average efficiency, and his teams slightly lagged below average offensively. There are hundreds of different individuals whose numbers tell interesting and valuable stories—valuable in signing free agents, making trades, deciding who to play.

I don't have space to go through all the individuals, but I do want to look at a couple classes of individual players that have interested me from the time I created these measures. Specifically, when I first calculated Reggie Miller's very high offensive rating, I was surprised at how high it was. I also calculated offensive ratings for Hakeem Olajuwon, whose offensive rating was only around 110 the same year Miller's was nearly 130. Was there some sort of bias in individual offensive ratings for three-point shooters and against big men? Or was it just that three-point shooters really were more important in generating good team offenses?

To some degree, we've already answered this question back in chapter 3. In that chapter, we saw a lot of great offenses that didn't feature good big men. Kareem Abdul-Jabbar was important on a few good offenses, but the Lakers were good after he left, too. Shaquille O'Neal has been on a couple good offenses, and you saw above that his offensive ratings have also been quite good. Shaq has been a better offensive center than Olajuwon, to make that comparison.

So, in the next couple sections, I want to look at some three-point shooters, some big men, and then at some of those greatest offenses again to show that individual offensive ratings are not biased and that they do provide indications of how an offense will perform.

Three-Point Specialists

Three-point bombers generally are pretty high-risk guys. When they make their shots, they are valuable. When they don't, they get yanked. There are good three-point specialists and there are not-so-good ones. I'll talk about a couple good ones and just one of that other kind.

Steve Kerr, though not even close to being the player who has taken the highest percentage of his shots as three-pointers, is still a classic example of a three-point specialist. His career produced the numbers in table 14.14.

Kerr has usually been on good offensive teams. His outside shooting helps good teams that don't need him to use a lot of possessions. With the Bulls between 1994 and 1998, he had his best years, though he showed signs of his potential in 1992 when he was with Cleveland, whose offense ranked twenty-fourth overall historically. Kerr was a valuable three-point specialist during his prime. Stepping back from the numbers and acknowledging that Kerr would not

Table 14.14. Steve Kerr's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss	Team Off. Rtg
1989	PHO	26	26	49	0.52	116	2.2	14%	113.1
1990	CLE	78	234	468	0.50	114	6.9	14%	106.9
1991	CLE	57	127	253	0.50	111	4.9	14%	106.1
1992	CLE	48	141	250	0.56	124	6.5	15%	113.9
1993	CLE	5	8	13	0.58	120	3.1	16%	112.7
1993	ORL	47	63	130	0.48	103	2.9	15%	108.5
1994	CHI	82	307	550	0.56	121	8.1	14%	106.0
1995	CHI	82	262	463	0.57	129	7.3	13%	109.5
1996	CHI	82	262	448	0.58	141	7.7	12%	115.2
1997	CHI	82	250	428	0.58	137	7.2	12%	114.4
1998	CHI	50	146	275	0.53	125	6.8	13%	107.7
1999	SAN	44	79	172	0.46	105	4.1	13%	104.0
2000	SAN	32	32	69	0.47	112	2.4	14%	105.0
2001	SAN	55	73	159	0.46	110	3.2	13%	107.2
2002	POR	65	108	208	0.52	118	3.8	14%	107.4

have survived in the league as a defender makes you realize that his offense must have been quite efficient when he was in the game.

Another good three-point shooter and, surprisingly to me, the player who has taken the highest percentage of his shots from beyond the arc is Brent Barry. Barry has been very efficient when he hasn't had to use a lot of possessions. His 2002 season was his best, as he maintained a 124 rating and increased his offensive role (table 14.5).

Barry, like Kerr, has never been viewed as a great defender. Especially in the last couple years, he has gotten more playing time because his offense makes up for any defensive weaknesses. He and Rashard Lewis, another good three-point shooter, put Seattle near the top of the league offensively in 2002. Of course, Gary Payton, who has never led a Sonics team to a below-average offense, is also part of the equation.

Dennis Scott was another three-point specialist, though not quite as good at his craft as the previous two. His floor percentage was always below 0.50, and his rating never peaked as high. Like Barry and Kerr, Scott was also not known for defense, so when his individual ratings fell in 1997 (table 14.16), he had a hard time finding a job. Though three-point shooters get you a lot of points when they hit one, if they score infrequently, that inconsistency hurts.

Table 14.15. Brent Barry's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss	Team Off. Rtg
1996	LAC	79	339	676	0.50	117	10.0	18%	106.5
1997	LAC	59	202	429	0.47	107	7.8	21%	105.1
1998	LAC	41	234	503	0.46	108	13.2	19%	103.3
1998	MIA	17	28	63	0.45	110	4.1	13%	107.6
1999	CHI	37	179	407	0.44	99	10.9	19%	92.4
2000	SEA	80	384	792	0.48	115	11.4	15%	105.6
2001	SEA	67	248	475	0.52	124	8.8	14%	106.4
2002	SEA	81	506	939	0.54	124	14.4	17%	108.9

Table 14.16. Dennis Scott's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss	Team Off. Rtg
1991	ORL	82	513	1085	0.47	104	13.8	22%	105.9
1992	ORL	18	142	303	0.47	104	17.5	24%	103.5
1993	ORL	54	340	734	0.46	105	14.3	21%	108.5
1994	ORL	82	421	878	0.48	110	11.8	19%	110.8
1995	ORL	62	288	578	0.50	120	11.2	19%	115.1
1996	ORL	82	528	1084	0.49	118	15.6	19%	112.9
1997	ORL	66	310	694	0.45	107	11.3	17%	105.6
1998	DAL	52	288	670	0.43	99	12.7	20%	100.5
1998	PHO	29	64	139	0.46	109	5.2	15%	107.4
1999	MIN	21	69	140	0.49	115	7.7	14%	101.9
1999	NYK	15	17	50	0.34	81	2.7	14%	98.6
2000	VAN	66	139	310	0.45	109	5.1	13%	102.4

Table 14.17. Brian Taylor's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss	Team Off. Rtg
1978	DEN	39	223	449	0.50	100	11.5	16%	103.4
1979	SDC	20	40	89	0.45	92	4.1	19%	107.4
1980	SDC	78	493	939	0.53	114	13.7	16%	106.8
1981	SDC	80	425	721	0.59	124	11.2	15%	107.3
1982	SDC	41	236	424	0.56	117	12.1	16%	106.6

Finally, an interesting guy to look at is the player who took and made the most threes in 1980, when the NBA first introduced the three-point shot. That was Brian Taylor, who clearly made himself a much better player by being able to hit the long shot. When the line was introduced, his offensive rating went up 15 to 20 percent (see table 14.17). But the league didn't quite see the benefit back then. In 1983, everyone stopped using the three—only four players even made twenty-five treys over the whole season—and Taylor didn't even play.

Some Big Men

Whereas there are three-point specialists, there really aren't low-post scoring specialists. Big men have to do it all, and they used to be able to do so. Now, big men are specialists—specialists at rebounding or blocking shots or, these days, fouling Shaq. Teams actually scout the draft for guys who can stop Shaq without fouling so much. That is because Shaq is about all there is for offensive big men, and his numbers are great (table 14.18).

Shaq's floor percentages have been close to the league best since he entered the NBA. If the big guy wants to score, it's tough to stop him. You may be able to hold him to one point through a foul, but he has a 60-percent chance of scoring at least one on you. That's what these numbers say. His individual offensive ratings have led to some very good and occasionally great team offensive ratings.

By contrast, you have Tim Duncan, the other big man with some offensive pop these days (table 14.19). Until 2002, Duncan never posted numbers as good

Table 14.18. Shaquille O'Neal's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss	Team Off. Rtg
1993	ORL	81	914	1648	0.55	109	22.1	27%	108.5
1994	ORL	81	1104	1801	0.61	120	26.6	28%	110.8
1995	ORL	79	1070	1770	0.60	118	26.4	31%	115.1
1996	ORL	54	657	1170	0.56	110	23.8	31%	112.9
1997	LAL	51	626	1114	0.56	110	23.9	30%	108.4
1998	LAL	60	769	1321	0.58	113	24.9	31%	111.9
1999	LAL	49	607	1023	0.59	115	24.1	31%	107.6
2000	LAL	79	1118	1892	0.59	115	27.6	31%	107.4
2001	LAL	74	1033	1750	0.59	114	27.0	32%	109.2
2002	LAL	67	855	1441	0.59	116	24.9	31%	109.4

Table 14.19. Tim Duncan's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss	Team Off. Rtg
1998	SAN	82	822	1514	0.54	108	19.9	26%	103.9
1999	SAN	50	514	962	0.53	106	20.5	27%	104.0
2000	SAN	74	835	1549	0.54	109	22.8	29%	105.0
2001	SAN	82	895	1676	0.53	106	21.7	28%	107.2
2002	SAN	82	1014	1813	0.56	114	25.3	29%	106.5

as Shaq's and even then, he couldn't carry the team offense to greatness as Shaq has. Duncan is clearly a little behind Shaq, but he is really the next best thing offensively.

Notice that Duncan's Spurs have never quite put up the same offensive ratings as Shaq's Lakers either. The improvement Duncan made in 2002 at age twenty-five is probably the biggest improvement he will make in his efficiency, something that he'll carry through age thirty or so. With better teammates and that individual offensive rating remaining somewhat stable (maybe peaking a couple points higher), he should lead a few offenses to near greatness.

There are other centers out there right now: an old David Robinson, a very old Hakeem Olajuwon, a defensive-minded Dikembe Mutombo, a defensive-minded Ben Wallace, an unfortunately limited Alonzo Mourning, the enigmatic Elden Campbell, and the somewhat comical Vlade Divac. None of these guys are currently doing what Shaq and Duncan are doing on the offensive end, though Robinson once did, as you can see in table 14.20.

His best offensive years were arguably better than Shaq's best offensive years, though that is definitely an argument, not a clear-cut statement. Today, Robinson is still efficient, but hasn't produced twenty points per game since 1998, Duncan's first year. His deference to Duncan on the offensive end has actually been a little strange. The 5 percent drop in his percentage of team possessions in 1999 is not something you see with any of the above superstars.

Table 14.20. David Robinson's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss	Team Off. Rtg
1990	SAN	82	938	1606	0.58	116	22.8	26%	107.7
1991	SAN	82	985	1667	0.59	119	24.1	26%	107.8
1992	SAN	68	749	1257	0.60	118	21.9	24%	107.5
1993	SAN	82	945	1681	0.56	113	23.1	26%	109.6
1994	SAN	80	1134	1917	0.59	119	28.6	31%	110.4
1995	SAN	81	1034	1752	0.59	120	25.9	29%	111.7
1996	SAN	82	990	1669	0.59	121	24.5	28%	110.2
1997	SAN	6	50	84	0.60	117	16.4	31%	103.3
1998	SAN	73	755	1326	0.57	114	20.8	29%	103.9
1999	SAN	49	388	688	0.56	111	15.6	24%	104.0
2000	SAN	80	669	1202	0.56	111	16.8	25%	105.0
2001	SAN	80	564	998	0.56	114	14.2	23%	107.2
2002	SAN	78	477	832	0.57	114	12.2	19%	106.5

Table 14.21. Hakeem Olajuwon's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss	Team Off. Rtg
1985	HOU	82	831	1447	0.57	113	19.8	23%	107.9
1986	HOU	68	769	1340	0.57	113	22.3	25%	110.1
1987	HOU	75	847	1515	0.56	111	22.4	26%	106.5
1988	HOU	79	859	1557	0.55	110	21.6	26%	107.1
1989	HOU	82	955	1748	0.55	109	23.1	27%	105.7
1990	HOU	82	938	1791	0.52	105	22.8	27%	104.9
1991	HOU	56	560	1038	0.54	109	20.2	25%	107.4
1992	HOU	70	707	1296	0.55	110	20.4	25%	106.2
1993	HOU	82	1008	1793	0.56	114	24.9	28%	109.6
1994	HOU	80	1007	1860	0.54	109	25.4	29%	105.9
1995	HOU	72	917	1698	0.54	110	25.9	30%	109.7
1996	HOU	72	892	1673	0.53	108	25.1	31%	109.3
1997	HOU	78	821	1596	0.51	105	21.6	29%	108.8
1998	HOU	47	379	732	0.52	105	16.4	24%	107.7
1999	HOU	50	432	827	0.52	105	17.4	25%	105.5
2000	HOU	44	219	455	0.48	96	9.9	22%	104.8
2001	HOU	58	337	631	0.53	106	11.6	22%	107.5
2002	TOR	61	215	468	0.46	91	7.0	18%	102.6

Olajuwon was the player that concerned me originally. His individual offensive rating was relatively low, and it troubled me. But it turned out that he didn't ever lead his teams to offensive greatness. The 1993 season, when he led the Rockets to the first of their two championships, was his best individual offensive season and the team's best offensive season (table 14.21).

Of the remaining guys, only Mourning has really been viewed as a primary offensive option. Throughout his career, Mourning's efficiency stats have been a lot like Duncan's—good but not great (table 14.22).

This is all in great contrast to what big men used to do. In 1982, there were nine guys who created fifteen points per game, and the top six were at least as efficient as Shaq or Duncan (see table 14.23).

So, in case you were worried that offensive ratings and floor percentages were biased against big men, you can see that big men can have some very good

Table 14.22. Alonzo Mourning's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss	Team Off. Rtg
1993	CHA	78	755	1367	0.55	112	19.6	25%	109.5
1994	CHA	60	593	1092	0.54	110	19.9	27%	108.4
1995	CHA	77	743	1381	0.54	110	19.7	25%	109.6
1996	MIA	70	768	1406	0.55	109	22.0	28%	105.3
1997	MIA	66	614	1152	0.53	106	18.4	27%	106.8
1998	MIA	58	511	929	0.55	109	17.5	26%	107.6
1999	MIA	46	451	830	0.54	107	19.4	27%	104.7
2000	MIA	79	771	1379	0.56	112	19.5	27%	104.5
2001	MIA	13	83	165	0.50	99	12.5	30%	101.9
2002	MIA	75	553	1055	0.52	104	14.6	24%	98.5

Table 14.23. Individual Offensive Efficiency Statistics for Big Men in 1982

Player	Tm	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss
Moses Malone	HOU	81	1192	2026	0.59	118	29.5	29%
Kareem Abdul-Jabbar	LAL	76	814	1397	0.58	116	21.3	24%
Dan Issel	DEN	81	840	1402	0.60	123	21.2	25%
Jack Sikma	SEA	82	778	1415	0.55	113	19.4	22%
Robert Parish	BOS	80	742	1324	0.56	112	18.5	25%
Artis Gilmore	CHI	82	685	1110	0.62	124	16.8	19%
Joe Barry Carroll	GSW	76	598	1121	0.53	106	15.7	20%
James Edwards	CLE	77	604	1112	0.54	108	15.6	21%
Alvan Adams	PHO	79	603	1144	0.53	106	15.3	23%

numbers. There are efficient ones, more so in the past, and their numbers have helped create good offenses just as three-point shooters do. But, consistent with the prevailing wisdom, there just aren't many good offensive big men anymore.

The Best Offenses

How did those great offenses from chapter 3 structure their offenses? Are there any patterns in the efficiencies of their best players? That's what this section is about. I won't post all the top offenses, but they are listed in Appendix 2.

We'll start with the 1982 Denver Nuggets in table 14.24. From top to bottom, they had guys with ratings around 110 or better. But at the top were Alex English, Dan Issel, and Kiki Vandeweghe. Those top three were extremely potent throughout their careers, but everyone on these Nuggets got a lot of good opportunities through that fast pace.

What about those surprising 2002 Mavericks (table 14.25)? Dirk Nowitzki was all that he was advertised to be. His 120 rating was the league's highest among those players producing twenty points per game. Reaching this height at age

Table 14.24. Individual Offensive Efficiency Statistics for 1982 Denver Nuggets

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss
Alex English	82	1009	1734	0.58	118	24.9	25%
Dan Issel	81	840	1402	0.60	123	21.2	25%
Kiki Vandeweghe	82	800	1357	0.59	120	19.9	21%
David Thompson	61	413	778	0.53	108	13.8	27%
Dave Robisch	12	71	123	0.58	120	12.3	21%
Billy McKinney	81	446	781	0.57	115	11.1	17%
T.R. Dunn	82	393	685	0.57	114	9.5	12%
Kenny Higgs	76	343	677	0.51	103	9.2	17%
Glen Gondrezick	80	356	623	0.57	114	8.9	16%
Cedrick Hordges	77	276	539	0.51	100	7.0	17%
John Roche	39	91	175	0.52	114	5.1	15%
David Burns	6	10	23	0.45	89	3.3	19%
James Ray	40	64	147	0.44	87	3.2	24%

Table 14.25. Individual Offensive Efficiency Statistics for 2002 Dallas Mavericks

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss
Dirk Nowitzki	76	736	1360	0.54	120	21.4	24%
Michael Finley	69	625	1220	0.51	110	19.4	23%
Steve Nash	82	701	1338	0.52	119	19.3	24%
Nick Van Exel	27	163	337	0.48	108	13.5	23%
Juwan Howard	53	347	657	0.53	108	13.3	20%
Raef Lafrentz	27	131	272	0.48	106	10.7	18%
Tim Hardaway	54	227	528	0.43	103	10.1	21%
Adrian Griffin	58	205	377	0.54	115	7.5	14%
Eduardo Najera	62	223	377	0.59	119	7.3	14%
Greg Buckner	44	133	230	0.58	119	6.2	13%
Zhizhi Wang	55	114	241	0.47	110	4.8	21%
Shawn Bradley	53	107	193	0.55	116	4.2	13%
Danny Manning	41	82	165	0.50	101	4.1	15%
Johnny Newman	47	78	159	0.49	109	3.7	11%
Avery Johnson	17	30	60	0.50	102	3.6	20%
Evan Eschmeyer	31	41	80	0.51	102	2.6	14%
Donnell Harvey	18	22	41	0.53	103	2.3	13%
Darrick Martin	3	1	10	0.13	26	0.8	23%
Tariq Abdul-Wahad	4	1	6	0.19	41	0.6	13%

twenty-three suggests greatness considering that Larry, Magic, and Michael didn't reach that rating any earlier than age twenty-five. After Dirk, Michael Finley put up a pretty good year by his standards. He has generally posted ratings around 105 since his rookie year in Phoenix, when he posted a rating of 114. Steve Nash had a great season. He played well in his first two seasons in Phoenix, but it took him two seasons in Dallas before he was able to step up to take more possessions and be efficient with them. Well below them, there were a couple of prominently good role players in Eduardo Najera and Greg Buckner.

The Utah Jazz are on the list for several teams in the 1990s. All of those featured Karl Malone, John Stockton, and Jeff Hornacek. Their individual stats for 1997 (table 14.26) show you why. Their top five regular players all had ratings over 110. If their bench had been better, they might have actually beaten the Bulls.

There were a lot of great Lakers offenses, too. The 1985 version (table 14.27) was incredibly balanced with no one using more than 24 percent of the possessions. Magic distributed and everyone else just hit shots. Kareem was the very efficient big man everyone made him out to be, with a rating of 120.

The rest of the great offenses and their individual ratings appear in the appendix. There is a point that can be made without showing them all. The best offenses all have at least three players at the top who are both well above average in their offensive rating and who use at least 20 percent of their team's possessions. They score efficiently, and they share the ball. The only exception to this appears to be those Bulls teams of the early 1990s, when Jordan was using about

Table 14.26. Individual Offensive Efficiency Statistics for 1997 Utah Jazz

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss
Karl Malone	82	1040	1771	0.59	119	25.6	31%
John Stockton	82	672	1157	0.58	125	17.6	21%
Jeff Hornacek	82	544	981	0.55	121	14.5	20%
Bryon Russell	81	354	677	0.52	116	9.7	14%
Greg Ostertag	77	288	506	0.57	114	7.5	15%
Antoine Carr	82	271	533	0.51	103	6.7	19%
Shandon Anderson	65	172	365	0.47	99	5.6	18%
Howard Eisley	82	197	424	0.46	98	5.1	21%
Ruben Nembhard	8	17	32	0.54	110	4.4	18%
Adam Keefe	62	128	231	0.56	111	4.1	13%
Chris Morris	73	134	302	0.45	97	4.0	16%
Greg Foster	79	134	280	0.48	98	3.5	16%
Stephen Howard	42	70	123	0.57	112	3.3	19%
Jamie Watson	13	17	35	0.47	99	2.7	15%
Brooks Thompson	2	0	2	0.13	27	0.3	13%

Table 14.27. Individual Offensive Efficiency Statistics for 1985 Los Angeles Lakers

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss
Magic Johnson	77	855	1416	0.60	123	22.7	24%
Kareem Abdul-Jabbar	79	783	1300	0.60	120	19.8	23%
James Worthy	80	645	1139	0.57	114	16.2	20%
Byron Scott	81	570	1006	0.57	116	14.5	20%
Michael Cooper	82	397	756	0.52	110	10.2	16%
Bob McAdoo	66	311	577	0.54	108	9.4	21%
Mike McGee	76	337	610	0.55	112	8.9	24%
Jamaal Wilkes	42	158	307	0.51	103	7.5	19%
Larry Spriggs	75	257	478	0.54	108	6.9	17%
Kurt Rambis	82	240	435	0.55	110	5.8	13%
Mitch Kupchak	58	150	279	0.54	106	5.1	18%
Ronnie Lester	32	61	125	0.49	97	3.8	21%
Chuck Nevitt	11	8	27	0.29	55	1.4	22%
Earl Jones	2	0	2	0.00	0	0.0	11%

a third of his team's possessions and, well, he used them like no one else in recent memory. For those with long memories, I'll look at Wilt Chamberlain's feats of the 1960s in a few chapters.

A Couple of Bad Teams

Just to give you an idea of what a bad team looks like, I'll pull a couple of interesting ones off the worst offense list. The first is the worst—the 1988 Clippers team that was built around, well, really no one (table 14.28). Michael Cage led the league in rebounding that year, mostly by chasing a lot of his own teammates' missed shots. He unfortunately couldn't sink more than 47 percent of his own shots. Brace yourself, because this is pretty ugly.

Table 14.28. Individual Offensive Efficiency Statistics for 1988 Los Angeles Clippers

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss
Mike Woodson	80	648	1306	0.50	102	16.7	25%
Michael Cage	72	560	1011	0.55	110	15.4	18%
Benoit Benjamin	66	418	886	0.47	94	12.6	19%
Quintin Dailey	67	407	822	0.49	100	12.2	31%
Larry Drew	74	390	807	0.48	100	10.9	19%
Reggie Williams	35	173	422	0.41	84	10.1	23%
Eric White	17	79	140	0.57	115	9.4	19%
Steve Burtt	19	82	176	0.47	92	8.5	27%
Darnel Valentine	79	323	682	0.47	97	8.3	20%
Ken Norman	66	278	570	0.49	95	8.2	19%
Joe Wolf	42	164	373	0.44	89	7.9	16%

Table 14.29. Individual Offensive Efficiency Statistics for 2000 Chicago Bulls

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss
Elton Brand	81	782	1491	0.52	105	19.2	27%
Toni Kukoc	24	210	451	0.46	97	18.3	28%
Ron Artest	72	394	878	0.45	95	11.6	21%
Chris Carr	50	209	511	0.41	89	9.1	25%
Rusty Larue	4	17	43	0.40	83	9.0	18%
Fred Hoiberg	31	118	257	0.46	106	8.8	16%
Dedric Willoughby	25	84	202	0.42	96	7.8	21%
Hersey Hawkins	61	203	450	0.45	103	7.6	15%
John Starks	4	13	32	0.42	95	7.6	21%
B.J. Armstrong	27	92	202	0.45	98	7.3	19%
Randy Brown	59	207	503	0.41	84	7.2	17%
Corey Benjamin	48	154	372	0.41	88	6.8	23%
Matt Maloney	51	139	341	0.41	98	6.5	16%
Kornel David	26	76	166	0.46	93	5.9	20%
Chris Anstey	73	212	433	0.49	100	5.9	23%
Khalid Reeves	3	8	20	0.39	84	5.6	22%
Dickey Simpkins	69	175	423	0.41	81	5.0	14%
Will Perdue	67	111	274	0.40	78	3.2	15%
Michael Ruffin	71	107	230	0.47	91	2.9	13%
Lari Ketner	6	4	11	0.37	77	1.4	15%

I also want to highlight the 2000 Chicago Bulls (table 14.29). It was Elton Brand's rookie year. He took 27 percent of his team's possessions and put up an offensive rating right around the league average. Behind him, however, was almost no one who could post a rating of even one hundred. This suggests to me that it really is hard to have a one-man offense, unless you are Michael Jordan.

Finally, there was the 1998 Golden State Warriors (table 14.30). That was the season when the Warriors' slogan was "No More Mr. Nice Guy." Coincidence or not, that was also the season that Latrell Sprewell decided to choke coach P.J. Carlesimo.

Table 14.30. Individual Offensive Efficiency Statistics for 1998 Golden State Warriors

Player	G	Sc. Poss.	Poss.	Floor %	Off. Rtg.	Pts Prod/G	% Team Poss
Latrell Sprewell	14	136	289	0.47	97	20.0	28%
Jimmy Jackson	31	276	614	0.45	94	18.6	26%
Joe Smith	49	384	787	0.49	98	15.8	25%
Donyell Marshall	73	510	1073	0.47	100	14.7	22%
Erick Dampier	82	487	961	0.51	100	11.7	19%
Clarence Weatherspoon	31	164	313	0.53	105	10.6	16%
Jason Caffey	29	153	305	0.50	99	10.4	22%
Tony Delk	74	343	761	0.45	95	9.7	24%
Bimbo Coles	53	223	486	0.46	96	8.8	17%
Brian Shaw	39	136	343	0.40	85	7.5	17%
Muggsy Bogues	59	211	429	0.49	101	7.4	14%
Carl Thomas	10	26	58	0.45	96	5.5	22%
David Vaughn	22	59	135	0.44	86	5.3	22%
B.J. Armstrong	4	9	25	0.38	76	4.7	22%
Todd Fuller	57	109	226	0.48	96	3.8	19%
Brandon Williams	9	16	47	0.33	71	3.7	17%
Adonal Foyle	55	89	212	0.42	82	3.1	17%
Dickey Simpkins	19	31	70	0.44	84	3.1	19%
Felton Spencer	68	94	194	0.48	94	2.7	12%
Gerald Madkins	19	23	49	0.46	103	2.7	11%
Duane Ferrell	50	51	115	0.44	87	2.0	13%
Jeff Grayer	4	3	7	0.43	106	1.8	16%

Sprewell was pretty much alone on an offense that he couldn't carry—not even as well as Elton Brand did in Chicago. Sprewell's best offensive years had been and would later be on teams where he didn't have to carry the offense. And even those years weren't terribly efficient. In this season, Spree played only fourteen games. Given how poorly he was playing, he probably wouldn't have helped if he hadn't been suspended.

Key Messages

That's a look at some representative offensive numbers for players. Individual floor percentages and ratings are the hallmark of a lot of analyses. The analysis of Derrick Coleman in chapter 7 used *team* ratings to get at whether he hurt or helped his team offense. Individual ratings and floor percentages can tell a similar story. That is because they effectively predict things like the Bulls offense getting seven points worse if you replace Jordan with Pete Myers, or the Trail Blazers' offense getting several points better if Isaiah Rider weren't their leading scorer. That's a nice feature. It doesn't tell you about defense, but a hammer ain't gonna help you screw in a nut either.

These statistics can tell you whether a player who is scoring a lot is really doing it like Mike or if he's doing it like Isaiah. The star players will have high ratings and

use a high percentage of their team's possessions. The good role players will have high ratings and use a low percentage of their team's possessions. It's a good idea to have your efficient players also scoring the most. That doesn't mean that you can turn efficient Horace Grant into a leading scorer at the same efficiency. Knowing how offensive ratings respond to different responsibilities is a subject for a later chapter. For now, we'll let the numbers swim in your brain a while and get on to something a little easier in the next chapter.

WNBA Statistics

The WNBA was introduced to the world through the promotion of three players—Lisa Leslie, Sheryl Swoopes, and Rebecca Lobo. When the games actually began, Swoopes was pregnant, Leslie played reasonably but her team was poor, and Lobo just didn't play very well. The real stars of the league turned out to be less-promoted players like Cynthia Cooper, Ruthie Bolton-Holifield, and Jennifer Gillom. The WNBA just couldn't know in advance that these players, not the players the league promoted, would be so good. Leslie, Swoopes, and Lobo were well known from their recent college heroics, but no one had really assessed what it took for female college stars to make it at a higher level because there was no higher level. Overseas leagues were far enough away and variable enough in talent that no one really knew.

But now we're starting to know. It became clear fairly early on that the Michael Jordan of the WNBA was Cynthia Cooper (see table 14.31). Cooper dominated the offensive end like no other player since. Until her final season, Cooper was both the most efficient offensive player and the player producing the most

Table 14.31. Cynthia Cooper's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss
1997	HOU	28	264	506	0.52	119	21.6	29%
1998	HOU	30	292	555	0.53	119	22.0	30%
1999	HOU	31	296	561	0.53	119	21.6	29%
2000	HOU	30	241	477	0.50	113	17.9	26%

Table 14.32. WNBA Average Efficiency Statistics

Season	Poss/Game	Floor %	Rating
1997	75.0	0.439	92.3
1998	74.2	0.451	94.8
1999	71.4	0.456	97.1
2000	70.3	0.462	98.2
2001	68.4	0.449	95.9

points in every WNBA season. She was the biggest reason that her team, the Houston Comets, was unbeatable.

Let's put some perspective on these numbers by showing in table 14.32 the average floor percentage and points-per-hundred-possessions rating in the WNBA through time.

When Cooper was producing 119 points per hundred possessions in 1997, the league was producing ninety-two. That twenty-seven-point difference dwarfs anything Jordan ever did in the NBA.

You can see that the WNBA pace has been getting slower, and the efficiency has been getting better. The decline in efficiency in 2001 may be the effect of Cooper retiring, just as there was also a decline in league efficiency when Jordan left the NBA. Why the pace has been slowing is not clear, but it could be for the same reasons as in the NBA—more coaches shouting orders from the sideline, more emphasis on better shots, better ball handling in general. But this is getting away from the players.

After Cooper retired, the next WNBA MVP was Lisa Leslie. I know, I know—Cooper didn't even win the MVP in all her seasons, but that was for the same reason that Jordan didn't win in all his seasons—people like to spread it around a bit. Leslie's 2001 season was a step up for her after she didn't quite live up to the hype early on (table 14.33). Using as high a percentage of her team's offensive possessions as ever, her offensive rating was twelve points over the league average in 2001, easily better than any previous season. The Sparks team was also at

Table 14.33. Lisa Leslie's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss	Team Off. Rtg
1997	LAS	28	219	477	0.46	91	15.6	27%	93.9
1998	LAS	28	253	500	0.51	104	18.5	30%	94.9
1999	LAS	32	220	453	0.49	103	14.5	26%	102.7
2000	LAS	32	259	520	0.50	104	16.8	28%	102.7
2001	LAS	31	275	530	0.52	108	18.4	29%	107.1
2002	LAS	31	251	503	0.50	105	17.1	26%	104.2

Table 14.34. Sheryl Swoopes's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss	Team Off. Rtg
1997	HOU	9	27	48	0.55	118	6.3	21%	99.4
1998	HOU	29	194	406	0.48	105	14.7	24%	105.7
1999	HOU	32	267	522	0.51	110	17.9	27%	105.8
2000	HOU	30	278	517	0.54	115	19.8	28%	109.4
2002	HOU	32	272	553	0.49	108	18.6	30%	99.5

its best, dominating the league as the Comets had with Cooper. Leslie's offense declined a little in 2002, and she didn't repeat as MVP, in part because she didn't play quite as well on the offensive end. But the team did repeat as champs.

Some of those dominating Comets teams did have Sheryl Swoopes helping Cooper out. Swoopes didn't stay pregnant, and when she returned, she was a star, living up to some of the hype (table 14.34). Her offense didn't quite match Cooper's until 2000, when she rightfully won the MVP. Her offensive numbers in 2002 reflect a player who had to do more and couldn't maintain her efficiency. They also could reflect that she was thirty-four years old.

The other player in the WNBA to win an MVP is Yolanda Griffith (table 14.35), Sacramento's very skilled post player. Griffith was one of the former ABL players whose presence in that league was supposed to help it survive. The ABL tried to claim that it had better talent than the WNBA, and Griffith would be one of those players that the ABL would highlight as an example. She definitely has done well in the WNBA, posting offensive numbers that approach Cooper's. Griffith won the MVP as a WNBA rookie in 1999, though you can see that her offensive numbers don't quite match Cooper's.

Aside from these great players, the WNBA also has its good role players, like Crystal Robinson of New York and Latasha Byears of Los Angeles. Robinson's role has been as a hired gun (table 14.36), bombing away from three-point land and

Table 14.35. Yolanda Griffith's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss	Team Off. Rtg
1999	SAC	29	266	446	0.60	117	18.0	24%	100.0
2000	SAC	32	253	442	0.57	115	15.9	24%	103.6
2001	SAC	32	255	444	0.57	116	16.1	24%	100.9
2002	SAC	17	133	238	0.56	117	16.4	24%	96.7

Table 14.36. Crystal Robinson's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss	Team Off. Rtg
1999	NYL	31	131	282	0.47	115	10.5	19%	97.2
2000	NYL	27	96	206	0.47	110	8.4	17%	99.1
2001	NYL	32	128	259	0.50	122	9.9	16%	97.6
2002	NYL	32	151	326	0.46	114	11.6	19%	100.6

making a good fraction. Her career-high rating of 122 is as high as you will find among players who played regularly.

Byears became a role player after handling a lot of scoring responsibilities early in her career (table 14.37). By cutting down how often she tried to score—taking more smart shots and not trying to create as much—she improved her scoring efficiency later in her career.

There are also players who score a lot but probably shouldn't be doing so—kind of like the Jerry Stackhouses or Allen Iversons of the WNBA. Chamique Holdsclaw, whom *Sports Illustrated* hinted would be the Michael Jordan of the WNBA when she was still in college, has been the poster child for what happens when bad shooters fire their guns too much. Well, she's getting there, but she started off more like Stackhouse than Jordan (table 14.38).

Table 14.37. Latasha Byears's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss	Team Off. Rtg
1997	SAC	28	126	264	0.48	97	9.2	22%	90.4
1998	SAC	30	193	408	0.47	95	12.9	27%	88.4
1999	SAC	32	140	271	0.52	102	8.7	21%	100.0
2000	SAC	32	85	163	0.52	104	5.3	18%	103.6
2001	LAS	32	137	233	0.59	118	8.6	18%	107.1
2002	LAS	26	87	141	0.62	125	6.8	16%	104.2

Table 14.38. Chamique Holdsclaw's Individual Offensive Efficiency Statistics

Season	Tm	G	Sc. Poss	Poss	Floor %	Off. Rtg.	Pts Prod/G	% Tm Poss	Team Off. Rtg
1999	WAS	31	248	528	0.47	96	16.3	28%	92.6
2000	WAS	32	260	531	0.49	99	16.5	27%	98.7
2001	WAS	29	229	511	0.45	91	16.0	31%	88.1
2002	WAS	20	174	338	0.52	110	18.6	32%	98.1

That is a taste of the WNBA player efficiency numbers, with a lot more given in chapter 22. It is a young league, and the dominance of individual players like Cooper, Swoopes, and Leslie is not as surprising while the league is still figuring out its style and strategies. At one time in the past, it was very troublesome that the league was promoting players who were less than the best. But I think that state of affairs is changing as the league matures and its ability to self-evaluate becomes better.

Chapter 15

The Holy Grail of Player Ratings

Over the last ten years, many magazines have forecasted a "next Michael Jordan"—with the names including Allen Iverson, Ray Allen, Harold Miner, Vince Carter, Kobe Bryant, and now high-schooler LeBron James. They have, of course, been wrong every time. On July 3, 2002, the *Indianapolis Star* reported on a couple of math guys who supposedly had developed the "Michael Jordan of statistics." Their statistic claimed to measure "the tangibles, intangibles and all other factors that determine a player's value to his team." And they were also wrong.

I'm sure that Wayne Winston and Jeff Sagarin, who jointly developed the statistical method, were thinking that they had found the Holy Grail of Player Ratings when they started working on it. Their concept was powerful yet elementary—if a lineup of Rick Fox, Robert Horry, Derek Fisher, Kobe Bryant, and Shaquille O'Neal produces a net of plus-fifteen points per game, and the same lineup with Mark Madsen replacing Shaq produces plus-five points per game, it means that Shaq is worth ten more points per game than Mark Madsen. If you carry out this analysis with all sorts of lineups, you can figure out the relative values of all players (see Box 1 for details). Other people have thought of this concept, but Winston and Sagarin got hold of the play-by-play data to do it. Despite the concept making sense, the results—as we like to say in this business—don't pass the "laugh test." Winston/Sagarin's results suggested that in 2002, Shaquille O'Neal, commonly viewed as the best player in the league, was only the twentieth best player in the NBA. Their results also suggested that rookie Andrei Kirilenko, not commonly viewed as even being in the league's top fifty, ranked second among NBA players in overall contribution. See? Doesn't pass the laugh test. Or the rolling-of-the-eyes test. Winston and Sagarin acknowledged those embarrassments and