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Athlete Endorsement Contracts: The Impact of Conventional Stars

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Abstract Despite a continuing increase in the dollar value of athlete endorsement contracts and the prominence of athlete endorsements as a marketing tool, the value of endorsement contracts has gone largely unexamined. Employing event study analysis, this paper assesses the effects of endorsement contract announcements on changes in the share price of firms. In contrast to previous studies which focus on a single megastar athlete or sporting event and find significant positive returns to the firm, this study evaluates 148 endorsement announcements for conventional athletic stars in various sports and finds that the average endorsement contract has an insignificant impact on the market value of the firm. Also, there is no support of the product–endorser match-up hypotheses but endorsements by golfers do exhibit significant abnormal returns.

Keywords Athlete endorsement · Event study analysis · Athlete contracts

JEL Classification M00 · M21

Introduction

In June of 2003, LeBron James became the National Basketball Association's (NBA) number one draft pick and, prior to playing one regular season game, had signed a $90 million pact with Nike, plus millions of dollars in other corporate

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contracts with companies such as Upper Deck and Coca-Cola to endorse their products. James' agreement with Nike is second only to the $100 million deal struck with Tiger Woods, but substantially more than the $20+ million paid to Michael Jordan upon his return to the NBA in 2001 (Fisher 2003, p. 1 and Kurtz 2001, p. 1). Nike stock rose by 0.75% on the day the James' signing was reported, indicating that market investors thought Nike had developed a profitable strategy with the signing of James (Hiestand 2003, p. 11c). Not surprisingly, perhaps, athlete endorsements are the cornerstone of Nike's marketing activities.

Despite the apparent success of the Nike–James agreement, and the years of banking on big name athletes to build sales, some companies are beginning to believe that athlete endorsement contracts are not adding to their bottom lines. For example, Howard Burch (Sandomir 1998, p. C1), Vice President of Marketing for Fila America, suggests that "there has been an excessive saturation of athletes associated with signature products. It's too much of a good thing." Brett Shevack (1998, p. 26), CEO of a New York advertising agency, continues the argument stating that "…with few exceptions, nobody really knows which athlete is endorsing which company. Athlete endorsements have ceased to pay off. Ask any kid what brand of shoes Grant Hill wears. He probably won't say Fila."

These conflicting perceptions prompt the question: What is the economic value of an athlete endorsement contract? A number of studies have assessed how product endorsements by athletes may influence perceptions of a company and/or its product (e.g., Burnett et al. 1993; Thwaites 1995) but as Agrawal and Kamakura (1995, p. 56) state "a direct assessment of the effectiveness of a celebrity endorsement on a firm's profitability may be impossible" due to "the difficulty associated with isolating and measuring profit associated with a given endorsement campaign…." It is possible, however to examine how athlete endorsement contracts are perceived by the marketplace as a whole. If the investment market sees these contracts as being worthwhile, the adoption of such a strategy will add to the perceived value of the firm and should be reflected in the market price of the firm's stock (as in the Nike–James example above). Such changes in market value can be analyzed using event study methodology, which estimates the stock market's response to the public announcement of specific events like the signing of endorsement contracts.

Only a few studies have used event analysis to assess whether the benefits accruing to athlete endorsement contracts justify the costs of those contracts. Mathur et al. (1997) find that the announcement of Michael Jordan's retirement from professional baseball and return to the NBA in 1995 prompted a 2% increase in the market value of his client firms. Farrell et al. (2000) examine the market's reaction to the announcement of Tiger Woods' endorsement contracts with Nike, Fortune Brands (i.e., Titlelist), and American Express. There was no significant change for Fortune Brands but both Nike and American Express had average abnormal returns of 1% for the announcement day. Farrell et al. then investigated the market effects of subsequent tournament performance by Tiger on his client firms. Only Nike received abnormal returns from the additional publicity.

Perhaps no one is surprised that the two megastars of athlete endorsements—Tiger Woods and Michael Jordan—generated increased value for their client firms. Perhaps the surprise is the relatively small effect of their contracts. If these two superstars warrant only small positive growth in a firm's market value, what would

be the impact of public announcements of athlete endorsement contracts for lesser or "conventional" stars? Will the market respond positively to conventional star endorsements suggesting that such contracts add to the bottom line of the firm or will the market respond negatively reflecting the expectation of a diminished bottom line due to the ever increasing market saturation of athlete endorsements?

This study attempts to resolve this conflict by improving upon related prior research. The unique features include:

1. a relatively large sample of announcements of athlete endorsement contracts, the effects of which are not biased upwards by including megastars (e.g., Michael Jordan or Tiger Woods) or biased downwards by including athletes with tainted public images (e.g., Dennis Rodman, Kobe Bryant) or distorted by including non-athlete celebrities;
2. a rigorous review of market data that eliminates observations tainted by poor reporting methods or contaminated by other confounding announcements effects;
3. the use of the latest estimation techniques and most robust test statistics; and
4. an examination of multiple hypotheses about the effects of athlete endorsements.

Event Study Methodology

Event studies assume that stock prices reflect investor assessments of firm value. These assessments are expected to correctly and quickly incorporate all publicly available information about a firm. New information (i.e., announcements) deemed to be important by investors will result in significant changes in stock prices. Announcements which signal an expected increase in future profits should result in a stock price increase; announcements that signal an expected decrease in future profits should result in a stock price decrease. Announcements that signal a "fair-value" or trivial transaction should result in no significant change in stock price.

Announcements of athlete endorsement contracts may relay new information about firm value. The impact of the endorsements on expected profits of the firms would be assessed by investors and reflected in changes in the firms' stock prices. Stock price changes would occur quickly, or within a small window of time surrounding the event. In an event study, the observed change in stock price would then be compared to the firm's expected stock price change from normal market activity (i.e., absent any announcement effect). The difference between the observed price change around an announcement and the estimated normal market-induced price change is defined as the abnormal return associated with the announcement. Measuring and testing the significance of abnormal return is used to judge the economic worth of athlete endorsement contracts.

Measuring and testing the significance of cumulative abnormal returns provides a second test of the economic worth of contracts. Cumulative abnormal returns are calculated by summing the abnormal returns across event periods (i.e., a window of time before and after day 0, the announcement date) to address effects of possible leakages, unseen information dissemination, or announcements made after the stock market closes.

To estimate expected stock price changes from normal market activity, we use the widely accepted market model. The market model, as shown in Eq. 1, estimates security returns as a function of overall stock market return with adjustments for the security's pattern of past returns relative to the overall market. In Eq. 1, α and β are estimated by regressing the past returns of security i on the overall market returns. The estimation window is the 255 days ending 40 days prior to the announcement date. The estimates of α and β from the autocorrelation-corrected market model are then used to compute the estimated return for security i for date t $\left(\hat{R}_{i,t}\right)$ given the overall market return for date t $\left(R_{m,t}\right)$:

$$\hat{R}_{i,t} = \hat{\alpha} + \hat{\beta}\left(R_{m,t}\right). \tag{1}$$

The estimated abnormal return $\left(AR_{i,t}\right)$ for security i for date t (which would be a date around the date of the endorsement announcement) is the observed return for security i minus its estimated return, as shown in Eq. 2:

$$AR_{i,t} = R_{i,t} - \hat{R}_{i,t}. \tag{2}$$

Estimates are corrected for serial dependence. This correction is not due to any presumed dependence in the true market model error term, but occurs because all of the abnormal return estimators being cumulated are functions of the same estimators of the market model parameters.

Two statistics are used to test whether the average abnormal return is different from zero on the event day or within a given event window: (1) the standard cross-sectional z (SCS z) and (2) the rank test z.

The SCS z is adjusted for (a) measurement error in the market model parameters (as in Mikkelson and Partch 1988) which can lead to serial dependence and (b) possible increase in variance around the event date (as in Boehmer et al. 1991). The weights in calculating the z are the inverse of the standard deviation of the raw returns so that stocks with lower variances in prices are given greater weight. The unadjusted z can differ from the prediction error which is an unweighted average of the individual prediction errors. Consequently, the use of the SCS z is paramount to making effective hypothesis tests.

As a point of comparison to the parametric SCS z, we also use the non-parametric rank test (rank test z). Corrado (1989) found that the rank test z was more powerful than the parametric t as a result of highly non-normal distributions that characterize daily stock returns. Further analysis and discussion of the rank test is available in Campbell and Wesley (1993).

Announcement Data

We searched print media reports from January 1994 to December 2000 in the archived collection of articles provided by *Sports Business Daily* to find the date of the first announcement for a signing or forthcoming signing of an athlete endorsement contract. We then sought to determine if any prior information about the contract signing was reported in other news reports archived in the *Lexis/Nexis* database. A period of 1 year prior to the announcement date found in the *Sports*

Business Daily was used in the *Lexis*/*Nexis* search. We identified a total of 448 announcements for athlete endorsement contracts. One observation was eliminated due to unreliable announcement data, 197 observations were for non-public or foreign firms, 10 observations had incomplete stock return data, and nine observations were for termination of endorsement contracts or tainted athlete reputations. We then eliminated 10 observations associated with announcements of endorsements for megastars Michael Jordan and Tiger Woods. Finally, we searched to find other firm-related announcements that may contaminate the announcement information produced by the athlete endorsement contract. These contaminating events included announcements of earnings, sales, expansion plans, acquisitions, lawsuits, etc. After deleting the contaminated announcements, the final sample included 148 announcements to be used in the estimations. These 148 announcements represent 88 firms and 167 athletes. Some of the athletes had joint announcement dates for their endorsement contracts.

The market model estimations described in Eqs. 1 and 2 use stock returns from CRSP (i.e., the University of Chicago's Center for Research in Security Prices) and market returns based on the equally weighted CRSP index composed of stocks listed on the NYSE, AMEX and NASDAQ. A market model using market returns based on a value adjusted CRSP index was also estimated. Because the use of the valued adjusted index yielded results comparable to the use of the equally weighted index, outcomes are reported only for the equally weighted CRSP index.

The Announcement Effects: Estimation and Results

The average abnormal and cumulative returns surrounding the 148 announcement dates for conventional star athlete endorsements are presented in Table 1. The results suggest the possibility of information leakage or unforeseen information dissemination prior to the announcement of the athlete endorsement contracts since negative and significant abnormal returns, passing the standards of significance for both test statistics, are exhibited 2 days prior to the announcement date. In contrast, the

Table 1 Abnormal and cumulative abnormal returns for 148 signing announcements

Event Day	Abnormal Returns	SCS (z)	Rank Test (z)
−2	−0.25	−2.010[a]	−1.960[a]
−1	−0.17	−0.274	−0.570
0	0.09	0.470	0.670
+1	0.27	0.129	−1.000
+2	0.08	−0.922	−1.130
Event Window	Cumulative Abnormal Return (%)		
(−2,0)	−0.33	−0.919	−1.071
(−1,0)	−0.08	0.470	0.673
(0,0)	0.09	1.219	1.208
(0,+1)	0.36	0.440	−0.230
(−1,+1)	0.19	0.204	−0.515
(−2,+2)	0.03	−0.962	−1.779[a]

[a] Statistically significant at the 0.10 level for two-tail tests

average cumulative abnormal return is not significantly different from zero on the announcement date (0, 0) or for any window of time within 1 day before or 2 days after the announcement date. Whether one accepts the loss of firm value for day (−2) or the "fair-value" or trivial transaction indicated by the insignificance of the returns in various event windows, the results are unique to the endorsement literature. Mathur et al. (1997) found that Michael Jordan's return to the NBA increased abnormal returns by approximately 2%, and Farrell et al. (2000) found that a Tiger Woods signing increased abnormal returns by approximately 1%. Because Michael Jordan and Tiger Woods have been considered the premier athletes of their eras, it is not surprising that the average value of endorsements across all athletes is lower. Note that Agrawal and Kamakura (1995) find an abnormal return of 0.44% on the announcement date for an array of celebrity endorsement contracts. Our insignificant or even negative returns may result from the use of a more extended variety of athletes and endorsement contracts (n=148) or declining returns to contracts due to the increasing glut of athlete endorsements and/or multiple product endorsements (Shevak 1998; Tripp et al. 1994).

The Match-Up Hypothesis

Although the aggregate abnormal returns for this sample of athlete endorsement contracts appear to be insignificant or negative, marketing research has found that the effectiveness of endorsers varies by product. For the endorsement to be effective, the characteristics of the endorser must match up with the attributes of the product. Generally, match-up research has focused on an appropriate match between an endorser and a product based on consumer perception of endorser attractiveness, expertise, and trustworthiness (Ohanian 1991). In the context of the match-up hypothesis we test two hypotheses. The first relates to the notions of expertise and trustworthiness. Because athletes will be perceived as authorities knowledgeable about the tools of their trade, announcement effects of athlete endorsement contracts for sporting goods or products related to the sport in which the athlete competes will be greater than the announcement effects of athlete endorsements contracts for non-sporting goods. On a purely exploratory basis, we also hypothesize that there will be differences in the announcement effects of male and female athlete endorsers. These differences could be attributed to any of the match-up criteria: consumer perceived expertise, trustworthiness, or attractiveness.

Table 2 reports insignificant average abnormal returns for endorsements of sporting goods and non-sporting goods in a window extending from one day prior to one day after the announcement date. T tests using equal (t=0.15) and unequal (t=

Table 2 Abnormal returns for sporting and non-sporting goods signing announcements

Product	N	Event Window	Average Abnormal Return (%)	SCS (z)	Rank Test (z)
Sport	75	(−1,+1)	−0.42	−0.182	−1.123
Non-Sport	66	(−1,+1)	−0.31	−0.207	0.367

Sport and non-sport samples total 141. For seven endorsements, it is unclear whether the product being endorsed is sport or non-sport.

Table 3 Abnormal returns for male and female signing announcements

Gender	*N*	Event Window	Average Abnormal Return (%)	SCS (*z*)	Rank Test (*z*)
Male	123	(−1,+1)	0.38	0.303	0.094
Female	25	(−1,+1)	−0.72	−0.106	−1.389

0.15) variances as well as a Wilcoxon rank sum test (z=0.60) find no significant difference between the announcement effects of the two product types.

Although the average abnormal return for male athlete endorsement contracts is positive and the average abnormal return for female athlete endorsement contracts is negative as reported in Table 3, neither are significantly different from zero. Also, the t tests using equal (t=−0.86) and unequal (t=−0.84) variances as well as a Wilcoxon rank sum test (z=−1.26) find no significant difference in announcement effects due to the gender of the athlete.

The tests for the two match-up hypothesis are combined in Eq. 1, a regression analysis where male=1 if male; 0 if female and sport=1 if sporting good, 0 if non-sport good. Both the gender and product type results remain insignificant.

Equation 1: Match Up Hypothesis
(t-statistics in parentheses)

Abnormal Returns =	-0.009	+0.008 Male	-0.0090 Sport
	(-0.07)	(0.85)	(-.01)

The Importance of the Sport

Recently, Martin (1996) offers several theoretical perspectives that suggest that the sport in which an athlete participates is an important factor for producing a favorable consumer response to the athlete endorsement. First, he argues that consumers evaluate information about the athlete endorser and the athlete's sport in the context of assimilation and contrast effects. These effects describe the evaluation of new information as a comparison of the new information to an existing knowledge based. If an evaluation of the information portrayed by the athlete and the athlete's sport fits with the consumer's prior perception of the product, the endorsement would have a positive effect on sales. If an evaluation of the information portrayed by the athlete and the athlete's sport does not fit with prior consumer knowledge or is too much of a contrast with that knowledge based, the endorsement would have a negative effect on product promotion. Martin also extends the match-up hypothesis to include not just the impact of the perceived characteristics of the endorser but also the impact of the perceived characteristics of the sport. If there is little match up between the characteristics of the sport and the image of the product, the endorsement effect would be reduced. Finally, Martin uses schema theory to build on the first two theories. A "schema is the organized structure of association and expectations one has for a given domain, for example a product or sport" (Martin 1996, p. 29). In the context of endorsements, this theory would suggest that consumers would compare

Table 4 Abnormal returns for major and minor sports signing announcements

Sport	*N*	Event Window	Average Abnormal Return (%)	SCS (*z*)	Rank Test (*z*)
Major	71	(−1,+1)	−0.98	−0.942	−0.780
Minor	77	(−1,+1)	1.26	0.949	0.043

The sports with the largest television contracts were pro baseball, football, and men's basketball. These are defined as the major sports. Qualitative results are consistent when major sports was reduced to only baseball and football or extended to include additional major sports with the next most lucrative television contracts.

the schema associated with the product and the schema associated with the endorser, which would include the sport of the endorser. When the schema match, the endorsement will have a positive effect. When the schema conflict, the endorsement will have a negative effect. What is the ultimate announcement effect based on the sport of athlete? Martin provides little empirical content for his theory. We address the issue by examining the impact of sport by category determining if athletes from major sports have different endorsement effects than athletes from minor sports. Major sports consist of professional baseball, football, and basketball. We follow with an analysis of the impact of individual sports.

The average abnormal returns for the announcement of major sport endorser contracts are negative and the average abnormal returns for the announcement of minor sport endorser contracts are positive, but are both insignificant (see Table 4). These results are robust across alternative definitions of major and minor sports. A Wilcoxon rank sum test ($z=1.18$) finds no significant difference between the announcement effects of the two sport categories however both *t* tests using equal ($t=1.70$) and unequal ($t=1.70$) variances reject the null hypothesis that the mean abnormal returns for the two sport categories are equal. The *t* test implies that returns are larger for the endorsements by minor sport athletes.

We next examined the average abnormal returns for all sports with the list of represented sports including auto racing, baseball, basketball, biking, skating, football, golf, gymnastics, hockey, in-line skating, skiing, soccer, swimming, tennis, track and volleyball. Only golf had returns significantly different from zero, exhibiting over a 2% positive return (highlighted in Table 5). Indeed, the difference between returns to major and minor sports was driven exclusively by one sport, golf. *T* tests using equal (2.34) and unequal (2.28) variances and a Wilcoxon rank sum test ($z=1.89$) indicate that the returns to golf athlete endorsements are significantly greater than the returns to non-golf athlete endorsements.

Table 5 Abnormal returns for golfing athlete signing announcements

N	Event Window	Average Abnormal Return (%)	SCS (*z*)	Rank Test (*z*)
36	(−1,+1)	2.98	1.802[a]	1.293

[a] Statistically significant at the 0.10 level for two-tail tests

Summary and Conclusions

This study has presented an empirical investigation into the economic value of athlete endorsement contracts. By examining stock price changes, net of market fluctuations, the findings of the study provide evidence that firms create "fair-value" contracts for the average athlete endorsement. Unlike more traditional assessments of endorsement contracts valuation, the event study analysis measures only the value effects of a specific information stimulus—the announcement of the contract signing—and does so without regard to obvious and inherent biases of the involved parties.

Although there have been earlier event study analyses of athlete endorsements, the prior studies either focused on the effects of a single individual megastar or included a small sample of athletes in a larger group of celebrities. Each found significant positive abnormal returns indicating that the market thought that firm profits would increase as a result of the endorsement contract. This paper focuses exclusively on conventional star athlete endorsements and utilizes a wide variety of contracts and athletes in the sample of 148 uncontaminated contract announcements. Finding insignificant abnormal returns for this large sample of contracts suggests that the market finds such endorsements to provide a return to the firm just comparable to the cost of obtaining the endorsement.

The results also lend credibility to the notion that the effectiveness of athlete endorsers varies by sport. Golfer endorsements provided the only significant positive abnormal returns in the study. More research on the characteristics of golfers and consumers' perceptions of golfers is needed to address why these positive results are associated with this one sport.

Continued analysis relating abnormal market returns to characteristics of athlete endorsement contracts can also provide an empirical foundation for discussing the value of contract attributes previously limited to theoretical or experiential exercises. Perhaps niches of endorsement contracts other than those for megastars or golfers yield positive abnormal returns. The added insights of such studies would boost managers' abilities to increase the value of their firms through the selection of appropriate athlete endorsers.

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