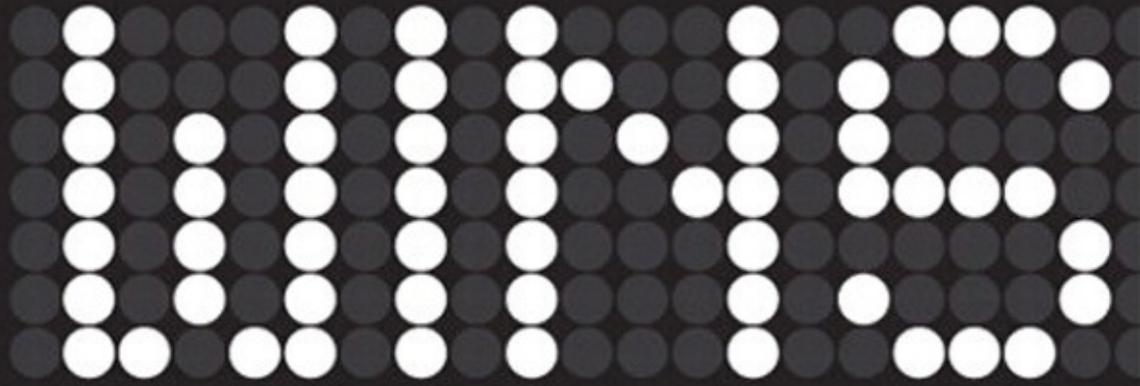


STUMBLING ON



**TWO ECONOMISTS
EXPOSE THE PITFALLS
ON THE ROAD TO VICTORY
IN PROFESSIONAL SPORTS**

DAVID J. BERRI AND MARTIN B. SCHMIDT

Stumbling On Wins

Two Economists Expose the Pitfalls on the Road to Victory in Professional Sports

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To Lynn and Susan:

We couldn't have done this without you.

Contents

[Acknowledgments](#)

[About the Authors](#)

[Preface](#)

[Chapter 1: Maybe the Fans Are Right](#)

[Sporting Rationality](#)

[Crunchers, “Experts,” and the Wrath of Randomness](#)

[A Century of Mistakes in Baseball](#)

[Chapter 2: Defending Isiah](#)

[Isiah Thomas Illustrates How Money Can’t Buy You Love](#)

[Getting Paid in the NBA](#)

[Coaching Contradictions](#)

[Isiah’s Defense](#)

[Chapter 3: The Search for Useful Stats](#)

[Identifying the Most “Useful” Numbers](#)

[The Most Important Position in Team Sports?](#)

[Assigning Wins and Losses](#)

[Chapter 4: Football in Black and White](#)

[A Brief History of the Black Quarterback](#)

[Performance in Black and White](#)

[Quarterback Pay in Black and White](#)

[Chapter 5: Finding the Face of the Franchise](#)

[Birth of the Draft](#)

[The Problem with Picking First](#)

[How to Get Picked First?](#)

[Back to Kostka](#)

[Chapter 6: The Pareto Principle and Drafting Mistakes](#)

[The Pareto Principle and Losing to Win](#)

[The NBA Draft and NBA Performance](#)

[Catching a Baseball Draft](#)

[Chapter 7: Inefficient on the Field](#)

[Just Go For It!](#)

[Evaluating the Little Man in Football](#)

[Chapter 8: Is It the Teacher or the Students?](#)

[The Wealth of Coaching](#)

[“Take Your’n and Beat His’n”](#)

[Deck Chairs?](#)

[Growing Older and Diminishing Returns](#)

[Putting the Picture Together](#)

[Chapter 9: Painting a Bigger Picture](#)

[Appendix A: Measuring Wins Produced in the NBA](#)

[A Very Brief Introduction to Regression Analysis](#)

[Modeling Wins in the NBA](#)

[Calculating Wins Produced in the NBA](#)

[Win Score and PAWS48](#)

[A Comment on Alternatives](#)

[Three Objections to Wins Produced for the NBA](#)

[Appendix B: Measuring Wins Produced in the NFL](#)

[Sports Fans Versus Traditional Economics: Why Many Economists Think the Fans Are onto Something](#)

[Endnotes](#)

[Chapter 1](#)

[Chapter 2](#)

[Chapter 3](#)

[Chapter 4](#)

[Chapter 5](#)

[Chapter 6](#)

[Chapter 7](#)

[Chapter 8](#)

[Chapter 9](#)

[References](#)

[Books and Articles](#)

[Web Sites](#)

[Index](#)

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Martin B. Schmidt is a professor of economics at the College of William and Mary. He is coauthor of *The Wages of Wins* and also the author of nearly 40 articles primarily in the areas of monetary economics and sports economics. In addition, his writing has appeared in *The New York Times* and *The Sports Business Journal*. He lives with his wife and three kids in Williamsburg, Virginia.

Preface

Once upon a time, the word “moneyball” was only heard in reference to a winning shot in billiards. A few years ago, though, the phrase moved out of the pool hall and onto the baseball diamond. The man responsible for this move was Michael Lewis. In 2003, Lewis published *Moneyball*, a book that tells the remarkable story of the Oakland A’s and General Manager Billy Beane. From 1996 to 2006, Beane managed to consistently field a winning baseball team without spending very much money on players. According to Lewis, this feat was accomplished because Beane knew something about measuring player performance that other decision-makers in baseball didn’t know.

One year before *Moneyball* appeared, we published an article examining the coaches voting for the All-Rookie team in the National Basketball Association (NBA). This article suggested that coaches in the NBA were not evaluating rookies correctly. Then in 2006 we published, along with Stacey Brook, *The Wages of Wins*. Our first book explored a variety of issues in sports and economics, including labor strikes, competitive balance, and the ability of a player to “turn it on” in the playoffs. With this list, we presented evidence that decision-makers in the NBA—like their counterparts in baseball—had problems measuring the value of free agents.

The idea that people in baseball and basketball have trouble evaluating players is certainly interesting to sports fans. Such stories, though, have implications beyond sports. In recent years, research has shown that, in general, people have trouble making “good” decisions. For example, Daniel Gilbert’s *Stumbling on Happiness*, a book that inspired our own title, showed how people’s efforts to find happiness are often sabotaged by their own actions. Dan Ariely, in *Predictably Irrational*, presented a number of experiments that show the difficulty people have in evaluating new information and making good decisions. And Richard Thaler and Cass Sunstein—in *Nudge*—not only describe the troubles people have making choices, but also how the presentation of choices can lead to better outcomes.

Much of this research is based on experimental evidence, and we find such evidence to be persuasive. Still, in the world of professional sports one might expect a different story. Sports come with an abundance of data to inform decisions. Plus, the consequences of failure are both quite severe and very public. In such an environment, we should expect that the experts employed in the industry get “right.”

The two stories told in *Moneyball* and *The Wages of Wins*, though, suggest otherwise. And these tales are actually just the tip of the iceberg. As the following pages reveal, similar stories can be found throughout the world of sports. We believe these stories should not only change the way sports fans perceive the choices made by their favorite teams, but also impact the way economists and other social scientists think about human decision-making.

1. Maybe the Fans Are Right

“I must say, with all due respect, I find it very hard to see the logic behind some of the moves you have made with this fine organization. In the past 20 years, you have caused myself, and the city of New York, a good deal of distress, as we have watched you take our beloved Yankees and reduce them to a laughing stock.”

George Costanza upon meeting George Steinbrenner (owner of the New York Yankees): Seinfeld, “The Opposite” (season 5, 1994)

“What the hell did you trade Jay Buhner for?! He had 30 home runs and over 100 RBIs last year. He’s got a rocket for an arm. You don’t know what the hell you’re doin’!”

*Frank Costanza (George’s father) upon meeting George Steinbrenner: Seinfeld, “The Caddy” (season 7, 1996)*¹

Few sports fans ever meet the people who operate their beloved sports teams. Such a meeting, though, would probably inspire many fans to get in touch with their inner “Costanza.” Given the opportunities fans would love to ask:

- Why do you keep signing such lousy free agents?
- Why can’t we ever draft players who actually help us win?
- Why can’t we ever find a better goalie?
- Why does the coach keep making that decision on fourth down?
- Why does the coach keep playing that point guard?

Obviously, this is just a sample of the questions asked. And, just as obviously, we have cleaned up the language. What may not be obvious is the economic implication of these questions.

Fans often suggest that decision-makers in sports are less than perfect. Managers and coaches are not only accused of making bad choices, fans often accuse these people of making the same bad choices over and over again. Many economists, though, find such stories unbelievable. After all, traditional economics clearly teaches that decision-makers are supposed to be “rational.”

What does it mean to be a “rational” decision-maker? Thorstein Veblen sarcastically argued in 1899 that economists tend to see people as “hedonistic lightning calculators.”² In more recent years, Richard Thaler and Cass Sunstein have just as sarcastically suggested that the rational decision-makers described by economists “can think like Albert Einstein, store as much memory as IBM’s Blue, and exercise the willpower of Mahatma Gandhi.”³

Both these remarks comment on the simple idea that rational decision-makers “choose efficiently to means that advance their goals.”⁴ Let’s imagine the behavior of a manager and coach that “chooses efficiently.” Such a person would tend to make the correct decision given the circumstances they observe. Perhaps more importantly, as the game changes, these same coaches and managers would change their point of view and make different decisions. Therefore—and contrary to what sports fans often contend—it’s not possible for coaches and managers to make the same mistake over and over again.

So who is right: fans or economists? The emerging field of behavioral economics—via a collection of laboratory experiments—seems to side with the fans. Experiments have shown that people are not quite as rational as traditional economics contends.⁵ Some economists have argued, though, that ho

people behave in a laboratory experiment is different from how they behave in the “real world.”⁶ In the real world, people face real consequences for making mistakes, and real consequences for people to be rational.

Sporting Rationality

To settle this debate, it might help to move out of the laboratory and look at decisions in the “real world.” Sports are often described as being removed from reality. Yet for the people in this particular reality, what happens in sports matters. Consequently, we can learn about the rationality—irrationality—of human decision-making by examining the “real world” of sports. This examination, consistent with the experimental evidence, will show again and again and again (actually we will present at least 20 “agains”) that decisions in sports are not completely rational.

Before we get to this examination, let’s emphasize that the word “irrational” is not synonymous with the word “stupid.” When we eventually argue that decision-makers in sports are “irrational,” we will not be saying that people in sports are not as smart as people are in other industries or other occupations. In fact, people in sports are often better prepared for their jobs than people employed elsewhere.⁷ Furthermore, it seems likely that whatever “irrationalities” are observed in sports are likely to be found elsewhere.

We make this claim because at first glance decision-makers in sports perhaps more than anyone else should be “rational.” There are two characteristics of the sports industry that bolster this expectation. First, despite being a relatively small industry in the American economy,⁸ sports receive an inordinately large amount of attention from the media. After all, no other industry has an entire section of each local newspaper devoted to its happenings. Such coverage raises the cost of failure to the participants in sporting contests. Losing in sports, as noted earlier, is not a private affair. Sports fans both near and far witness your failure and are often not shy in expressing their disappointment. Although people do pay some attention to failures in non-sports industries, it’s rare to see interested observers in other industries pay money to yell obscenities at those who fail to achieve success.

Sports are not only different in terms of attention received. In sports, success and failure would seem to be—relative to other industries—somewhat easy to understand. To illustrate, ask yourself the question: At your place of employment, who is the most productive worker? Yes, we know. It must be you. But is this something you could prove? We suspect, for many people, this would be difficult. For workers in many non-sports industries, measuring worker productivity is difficult.

Take our profession, college professors. We both think of ourselves as above average professors. But such a self-assessment may be dubious. In fact, a survey at the University of Nebraska revealed that 94% of college professors thought they were better teachers than the average at that same institution. We don’t think this obvious delusion is unique to Nebraska. Neither of us can recall meeting a fellow professor who thought he or she was below average.

It also turns out that professors are not the only people who overestimate their abilities. Thaler and Sunstein find evidence of this phenomenon in surveys of MBA students, drivers, and new business owners,¹⁰ and this is just a partial list. They go on to note that “unrealistic optimism is a pervasive feature of human life; it characterizes most people in most social categories.”¹¹

In sports, though, there’s a brake on this natural tendency. If we asked Jeff Francoeur of the Atlanta Braves how his hitting in 2008 compared to the league average, Francoeur would be hard pressed to argue he was above average. With respect to most of the standard measures of hitting performance, Francoeur was below average. Likewise, Francoeur’s teammate Chipper Jones can be pretty confident

that he really was an above-average hitter in 2008. Again, that's what the stats indicate.¹²

Because sports come with numbers, evaluating worker performance in sports would seem to be easier. Consequently, the path to success would seem—relative to what's seen in other industries—easier to navigate. Unfortunately, there are a few stumbling blocks on the path to victory.

The stumbling blocks can be separated into two broad categories. First, numbers have to be understood. Coaches and general managers can see the numbers associated with each player's performance. But how these numbers connect to wins is not always appreciated. Even if the numbers were understood, though, another stumbling block gets in the way. Understanding the past doesn't have much value if the past can't predict the future. Some numbers in sports are simply inconsistent across time. When that's the case, following the unpredictable numbers makes the path to victory hard to find.

What the numbers mean for the present and future is the foundation of our story. But before we get to that story, we need to address a fundamental objection to any sports analysis offered by academics. Specifically, is it likely that academics would be able to say anything that the "experts" employed in the sports industry don't already know?

Crunchers, "Experts," and the Wrath of Randomness

Even if you don't believe people are perfectly rational, you might still expect decision-makers in sports—where there is an abundance of information, clear objectives, and severe consequences for failure—to get it "right." After all, these people are the "experts." There is no reason to think that some college professors armed with a slide rule can do any better.

Let's respond to that by noting that neither of us owns a slide rule (or knows how to use one). We do, though, have spreadsheets and some fairly sophisticated econometric software. There are a number of examples where people armed with such tools can see things that "the experts" miss. Some of our favorite examples come from places as diverse as the wine industry,¹³ analysis of Supreme Court decisions,¹⁴ and the treatment of heart patients in the emergency room.¹⁵ In essence, it appears that human beings—who are not actually lightning calculators—tend to lose in a contest against actual lightning calculators.¹⁶ Such an outcome is observed whether or not the human being is an "expert."

Related to the obvious point that people are not lightning calculators is a classic finding in psychology. People in sports often claim they can simply watch a player during a game and "know" if he is good or bad. The seminal work of George Miller, though, has shown that the human mind can only track about seven items at one time.¹⁷ In sports, though, a multitude of events are happening throughout the contest. All these events not only have to be seen and noted, the impact of these factors on wins must be ascertained. To claim that you can simply watch a player and see his or her overall contribution to wins suggests that you believe your mind can do something that research suggests is difficult. Despite the limitations of personal observation, though, human beings still tend to believe the analysis based on this approach is correct. Such overconfidence can often cause people to ignore contradictory information.

Statistical analysis, though, can overcome these issues. Spreadsheets and statistical software can evaluate more games than a person can ever personally observe. These evaluations can also allow us to look past the "most dramatic factors" and identify which factors truly matter most in terms of wins. Furthermore, the analysis can also easily change as new data arrives. Perhaps most importantly, statistical models come with confidence intervals.¹⁸ In other words, statistical models can assess the quality of the prediction being made. Try getting that kind of service from a human expert!

Number crunching does more than offer better explanations than what we get from “experts.” It can also tell us when there really isn’t an explanation. In other words, number crunching can help us see when a process is inherently random.

Let’s illustrate this last point with an oddity from the Super Bowl. As of 2009, the National Football Conference (NFC) team has won the coin toss at the Super Bowl for 12 consecutive years. Such a streak clearly indicates that the NFC has some secret that allows it to better predict coin tosses; and the American Football Conference (AFC) better do some work if it hopes to close the “coin toss predicting gap.” Then again, maybe there’s another possibility. Flipping a coin is a random process. Even if you flipped a coin 12 times in a row with the same result, the process is still random. The outcomes don’t tell us anything about the skill level of the NFC teams. This point should be obvious since predicting a coin toss is not an actual skill.

This simple story highlights an additional advantage of analyzing sports data, and another potential pitfall for decision-makers. Some numbers that we associate with an athlete represent the skills of the performer. Other numbers, though, are not about a player’s skill, but instead are determined by the actions of the player’s teammates (or coaching or some random process). The analysis of numbers can actually clue us in on the skills versus non-skills argument. In the absence of such analysis, though, a decision-maker can actually suffer from the “wrath of randomness.” Specifically, a decision-maker can be fooled by numbers that are as reliable predictors of the future as the numbers generated by a coin-flipping game. When that happens, money can be wasted on players who are not really helping. Or on the flip side, a player with some supposedly poor numbers can be removed from the roster when in fact the player is actually helping the team win.

A Century of Mistakes in Baseball

Although the “wrath of randomness” does rear its head in the study of sports, often the numbers do tell a story. Let’s start with a great story that reveals a century of mistakes in Major League Baseball (MLB).

In 1997, the Oakland A’s ranked toward the bottom in Major League Baseball, in respect to both team payroll and winning percentage. The next season, Billy Beane became general manager, and part of this story stayed pretty much the same. Specifically, the lack of spending on players didn’t change. What did change were the outcomes achieved by the A’s. From 1999 to 2002, only the New York Yankees, a team that spent three times more on playing talent than Beane, managed to win more games in the American League. The term “more” is a bit misleading. The Yankees actually won only two more games than the A’s across these four seasons.

How was this possible? It’s been argued²⁰ that the key was Beane’s ability to recognize specific inefficiencies in baseball’s labor market. Such inefficiencies allowed Beane to pick up talent that was both cheap and productive.²¹

At least, that’s the story that’s been told. For the empirical evidence supporting this tale, we turn to the work of Jahn Hakes and Raymond Sauer. These economists decided to investigate whether the baseball player market was, as they say, “grossly inefficient.” Before we get to their answer, however, let’s briefly describe an efficient labor market. A basic tenet in economics is that workers are paid in line with their expected productivity, that is, workers who are expected to be the most productive get paid the most. This suggests that baseball players who are expected to perform the best are paid the highest salaries (at least, once they become free agents). In a world where some teams are “rich” and others “poor,” the best players typically end up on teams that have the ability to pay the most. In other words, we would expect the Yankees—or the “rich” team—to get the best talent, and a “poor” team

like the Oakland A's should end up with the less capable players.

The key to the above reasoning is the phrase “ballplayers who are expected to be the most productive.” This tells us that having money isn't enough. Teams have to be able to identify the “most productive” players. If one team can do a better job at identifying the “most productive,” then that team might be able to field a very good team that's not very expensive.

To see if the Oakland A's actually followed this blueprint, Hakes and Sauer needed to connect three dots:

- They needed to uncover how various performance characteristics impact wins in Major League Baseball.
- They needed to figure out what individual teams were willing to pay for each performance characteristic.
- They needed to determine whether the salaries that various performance characteristics command is consistent with how those measures impact wins.

To cut to the chase, Hakes and Sauer found that “...hitters' salaries during this period (2000-2003) do not accurately reflect the contribution of various batting skills to winning games.” Furthermore, “the inefficiency was sufficiently large enough that knowledge of its existence, and the ability to exploit it, enabled the Oakland Athletics to gain a substantial advantage over their competition.”²²

How did they reach this conclusion? First, data was collected on team winning percentage, team on-base percentage,²³ and team slugging percentage²⁴ for all 30 MLB teams from 1999 to 2003. They then ran a simple regression.

Okay, we get ahead of ourselves. What's a “simple regression?” Regressions²⁵ are essentially the test tubes of economics. When a chemist seeks to understand the world, he or she steps into a laboratory and starts playing around with test tubes. These test tubes allow a chemist to conduct controlled experiments. Hakes and Sauer, though, could not conduct a controlled experiment with Major League Baseball (at least, Major League Baseball probably wouldn't let them do this). What they could do, though, is employ regression analysis. This is simply a standard technique economists employ to uncover the relationship between two variables (like player salary and on-base percentage), while statistically holding other factors constant. When properly executed, regression analysis allows one to see if the relationship between two variables exists; or more precisely, if the relationship between two variables is statistically significant.

Beyond statistical significance, we can also measure the economic significance of a relationship,²⁶ or the size of the impact one variable has on another. Consider how on-base percentage and slugging percentage relate to team wins. Hakes and Sauer found both to be statistically significant. On-base percentage, though, had twice the impact on team wins. Such a result suggests that players should be paid more for on-base percentage. The study of salaries, though, suggested that prior to 2004, it was slugging percentage that got a hitter paid. In fact, in many of the years these authors examined, on-base percentage was not even found to have a statistically significant impact on player salaries.

After 2004, though, the story changed.²⁷ An examination of data from 2004 to 2006 reveals that on-base percentage had a bigger impact on player salaries than slugging percentage. In other words, the inefficiency exploited by Billy Beane was eventually eliminated.²⁸

It's important to note, though, how long this took. The National League came into existence in 1876. All of the data necessary to calculate on-base percentage was actually tracked that very first season in the 19th century. However, it was not until the 21st century—or after more than 100 years—that the

numbers were understood by decision-makers in baseball. It appears that decision-makers in baseball made the same mistake in evaluating talent year after year, and this continued for a century. Such a tale suggests that maybe all those fans are on to something. Maybe coaches and general managers are capable of repeating the same mistakes.

Of course, one story from the real world of sports doesn't make a point. What we need is a multitude of stories. And that's what we provide. The stories we tell give insight into how free agents are evaluated, how teams make decisions on draft day, and even how choices are made on game day. We even present evidence that the evaluation of coaches in the National Basketball Association (NBA) is less than ideal.

All of these tales from the world of sports tell one very important story. Decision-making is not often as rational as traditional economics argues. And that story has an impact on our understanding of both sports and economics.

2. Defending Isiah

The New York Yankees spent more than \$1.5 billion on acquiring playing talent between 1999 and 2008. Across these years, no team in baseball won more regular season games. Although critics would note that a World Series title proved elusive from 2001 to 2008, a list of top teams in baseball across the past ten years would certainly begin with the Yankees.

The Yankees' experience suggests that innovations like those employed by Billy Beane are not the only way to achieve victory. If you simply have more resources than your competition, this can also lead to success. Of course, you need to know how to use those resources. It also helps to have some luck on your side.

The importance of knowledge—and perhaps luck—can be illustrated when we look at other sports. From 2000 to 2008, the Washington Redskins spent the most in the National Football League (NFL) yet failed to win half their games. The New York Rangers of the National Hockey League (NHL) paid its players more than anyone else from 2000-01 to 2007-08. Despite this spending, 19 other teams—a league with 30 franchises—achieved better results on the ice. So the link between spending and success is not that clear.

If we look at all teams in North American sports, the link is even murkier. [Table 2.1](#) examines¹ the relationship² between a team's relative payroll (a team's payroll in a given season divided by the average payroll in a league that season) and its regular season winning percentage. In all of the sports, more than 75% of the variation in winning percentage is *not* explained by a team's spending. In basketball and football, a team's spending explains less than 10% of the variation in wins. Contrary to what we see when we look at the Yankees, simple statistical analysis demonstrates that it takes more than money to find success in sports.

TABLE 2.1 The Link Between Payroll and Wins in the Major North American Sports

League	Percentage of Wins Explained by Relative Payroll
National Hockey League	24%
Major League Baseball	18%
National Basketball Association	6%
National Football League	2%

Isiah Thomas Illustrates How Money Can't Buy You Love

To further illustrate this point, let's look at the New York Knicks. From 1997-98 to 2003-04, the Knicks finished either first or second in league payroll every single year. Although the team did reach the NBA Finals in 1999, their average finish was...well, quite average. Across these seven seasons the Knicks only won six more games than they lost. The consistent "averageness" of the team led the Knicks to hire Isiah Lord Thomas III in December 2003.

Today it's understood that Isiah's tenure in New York was not exactly successful. But that's not the way it started. William Rhoden of the *New York Times* stated soon after the Knicks announced the hiring of Isiah: "If you love the Knicks and don't like this move, you must be delirious. This was a great move for the home team."⁴

When we look over Isiah's resume before he came to the Knicks, we suspect that Rhoden was not the only one to think Isiah was going to make the Knicks better. As an All-American point guard, Isiah led

Indiana University to the NCAA championship in 1981. After winning this title he left the Hoosiers for the NBA. Taken by the Detroit Pistons with the second overall choice in the 1981 draft, Isiah quickly became a fixture at the midseason All-Star game. When his 13-year career was over he had appeared in the All-Star game 12 times and was widely believed to be the primary reason the Pistons (i.e., the Bad Boys) won the NBA title in both 1989 and 1990. Isiah retired in 1994, and two years later, he was named one of the 50 greatest players in the NBA's first 50 years. This honor was followed by election to the Hall of Fame in 2000.⁵

After his playing days were over, Isiah spent time as a front office executive with the Toronto Raptors, a broadcaster with NBC, and head coach with the Indiana Pacers. At each stop he was hired because he was believed that Isiah was a winner who was an expert on the subject of basketball.⁶ So when the New York Knicks were looking for someone to convert their league-leading payroll into league-leading performance on the court, Isiah's name rose to the top of the list.

Few people in the NBA could claim in December 2003 that they knew more about basketball than Isiah Thomas. Of course, after Isiah left the Knicks in 2008, the assessment of Isiah in many circles had changed. The path toward changing this assessment actually began with the very first move Isiah made as general manager. Within days of taking the job, Isiah sent several players and draft picks to the Phoenix Suns for a collection of players that included point guard Stephon "Starbury" Marbury.

It's not hard to conclude that when Isiah looked at Starbury, he essentially saw himself. Like Thomas, Marbury was a very high draft choice, taken with the fourth pick in the 1996 draft. Like Thomas, Marbury was named to the All-Rookie first team. And like Thomas, Marbury also had many All-Star appearances on his resume. Beyond being a high draft choice and an All-Star, Marbury and Thomas have some clear statistical similarities.

Before discussing the similarities between the statistics of Marbury and Thomas, let's briefly talk about the NBA box score numbers. The numbers the NBA tracks for its players can be separated into three categories: scoring factors, possession factors, and help factors. With respect to scoring we have points scored, which are derived from the number of shots a player takes and the player's ability to convert these shots into points. Shots are divided into two categories, field goal and free throw attempts. Because players can take both two-point and three-point shots, for shooting efficiency from the field we focus on adjusted field goal percentage.⁷ Beyond scoring are two additional categories. Possession factors include rebounds, steals, and turnovers; or actions that measure how well a team keeps—or acquires—possession of the ball.⁸ Then, there are help⁹ factors. Within this category are assists (passes that help a teammate score), blocked shots (which can be thought of as defensive help) and personal fouls (which can be thought of as actions that help your opponent).

[Table 2.2](#) reports the career averages of each player at the age of 26 (the age when Marbury arrived in New York). The first numbers listed tell us that, relative to the average point guard, both Thomas and Marbury were very good at scoring. There is an issue, though, with how these scoring totals were accumulated. Scoring totals depend on both shooting efficiency and the number of shots taken. Both Isiah and Marbury were slightly below average in shooting efficiency, but they were able to accumulate lofty point totals by simply taking more shots.

This issue of shot attempts is important. Except for Isiah's rookie season in 1981-82, he led the Detroit Pistons in field goal attempts in each season during the 1980s. Prior to arriving in New York, Marbury played for the Minnesota Timberwolves, New Jersey Nets, and Phoenix Suns. With the latter two teams, Marbury was consistently the leader in field goal attempts. Remember, each of these players was a point guard, and relative to the level of shooting efficiency we typically see from the

position, both Isiah and Marbury were below average. Despite being inefficient scorers, though, each player tended to call his own number on offense first.

TABLE 2.2 The Career Numbers of Stephon Marbury and Isiah Thomas at Age 26 (Numbers A Per 48 Minutes Played)

Statistic	Average Point Guard ¹⁰	Stephon Marbury	Isiah Thomas
<i>Scoring Factors</i>			
Points Scored	19.1	25.6	26.9
Field Goal Attempts	16.2	21.3	22.2
Free Throw Attempts	4.7	7.4	7.9
Adjusted Field Goal Percentage	48%	47%	47%
Free Throw Percentage	79%	78%	76%
<i>Possession Factors</i>			
Rebounds	4.6	3.8	5.0
Steals	2.2	1.6	2.8
Turnovers	3.6	4.1	5.0
<i>Help Factors</i>			
Blocked Shots	0.3	0.2	0.4
Assists	9.0	10.2	13.1
Personal Fouls	3.8	3.1	4.5
WP48	0.100	0.093	0.156
Career Wins Produced	na	39.7	66.1

In a moment, we will get to our explanation for this behavior. Before we do, though, let's finish our assessment of Marbury and Thomas. Beyond scoring totals, Marbury was only above average with respect to assists and personal fouls. Isiah brought a bit more to the table, exceeding the marks of an average point guard with respect to rebounds, steals, blocked shots, and assists.

Given all these numbers, what is needed is some way to summarize each player's impact. And that something is presented in the last lines of [Table 2.2](#). In our earlier book, *The Wages of Wins*—and Appendix A, “Measuring Wins Produced in the NBA”—are details on how the box score statistics tabulated for individual players can be used to measure each player's contribution to team wins. This metric—called Wins Produced—essentially argues that a player's contribution to wins is driven by shooting efficiency, rebounds, turnovers, and steals.¹² Yes, assists, blocked shots, and personal fouls do matter. But teams win because they score when they have the ball, and they prevent the opponent from doing likewise. That means players help a team win when they hit their shots and dominate the factors that take and keep the ball from their opponent.

To evaluate how much a player is helping or hurting, one needs to consider the performance of an average player. As reported in [Table 2.2](#), an average player in the NBA produces 0.100 Wins per 48 Minutes (WP48). Marbury's career mark prior to coming to the Knicks was close to, but slightly below, average. To be fair to Marbury, his WP48 with the Phoenix Suns in 2003-04 was 0.136, a mark quite close to what Isiah achieved across his first seven seasons. In other words, Marbury's performance at 26 years of age was similar to Isiah's career average at the same age.

As we will emphasize, Wins Produced can be described as a measure that accurately captures a player's contribution to wins. But it doesn't accurately capture the perceptions of a player's value. These perceptions are driven by scoring. Consequently, in the 1980s, people believed Isiah Thom

was the most important player on the Bad Boys.¹³ Given this belief—which we suspect Isiah shared—one should not be surprised to see Isiah find a player just like himself to rebuild the New York Knicks. Isiah, though, didn't stop with the acquisition of Marbury. After bringing Starbury into the fold, Isiah behaved as if he believed that if one scorer is good, then a whole team of scorers must be better. By the start of the 2005-06 season, every single player who was on the roster when Thomas took over in December 2003 was gone. The list of players he added¹⁴ included Jamal Crawford, Eddy Curry, Quentin Richardson, Channing Frye, and Zach Randolph. What do these players have in common? All of these players were above average scorers before they arrived in New York.

Unfortunately, all of these players had something else in common. Although each was an above average scorer, each player also had flaws that undermined his overall effectiveness. For example, Marbury, Crawford,¹⁵ Richardson,¹⁶ Frye, and Randolph¹⁷ were below average in shooting efficiency. Curry¹⁸ was above average in shooting efficiency, but below average with respect to almost every other aspect of the game. Specifically, although Curry is 6'11" and weighs 285 pounds, he has consistently been below average on the boards. He's also prone to commit turnovers. The problem with Curry had getting and keeping the ball actually negated the positives his scoring created.

The 2005-06 season was the first year that Marbury, Crawford, Richardson, Frye, and Curry played together. In that season, the Knicks spent \$126.6 million on players, the highest mark in NBA history.¹⁹ All this money, though, only produced 23 wins. And since the regular season is 82 games long, this expensive collection of flawed scorers also lost 59 games. The next season, with Isiah adding head coach to his list of duties, the Knicks spent the second highest amount in NBA history and won just 33 games.

In the summer of 2007, Isiah made his last major acquisition, acquiring Randolph from the Portland Trail Blazers. With Randolph on board, the Knicks looked to have enough fire power to contend in the Eastern Conference. But when the season ended, the Knicks—in a repeat of the 2005-06 season—only won 23 games.

That's how Isiah's tenure in New York ended. In the four complete seasons with Isiah leading the team, the Knicks only won 112 games. This works out to only 28 victories—and 54 losses—per season. Only two teams—the Atlanta Hawks and Charlotte Bobcats—were less successful during the Isiah years in New York. Atlanta and Charlotte, though, ranked last in the NBA in payroll, combining to spend only \$339 million on player salaries. In contrast, Isiah's Knicks spent \$442 million on players, a mark that led the NBA across these four seasons. To put the level of inefficiency in perspective, in these same years, the San Antonio Spurs, Miami Heat, and Boston Celtics spent between \$245 and \$258 million on playing talent. These were the three teams that won the NBA titles—the titles Isiah was hired to win—from 2005 to 2008.

Isiah's record in New York led many to conclude that he was simply very bad at his job.²⁰ Despite years of success in the NBA, he simply didn't know how to build a winner. Although this might seem obvious in hindsight, we think there is evidence that Isiah was just as smart as his fellow general managers. Unfortunately, the immense budget the Knicks gave him to build a winner led Isiah to build a loser.

Getting Paid in the NBA

How can we blame the budget? To understand our argument, one has to understand what gets a player paid in the NBA.²¹

We have already noted that wins are primarily impacted by shooting efficiency, rebounds, and turnovers. One might suspect that these would be the factors that primarily determine a player's salary. But such suspicions are dashed by the empirical evidence. Just as we saw in baseball—where on-base percentage historically had a larger impact on wins than it had on player salaries—the factors that have the largest impact on wins are not the factors that get an NBA player more money.

To see what determines the flow of money, a statistical model²² was estimated linking the average salary paid to NBA free agents to how these players had performed on the court, as well as a variety of nonperformance factors.²³ The results, summarized in [Table 2.3](#), indicate that an NBA player is paid more money if he stayed healthy, played on a winning team, signed with the same team, and was a starter. He gets less money as he ages and if he played the shooting guard position.

TABLE 2.3 What Explains Free Agents' Salaries in the NBA?

Statistically Significant and Positive Factors	Statistically Insignificant Factors
Points Scored	Shooting Efficiency from the Free Throw Line
Shooting Efficiency from the Field	Steals
Rebounds	Turnovers ²⁴
Blocked Shots	Size of Market Where Player Signs
Assists	Playing the Center Position
Games Played Last Two Seasons	Playing the Power Forward Position
Signing with the Same Team	Playing the Point Guard Position
Regular Season Wins for Player's Team Last Season	Race of Player
Ratio of Games Started to Games Played	
Statistically Significant and Negative Factors	
Personal Fouls	
Age	
Playing the Shooting Guard Position	

With respect to performance on the court, steals and turnovers do not impact a player's pay. Yes, the possession factors impact wins. But players like Eddy Curry don't appear to lose money when they fail to hang on to the ball.

What performance factors do get a player paid? The dominant factor is the number of points a player scores. If an average free agent²⁵ increased his scoring by roughly 5 points per 48 minutes played (i.e., one standard deviation²⁶), then his salary would increase by \$1.4 million. The same approach applied to other statistics—such as rebounds, blocked shots, assists, and shooting efficiency—fails to unearth a single measure where a one standard deviation increase in performance leads to a \$1 million increase in pay.²⁷

Okay, scoring matters. But doesn't trying to score more points impose a penalty? Specifically, it is believed that a player who tries to take more shots will see his shooting efficiency decline, and the model indicates that declines in shooting efficiency lead to lower pay. Consequently, players who decide to take as many shots as their coach allows might not see much more money.

At least, that's a story one might tell. There are three problems, though, with this tale. First of all—detailed later on—the actual link between shooting efficiency and shot attempts is not very large.

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