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The Jock Exchange

by Michael Lewis May 2007 Issue

Wall Street is about to launch a new way to trade professional athletes the way you trade stocks. A piece of Tiger, anyone?



Photo by: Koichi Kamoshida

When financial historians look back and ask why it took Wall Street so long to create the first public stock market that trades in professional athletes, they will see ours as an age of creative ferment. They'll see a new, extremely well-financed company in Silicon Valley that, for the moment, sells itself as a fantasy sports site but aims to become, as its co-founder Mike Kerns puts it, "the first real stock market in athletes." And they'll find, in the bowels of the U.S. Patent and Trademark Office, an application from a cryptic entity called A.S.A. Sports Exchange containing a description of a design for just such a market: The athlete would sell 20 percent of all future on-field or on-court earnings to a trust, which would, in turn, sell securities to the public. They'll also single out the birth of the first European hedge fund that runs a multimillion-dollar portfolio of professional soccer players, the value of which rises and falls with the players' performances.

"The fans have always had an emotional investment without a [legal] financial one," says a leading sports agent, one of the principals of the A.S.A. Sports Exchange, who prefers to remain nameless. "This is taking emotion and putting it to financial use. Screw this putting 300 bucks into a pot at work. This is 'everyone get online and open your account at Ameritrade.' The fans will be in the same position as the owners of sports teams—they'll be making money off [the players] or losing money on them. They'll just have more flexibility than the owners."

As a number of smart people seem to have noticed at once, professional athletes have all the traits of successful publicly traded stocks, beginning with enormous speculative interest in them. Americans wager somewhere between \$200 billion and \$400 billion a year on sports, and between 15 million and 25 million of them play in fantasy leagues—which is to say that a shadow stock market in athletes already exists. That market may not know everything there is to know about the athletes it values, but it probably knows more than New York Stock Exchange investors know about the N.Y.S.E.'s public corporations. "People worry about lack of transparency in sports," says the leading sports agent. "My newspaper this morning has two and a half pages of business news and 17 pages of sports. The day after the game, you know Peyton Manning's thumb is hurt. What do you know about the C.E.O. of I.B.M.?"

Professional and even pre-professional athletes have a long list of investors who might like to hedge their bets—a list topped by the athletes themselves. In general, athletes with the least-certain future will be the most likely to want to sell a piece of it to advance themselves a bit of cash, just in case. Tiger Woods is a prime candidate to launch the new market. But Tiger Woods' financial future is secure; he's the sports equivalent of a blue-chip stock. The 21-year-old who is new to the tour or the 18-year-old who is still a few years away from the tour is a different story. They need capital.

Again, the analogy with the stock market holds. The early-stage company (or young and less proven athlete) makes for a volatile asset. At 28, after seven years in the major leagues, pitcher Barry Zito has just signed a seven-year, \$126 million guaranteed contract with the San Francisco Giants. The market knows with near certainty that Zito will be paid that amount over the next seven years, so all the action in Zito's stock would be bets on what he'll earn after the age of 35. Two years ago, Zito would have been a lot more interesting. An

investment in the 26-year-old Zito would have come with big risks—a wager not only on his talent and health but also on the market for starting pitchers in the major leagues—but would have paid off nicely. Seven years ago, Zito would have been where the action was. A gamble then on the 21-year-old star of the minor league Sacramento River Cats could have made you rich.

It would also have made you one of the people addressing a vexing problem at the core of professional sports: how to appraise talent. “The most important thing in sports by far,” says Daryl Morey, the 34-year-old assistant general manager of the Houston Rockets, “is getting the right players for the right price.” But the front offices of pro-sports franchises usually don’t even know how to put an exact value on what a player has done, much less on what a player will do. Five years ago, major league teams overvalued hitters’ batting average, undervalued on-base percentage, and hadn’t a clue how to assess defense or baserunning. But last year, the Oakland Athletics’ front office will tell you, on-base percentage was actually an overvalued statistic.

In sports other than baseball, games are far messier, from a statistics viewpoint at least, and the problem of valuing players even bigger. Fifteen years ago, the left tackle was the lowest-paid player on the football field; now he is the second highest, after the quarterback. Why? Did the game change that much, or are teams just following a fad? Basketball teams have always paid top dollar to the players who score the most, even though three professional economists, in their analysis of pro sports *The Wages of Wins*, argue that scoring average is the single most overvalued trait in a basketball player.

And if you think it’s hard to value a player who has been in the N.B.A. for a few years, you should try putting a number on, say, Ohio State’s star freshman center, Greg Oden, who’s projected to be the first pick in the N.B.A. draft. The less of a track record players have, the greater the uncertainty about their future. So the deepest mystery in every sport is the value of a player before he or she has been tested by the pros. Enter Wall Street, with its roughly 250 years of experience assigning prices to assets with uncertain futures.

If you had to pick a moment when Wall Street put itself on a collision course with professional sports, you could do worse than 1994, when Ken Mauriello and Jack Armbruster quit their jobs analyzing and trading futures and options on the Chicago Board Options Exchange to design a system for valuing baseball players. The two went from looking for inefficiencies in the financial markets to looking for inefficiencies in the market for professional athletes, but their approach to the problem remained essentially the same: Collect better information and analyze it more intelligently. Compared with the financial markets—which were big, smart, and mature—baseball offered a huge trading opportunity. “In baseball,” says Mauriello, “you had the inefficiencies that come from sloppy data.”

With that in mind, they created a system called advanced value matrix, or A.V.M., which eventually transformed conventional baseball accounting. Under the traditional approach, when Yankees third baseman Alex Rodriguez hits a lazy fly ball that the center fielder loses in the sun, A-Rod would be credited with a double, the pitcher debited with giving up the double, and the center fielder would have nothing registered for

or against him. But A.V.M. would measure the angle and velocity of the batted ball (out of 10 possible combinations) and the spot (out of 8,000 possible) in the outfield where it landed. This information would then go into an arduously assembled database of tens of thousands of baseball games, where it would emerge that, in this example, A-Rod's fly ball was identical to, say, 5,000 others over the previous 10 seasons, and 97 percent of the time it was an out, not the double A-Rod was credited with. And so, in A.V.M., A-Rod made 97 percent of an out, the pitcher is credited with getting 97 percent of an out, and the center fielder is debited for failing to make a routine play.

Baseball people have always known, of course, that luck plays a role in the game. But they assumed that good luck and bad luck even out—and they don't. Pitchers, especially, are at the mercy of forces beyond their control. At the end of each season, you will find a bunch who've been unlucky but who, you can be fairly certain, will rebound and another bunch who've been lucky but who will likely regress in the next season. This would seem to be useful information for any baseball team to know. And when Mauriello and Armbruster shopped their system around to major league teams, one person who was particularly interested was a recent Harvard graduate named Paul DePodesta, who had eschewed a career on Wall Street to take an internship for the Cleveland Indians. "It opened my eyes," DePodesta says. "The system extracts the element of luck."

DePodesta had become fascinated with building a better system for evaluating players, and he thought of A.V.M. as a tool to measure—and a metaphor for—the market's glaring inefficiencies. In 1998 he was hired as the chief assistant to Billy Beane, the new general manager of the Oakland A's. Once installed, he set about adapting A.V.M., helping the A's become by far the most cost-efficient team in baseball. DePodesta has since moved on—first to become the general manager of the Los Angeles Dodgers and then the San Diego Padres' special assistant for baseball operations—and so has the process he worked to kick-start. Thanks to DePodesta's model, every step Oakland A's management now takes is in the direction of abstraction, complexity, and data gathering, to increase its precision in valuing baseball players. Oakland tracks every major league at bat, to measure how hard the ball is hit.

Four years ago, I used the Oakland story to frame a book, *Moneyball*, but the A's were really just the subplot of another story: the intellectualization of professional sports. The trend in pro sports—away from the intuition of insiders and toward a more objective, data-driven valuation of assets—resembles the shift that transformed global financial markets in the 1980s and early 1990s. There's never been a better time for the guy with no muscle definition, Coke-bottle glasses, and a laptop to influence the value of a professional athlete. In the past three years, at least a dozen baseball teams have hired the type of young statisticians you'd more commonly find working in risk arbitrage at Bear Stearns. Dallas Mavericks owner Mark Cuban has a team of nerds trying to create new and more useful basketball statistics. ("The problem," he tells me, "is that we're not even measuring the right things on the court.") The Houston Rockets' Morey may never have played pro basketball, but he studied computer science and statistics at Northwestern and taught at M.I.T. ("Econometrics is a very good background for what we do," he says, "because we're dealing with messy data.") The Denver Nuggets employ Dean Oliver, who has written a book, *Basketball on Paper*, about how statistics might be used to better understand the game. The San Francisco 49ers have Paraag Marathe, formerly of the Stanford Graduate School of Business and the consulting firm Bain & Co. And he's not selling

ads on the JumboTron; he's working up ideas for the head coach on how to better manage football games.

This trend naturally leads to the creation of a public financial market trading in jocks, in which every quant on and off Wall Street will have a shot at solving what is now commonly referred to as the sports problem. The only question about this market is where it will open and what, exactly, it will trade in. Not very long ago, when Wall Street considered making individual human beings into securities, it looked to the bond market; for example, in 1998, when SPP Hambro & Co. tried to sell stakes in Frank Thomas, then the Chicago White Sox's first baseman, they were going to take the form of \$20 million in bonds backed by Thomas' baseball salary. But it's hard to see the fun in lending Frank Thomas money in the hope that he lives long enough to pay you back. Owning a piece of Frank Thomas—that would be different. For every investor who might consider lending Thomas money, there are thousands who'd like to buy Thomas outright—and thousands more who'd short-sell him.

With that in mind—and taking the Oakland A's as his inspiration—in 2004, Mike Kerns left his job working for sports agent Jeff Moorad, now general partner of the Arizona Diamondbacks, to accept millions of dollars in Silicon Valley venture capital and open a jock exchange called Protrade. (His co-founder was Jeff Ma, the ringleader of a group of M.I.T. students, made famous by the book *Bringing Down the House*, who won more than \$3 million from Las Vegas casinos.) On the surface, Protrade, which has its headquarters in San Mateo, California, looks like another fantasy-sports website, but just below the surface lies the model for the jock exchange. Like a market in corporate shares, Protrade trades year-round and in real time, and a lot of different people can buy the stock and own, in effect, little pieces of an athlete. They can watch their Peyton Manning stock rise and fall from play to play during the season and see what happens if he's traded to another team in the off-season. The exchange also allows them to short the jock's stock—to profit from his poor performance. Each stock pays dividends, which gain in value based on the athlete's on-field performance.

Protrade's goal is to model the underlying reality of a sport. It's the reason the company employs researchers, and it's what got Protrade hired to consult for the Portland Trail Blazers and San Francisco 49ers. In the beginning, this market will probably be based on cruder and more widely understood performance stats. "But," says Kerns, "as the market grows and the liquidity and sophistication of institutional investors increase, there will be trading products that require more-sophisticated analysis, and we'll need to truly quantify the value of an assist that leads to a dunk versus an assist that leads to a 5-foot jumper, or the value a running back should receive for a 3-yard run versus an 8-yard run, compared with the value received by the offensive line."

In 2005, the Tampa Bay Buccaneers' rookie running back, Cadillac Williams, became a star by racking up nearly 1,200 yards, averaging 4.1 yards per carry. One year later, Williams ran for 798 yards, with only 3.5 yards a carry, becoming, apparently, mediocre. But the sophisticated investor might attribute Williams' trouble to Tampa Bay's play calling, which was usurped by the head coach, Jon Gruden. Indeed, the stock in Williams would eventually comprise information about the value of his offensive coordinator, offensive line, fullback, and everything else that alters, however slightly, Williams' ability to run. Williams won't need to complain to the press that he's being misused. His shares will complain on his behalf.

A jock stock's price is driven not directly by the athlete's performance, but indirectly by supply and demand for the stock (just as in the real stock market). An athlete's performance is important, of course. It's the equivalent of corporate earnings. But the price of the stock is set by the market. A bet on the future dollar value of a player isn't really based on the player's performance, but on the market's perception of that performance. The successful investor will need to predict who will play well and how play in general is understood. As it happens, we are living through a period in which the interpretation of athletic performance changes rapidly. For example, Houston Rockets forward Shane Battier doesn't score a lot of points or snag many rebounds, and as a result, he isn't considered a terribly interesting basketball asset. But when Morey became assistant G.M. of the Rockets in 2006, he was less interested in Battier's points and rebounds than in the effect Battier's presence on the court would have on his team's points and rebounds. (It greatly improved both.) The Rockets obtained Battier in a trade before the 2006-2007 season, and his perceived value rose.

Here is the most intriguing possibility of this new market: It will create a feedback loop between itself and the salaries of pro athletes. Say, for example, a team of M.I.T. mathematicians managing a hedge fund based in Greenwich, Connecticut, has proven that running backs are far less important to a team's rushing yards than right guards are and, therefore, that the N.F.L. is underpricing right guards and overpricing running backs. The fund is set to make a lot of money in guards and running backs, but merely having a stunning insight or creating a new piece of sports knowledge won't be enough. The smart thing for the hypothetical hedge fund to do is to buy up a portfolio of star right guards, short a portfolio of running backs, and then release its information to N.F.L. teams so that they will start paying more for right guards and paying less for running backs.

As this new market takes shape, you can almost hear the moral objections and kvetching about the soul of professional sports. For example: "This is just legalized gambling." But the market is a way for legitimate businesspeople to reduce their risks. It is indeed gambling, but then, so is the New York Stock Exchange.

Or: "This market will be corrupted by the passion of sports fans. It'll be much dumber than the ordinary market." Maybe. But the irrational exuberance of sports fans will also be a boon to the market. Bad investors attract good investors, who see the opportunity to take their money—or as the leading sports agent puts it, "Smart people will be interested in this because stupid people will." And smart people, over time, will drive market values. When the agent mentioned his plan to a former Wall Street colleague, now a top hedge fund manager, the man said, "Great, in the beginning I'll just short every player," then added he would start with Tiger Woods.

Or: "You can't allow a pro athlete to cash out 20 percent of himself: It will reduce his incentive to try." But the great majority of long-term contracts in the N.B.A. and Major League Baseball are guaranteed, which means that a lot of players cash out 100 percent of their value no matter how they play. No one thinks twice about that. And why should a wheat farmer be allowed to hedge his crop while a baseball player can't?

Or: "You'll create a chance for athletes to make money by betting against themselves." But players can

already bet against their teams covertly. Dragging sports gambling out of the shadows and into the open increases the chances that players who bet against themselves or their team will be caught, presumably reducing the likelihood that they'll do it.

At this point, the soul of professional sports is beyond worrying about: Athletes are frantically self-interested; marvelously self-absorbed; always looking for any edge, however unfair; and forever leaping from team to team in search of a few more dollars. In other words, the jock market already has the morals of the stock market.

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