

The Economic Value of Celebrity Endorsements

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What is the pay-off to enlisting celebrity endorsers? Although effects on stock returns are relatively well documented, little is known about any impact on sales—arguably a metric of more direct importance to advertising practitioners. This study of athlete endorsements finds there is a positive pay-off to a firm's decision to sign an endorser, and that endorsements are associated with increasing sales in an absolute sense *and* relative to competing brands. Furthermore, sales and stock returns jump noticeably with each major achievement by the athlete. However, whereas stock-return effects are relatively constant, sales effects exhibit decreasing returns over time. Implications for practitioners are outlined.

INTRODUCTION

What is the pay-off to enlisting celebrity endorsers? Although the use of endorsers has become a common practice in the world of advertising – by some estimates, 14% to 19% of advertisements that aired in the United States in recent years featured celebrities that endorsed products and brands, and the number was over twice as high in certain foreign markets (Creswell 2008) – extant research provides an incomplete picture of the effect of such endorsements. Most pressingly, while several studies give insight into how a firm's stock price tends to react when the firm signs a celebrity endorser (e.g., Agrawal and Kamakura 1995, Ding, Molchanov and Stork 2010) or when something happens to that endorser's reputation or status over the course of a celebrity's partnership with a brand (e.g., Mathur, Mathur and Rangan 1997; Louie, Kulik and Jacobson 2001), the impact of such events on *sales* are poorly understood (e.g., Creswell 2008). That is particularly unfortunate because sales movements are often more directly relevant to advertising and marketing practitioners than stock-price movements are, for instance when it comes to understanding what might be reasonable fees for endorsers, how compensation schemes can best be structured, whether a celebrity-endorsement strategy fits an advertising

campaign designed to help a brand gain market share over competing brands (or merely lift the category as a whole), and how distribution levels and other marketing-mix instruments are to be managed over the course of the endorsement.

This study examines the impact of celebrity endorsements on sales and, to facilitate comparisons with extant research, stock returns. The focus is on firms in a wide variety of consumer-goods categories (ranging from bottled water and chewing gum to cameras and cosmetics) that enlist the services of *professional athletes* as endorsers. Although any focus on a particular type of celebrity may hinder generalizations to the wider population of celebrity endorsers, athletes are excellent subjects to study for a number of reasons. First, sportspeople are among the most popular endorsers (meaning a relatively large sample of athlete endorsements can be assembled) and, unlike for many other kinds of celebrities, performance statistics for athletes are readily available and often fluctuate dramatically over relatively short periods of time (enabling a rich classification of the impact of endorsements and endorsers' achievements over the course of a partnership with a brand). Second, endorsements are a key source of income for sportspeople – in fact, the top three highest-paid American athletes in 2010, golfers

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Tiger Woods and Phil Mickelson and basketball player LeBron James reportedly made over seven times as much from endorsements (\$147 million) than from salaries and winnings (*Sports Illustrated* 2011) – and the stakes seem to go up every year: to secure the services of the most sought-after endorsers, firms have started offering athletes bonus payments for major victories (be it an Olympic Gold Medal for swimmer Michael Phelps or a Grand Slam win for tennis player Roger Federer), lifetime deals that extend beyond their active playing days, revenue-sharing deals, or equity stakes (e.g., Arango 2007; Futterman 2008; Rossingh 2010). Third, for advertising practitioners, the strategy of aligning one’s brand with an athlete is risky, as athletes can struggle with a loss of form, pick up an injury, or get entangled in scandals (as the developments regarding Tiger Woods illustrate), which makes the need to understand the likely rewards all the more pressing.

EXISTING EVIDENCE ON THE IMPACT OF CELEBRITY ENDORSEMENTS

The existing academic literature on the pay-off of celebrity endorsements can be divided into two streams that each make use of event-study methodology: some measure the (contemporaneous) effect of endorsement announcements on stock returns; others examine how changes in an endorser’s status, performance, or reputation affect stock returns over time (see Figure 1). This study does both—and investigates the impact on a metric still unexamined in this context: sales.

Research on Stock Returns

Agrawal and Kamakura (1995) examine 110 celebrity endorsements announced between 1980 and 1992. The authors find evidence of a positive impact: they report a (statistically significant) 0.44% abnormal return on the announcement

date, and a 0.54% abnormal return over a two-day event period. In a small-sample study involving only three brands that announced an endorsement deal with golfer Tiger Woods some time prior to 1996, Farrell et al. (2000) document positive one-day and two-day abnormal returns for two of the three brands. Fazel et al. (2008) assess 148 athlete endorsements announced between 1994 and 2000, but exclude observations for what they term “megastars” which they fear may cause an upward bias. They report no significant overall effect on stock prices on the announcement day or during other reasonable event windows. However, they do not reveal the magnitude of the presumed bias, making it difficult to interpret their results. Most recently, Ding et al. (2010) analyze a sample of 101 celebrity announcements made between 1996 and 2008; they also document statistically insignificant abnormal returns around the announcement dates. Findings on possible determinants of these effects are also mixed. For instance, testing the so-called “match-up” hypothesis, Ding et al. (2010) report weak support for the notion that endorsements representing a proper

match between endorsers and products (e.g., an athlete promoting a sports drink rather than an alcoholic beverage) are more effective, while Fazel et al. (2008) report no support for such a “congruence” effect.

The first of three studies to focus on events involving endorsers already aligned with firms, Mathur et al. (1997) focus on one athlete, Michael Jordan, and examine the impact of his anticipated return to professional basketball in 1995 on the market value of the five firms he endorsed at the time as well as on the stock returns of 9 competing firms. They find a nearly 2% increase in stock returns for the endorsed brands, corresponding with more than \$1 billion in market value, and significantly greater effects for endorsed firms than for non-endorsed firms. As the authors point out, however, because of the small sample of brands and because the focal athlete was the leading endorser at the time of the study, it remains unclear whether the findings generalize to a larger sample. A second study by Farrell et al. (2000), which again (as mentioned) only involves one athlete, Tiger Woods, examines stock-return

		Measure impact on...	
		Stock returns	Sales
Measure impact of...	Endorsement announcement	Agrawal and Kamakura (1995) Farrell et al. (2000) Fazel et al. (2008) Ding et al. (2011) This study	This study
	Subsequent changes in endorser’s reputation or status	Mathur et al. (1997) Farrell et al. (2000) Louie et al. (2001) This study	This study

Figure 1 A Typology of Existing Research on the Economic Value of Endorsements

Although any focus on a particular type of celebrity may hinder generalizations to the wider population of celebrity endorsers, athletes are excellent subjects to study for a number of reasons.

movements for three brands as a function of the golfer's appearance and performance at 46 tournaments from 1996 to 1998. While Farrell et al. (2000) provide little insight in the magnitude and significance of abnormal return movements during the tournaments, they do report that Woods' athletic performance is a significant driver of returns for only one brand, Nike, and not for American Express and Fortune Brands (which owns the golfing equipment brand Titleist). Again, however, the study's small sample size casts doubts upon the wider applicability of the findings. Finally, Louie et al. (2001) investigate what happens to a firm's stock price when its celebrity endorser becomes involved in an undesirable event. Their data cover 48 such events and 128 endorsed brands. The authors report a statistically significant negative impact of undesirable events – an effect that is greatest when the athlete is perceived to be carrying the blame.

(A Lack of) Research on Sales

While the studies on stock-return effects undoubtedly provide helpful information—in the end, managers should evaluate any strategy based on whether it creates value for shareholders—attention for how endorsements and endorser events affect sales is much needed. In practice, most advertising executives will make decisions regarding endorsements based on an anticipated effect on their brand's revenues. Practitioners will want

to weigh the investment they are planning to make in an endorser with the likely pay-off in additional revenues that the endorser will generate. They might want to understand how they can best reward endorsers, particularly when they are considering popular compensation models that are directly based on expected sales effects, such as additional fees when sales targets are reached, an outright share of sales, or bonus payments for victories. And practitioners might also want to evaluate whether enlisting an endorser can help them capture market share from competing brands—in other words, assess what kind of overall strategy best fits with celebrity endorsements—and how to allocate other marketing resources accordingly.

Finding answers to these questions based on the current research evidence on stock returns is challenging, also because those are collected at the firm—and not the brand—level (which is particularly problematic in the case of conglomerates that own many brands), and because information on fees paid to endorsers tends to be closely guarded (making it challenging to interpret stock-return effects as the result of the interplay between the revenues and costs associated with endorsements). Aside from anecdotal evidence of how sales react when brands sign endorsers or when those endorsers experience favorable or unfavorable events (e.g., Creswell 2008), answers are hard to come by.

Yet there are good reasons to theorize that endorsements might be effective in increasing sales, and that subsequent changes in the performance or reputation of an endorser could further move the needle. While extant research that relates celebrity endorsements to financial outcomes is largely free of any theoretical frameworks to explain the main effects, the literature on brand alliances, commonly defined as short-term or long-term associations of two or more individual brands, is highly relevant (Rao and Ruekert 1994; Washburn, Till and Priluck 2004). The literature provides two main reasons why sales can be expected to benefit from celebrity endorsements. First, signing a high-profile endorser can help reassure consumers about the true quality of a product (Rao and Ruekert 1994). The basic idea is that a brand is a signal of quality (Spence 1973): because branded products that falsely claim high quality stand to lose investments in reputation and future profits, a branded product's claim about unobservable quality will likely be true (Rao, Qu and Ruekert 1999). By extension, any event that improves an endorser's reputation – such as a notable achievement by an athlete – should provide consumers with further reassurance about the quality of the endorsed brand. Second, enlisting an endorser can help a firm enhance certain attributes, helping to differentiate its product from that of its competitors. For this reason, a “fit” or “match up” between brands in an alliance is seen as paramount to its effectiveness (e.g., Samu, Krishnan and Smith 1999, also see Gwinner and Eaton 1999). Because many firms seek to portray themselves as leaders in their markets, championships by athlete endorsers can be critical for this reason, too – it strengthens the athlete and partner brands' image as a “winner.” Relevant in this respect is research in psychology which demonstrates people's

need to “bask in reflected glory” by communicating one’s associations with successful others (e.g., Cialdini et al. 1976; Snyder, Lassegard and Ford 1986). Both factors are likely to affect brand consideration and choice (Simonin and Ruth 1998; Erdem and Swait 2004), and thereby sales.

MODELING APPROACH

The modeling approach consists of three stages: an assessment of the impact of endorsement announcements and endorser achievements on sales, the impact of both events on stock returns, and the association between both metrics and their respective drivers.

Stage 1. The Impact on Sales

The impact of endorsements on sales is modeled using an intervention model, for several reasons. First, an intervention model is ideally suited for a comparison of time-series observations before and after a certain “intervention” or “event” and a common methodology in the context of advertising effects (e.g., see Hanssens, Parsons and Schultz 2000). Second, this type of model can help facilitate comparisons with the results of a stock-returns event study, as the conceptualizations and outputs for each model are relatively similar. Third, the model enables a test, in a relatively parsimonious manner, of the extent to which sales effects are temporary or more permanent, which should be of prime interest to practitioners. Fourth, an intervention model allows for the control for general trends in sales, seasonality, and changes in the marketing mix such as price and advertising.

The Interventions. Two different types of interventions that may affect the endorsed firm’s brand-level sales are distinguished: (1) the firm entering into an athlete

endorsement and (2) the athlete recording a major victory. Time is indexed using t , and the week in which an intervention takes place is expressed as T . As is common with this methodology, two specifications for each type of intervention are tested: a “pulse” specification assumes a temporary effect at the intervention, while a “step” specification denotes a permanent jump to a new level after the intervention:

$$\text{Pulse variable: } X_t = \begin{cases} 1, & \text{if } t = T \\ 0, & \text{otherwise} \end{cases} \quad (1.1a)$$

$$\text{Step variable: } X_t = \begin{cases} 1, & \text{if } t \geq T \\ 0, & \text{otherwise} \end{cases} \quad (1.1b)$$

Modeling Sales. Because there is a substantial seasonal pattern in the data, sales in week t , $Sales_{it}$, for the endorsed brand is modeled using an ARIMAX model with autoregressive and moving average terms and with yearly seasonality:

$$\begin{aligned} & ((1 - \gamma_1 B) (1 - \gamma_{52} B^{52})) \\ & (Sales_{it} - \alpha_0 - \alpha_1 X_t - \alpha_2 Z_t) \\ & = (1 - \delta_1 B - \dots - 1 - \delta_q B^q) \delta_t \end{aligned} \quad (1.2)$$

for each endorsement i separately. Here, α_0 is the intercept, α_1 and α_2 are the parameters belonging to intervention vector X and predictor series Z , γ_1 is the non-seasonal first-order autoregressive parameter, γ_{52} is the seasonal autoregressive parameter (with “52” referring to the week number), δ_1 through δ_q are the moving average parameters of order 1 through q , δ_t is the general error term, and B is the backshift indicator.

The vector X includes the **intervention variables** X_i ; each model includes a variable X_0 , denoting the start of the partnership (i.e., the announcement of the athlete endorsement), as well as variables X_p denoting the athlete’s noteworthy performances p , indexed in chronological order by 1 through n . The vector Z covers four time-varying **control variables** that offer alternative explanations for **variations in**

sales for the endorsed brand: the average weekly intensity of price promotions for the brand ($Brand_Pricepromo$) and for the set of competing brands in the same category ($Rivals_Pricepromo$) as well as the level of weekly advertising for the brand ($Brand_Advertising$) and the competitors’ brands ($Rivals_Advertising$). The $Brand_Advertising$ variable is especially important because the announcement of an endorsement often directly precedes the launch of a new advertising campaign, which in turn could imply an increase in advertising expenditures. Such an increased advertising effort, rather than the start of the endorsement itself, could also explain a possible sales increase. The $Brand_Advertising$ variable helps control for such a scenario.

Estimation. Equation 1.2 is estimated for each endorsement i separately, using at least 53 weeks of sales data before its formation and at least 52 weeks of sales data after that point. The long pre-intervention time series enables the identification of the most suitable ARIMAX model from an analysis of the pre-intervention data, and then the estimation of the ARIMAX model with the intervention components jointly on the entire time series. For each series q is determined separately by minimizing the average absolute prediction error across the time series.

Because the intervention form is unknown ex ante, first, the fit of a pulse versus step model option is tested based on Akaike’s Information Criterion (AIC) and Schwarz’s Bayesian Criterion (SBC) (McCleary and Hay 1980; Rasmussen et al. 2001). This starts with a comparison of a model in which the **endorsement announcements** (X_0) are specified as a pulse variable (equation 1.1a) to one in which those announcements are specified as a step variable (equation 1.1b). The **step** function was the best-fitting

The Event and Event Window. Two event studies are performed. In the first, the event is defined as the endorsement announcement. In the second, the event is defined as the endorser having a noteworthy performance p , again indexed by 1 through n . In both studies the event day is defined as the day on which the event took place (unless the event occurred on a Saturday or Sunday or after trading hours; then the event day is defined as the first trading day following the event). Returns are indexed in event time using d , and $d = D_0$ to $d = D_1$ is defined as the event window.

Normal and Abnormal Returns. The impact of each type of event on a firm's valuation is assessed by estimating abnormal returns for the firm's security. For each endorsement i and time d :

$$AR_{id} = R_{id} - E(R_{id}) \quad (2.1)$$

where AR_{id} are the abnormal returns, R_{id} the actual returns, and $E(R_{id})$ the normal returns. Normal returns are calculated using the so-called market model, which accounts for variability in the overall market returns (Campbell, Lo and MacKinlay 1997):

$$R_{id} = \beta_{0i} + \beta_{1i}R_{md} + \xi_{id} \quad (2.2)$$

With $E(\xi_{id}) = 0$, $Var[\xi_{id}] = \sigma_{AR_i}^2$

where R_{pd} is the return for the market portfolio m for security i over period d , β_{0i} and β_{1i} are the intercept and slope parameter of the market model, and ξ_{id} denotes the error term. The market portfolio is captured by the index on which the firm's security is listed.

Estimation. Normal returns are estimated using a period prior to the event, the estimation window, defined as $d = D_{-2}$ to $d = D_{-1}$. The length of the estimation window ranges from 50 to 600 trading days in previous studies (e.g., Campbell et al.

1997). A length of 240 days, with $d = [-250, -10]$ is chosen in the event study for the endorsement announcements. Given the relative frequency of major career events for top athletes, a shorter estimation window of 60 days (with $d = [-70, -10]$), is chosen in the event study of endorser achievements. The significance of ARs is tested using a t -statistic generated by the average AR divided by its standard deviation (Brown and Warner 1985).

Stage 3. The Effects and Their Drivers

How the effects on sales and stock returns relate to each other and evolve with each subsequent endorser achievement is examined next, while controlling for a set of possible drivers. Here, two observations underlie the choice of modeling approach. First, the same factors that drive effects on the endorsed brand's sales likely also determine those on the endorsed firm's valuation – it is not possible to *a priori* point to variables that would uniquely identify the effect on one outcome only. This follows from the idea that, in theory, advertising strategies affect the shape of the probability distribution of future sales income, and thus the firm's working capital requirements, and thus stock-price responses (e.g., Rao and Bharadwaj 2008). Second, effects for the same endorsements (i.e. those involving the same partners) likely are correlated – for instance, even if the effects of an endorser's performances diminish over time, those for more powerful alliances between firms and athletes will probably have higher levels overall than those for less successful partnerships.

Assessing the drivers of the estimated effects of endorsement announcements on brand sales (\widehat{X}_{0i}) and firm valuation (\widehat{AR}_{0i}) is rather straightforward. Both are modeled in a system of equations with identical regressors and correlated errors:

$$\begin{aligned} \widehat{X}_{0i} &= \phi_{0,1} + \phi_{1,1}FIRM_i + \phi_{2,1}BRAND_i \\ &+ \phi_{3,1}ENDORSER_i \\ &+ \phi_{4,1}ENDORSEMENT_i + \epsilon_{i1} \\ \widehat{AR}_{0i} &= \phi_{0,2} + \phi_{1,2}FIRM_i + \phi_{2,2}BRAND_i \\ &+ \phi_{3,2}ENDORSER_i \\ &+ \phi_{4,2}ENDORSEMENT_i + \epsilon_{i2} \quad (3.1) \end{aligned}$$

where $FIRM$, $BRAND$, $ENDORSER$, and $ENDORSEMENT$ denote vectors of covariates, and ϵ_i captures the error term.

The variables in the equations cover factors that, based on the literature on athlete endorsements and anecdotal industry evidence, can be expected to influence the effectiveness of such partnerships. The $FIRM$ is described in terms of its scale as measured by its market capitalization ($Firm_Scale$) as its resources and channel power could help it better monetize an endorsement, and count the number of endorsements which a firm holds at a particular time ($Firm_Endorsements$), as there may be diminishing returns in this respect (e.g., Tripp, Jensen and Carlson 1994). Practitioners seeking athlete endorsements appear to bet heavily on – and pay a premium for – the very top-ranked athletes in particular sports, the agencies behind some of the best endorsers go to great lengths to craft their clients' images as "winners" (e.g., Elberse and Golod 2007), and it is usually the leading firms that are able to sign superstar athletes. The $BRAND$ and $ENDORSER$ vectors therefore cover measures of the equity of both brands, $Brand_Equity$ and $Endorser_Equity$, respectively, as well as their interaction term, $Brand_Equity * Endorser_Equity$. The vector $ENDORSER$ further includes a dummy denoting whether the athlete competes in a sport with a large fan base ($Endorser_Base$), as the popularity of a sport affects the brand ally's reach (Ohanian 1991), and a measure reflecting the number of years an athlete has been a professional athlete in

a given week (*Endorser_Lifecycle*), to control for any career-lifecycle effects (Elberse and Golod 2007). Finally, two variables are added that describe the *ENDORSEMENT*: a dummy indicating whether the deal extends beyond the domestic market (*Endorsement_Global*) because stock prices may respond to effects in international markets, and one reflecting whether the focal product is congruent with the athlete's activities (*Endorsement_Fit*, as in the "match up" hypothesis, e.g., Erdogan, Baker and Tagg 2001; Till and Busler 2000).

Examining the association and determinants of the effects of endorser achievements requires a more sophisticated model. In light of the likely correlation across dependent variables and across events for the same partnership over time, a multivariate linear mixed model is estimated:

$$\begin{aligned} V_{hip} = & \varphi_{0h} + \varphi_{1h} \text{PERFORMANCE}_{ip} \\ & + \varphi_{2h} \text{BRAND}_{ip} + \varphi_{3h} \text{ENDORSER}_{ip} \\ & + \varphi_{4h} \text{FIRM}_{ip} + \varphi_{5h} \text{ENDORSEMENT}_{ip} \\ & + \nu_{hi} + \omega_{hip} \end{aligned} \quad (3.2)$$

where V_{hip} denotes either the estimated effects on the focal brand's sales or the corresponding firm's valuation. The first dependent variable, denoted by $h = 1$, is the difference between the intervention variables estimated in equation 1.2, denoted as $\hat{X}_{i(\Delta 1)} = \hat{X}_{i0} - \hat{X}_{i1}$ through $\hat{X}_{i(\Delta n)} = \hat{X}_{in} - \hat{X}_{i(n-1)}$. (The difference between estimated variables is chosen because that, given how the dummies are specified, reflects the increase in sales due to the endorser's performance). The second dependent variable, denoted by $h = 2$, is $\hat{A}R_{ip}$, as estimated in equation 2.1 and 2.2. Each dependent variable h is specified at the level of an endorsement i and at the level of an athletic performance p , ranging from 1 to n . For each dependent variable, the parameter φ_{0h} expresses the intercept, φ_{1h} through φ_{5h} the coefficients for the different (vectors of) variables, ν_{hi} the random part of the intercept in

endorsement i , and ω_{hip} the residual error. The multivariate specification allows the researcher to draw conclusions about the correlations between the dependent variables, in particular the extent to which these correlations depend on the individual achievements for endorsers (the "individual level") or the endorsements themselves (the "group" level), and enables more powerful tests of the specific effects for single dependent variables (Snijders and Bosker 1999).

The vector *PERFORMANCE* contains two variables: *Performance_Order*, which reflects the chronological order in which the performances 1 through n associated with each endorsement i take place, and *Performance_Major*, a dummy which captures whether the performance was a major event. *FIRM*, *BRAND*, *ENDORSER*, and *ENDORSEMENT* are the same as in the equation 3.1.

Estimation. The model in equation 3.1 is estimated using ordinary least squares (Greene 2000). Heteroskedasticity-robust standard errors are generated (MacKinnon and White 1985). For the multilevel model in equation 3.2, the MLwiN software package is used (Snijders and Bosker 1999); the model is estimated using residual maximum likelihood (REML).

DATA

Sample and Dependent Variables

An extensive media search was performed to compile a database of past and present **endorsements** involving athlete endorsers and publicly traded firms. The websites of leading sport management agencies such as CAA, IMG, Octagon, and Wasserman were searched, online newspapers and magazines were checked, lists of the highest-paid athletes such as those published annually by *Sports Illustrated* and *Forbes* were examined, and Fortune 500 firms' press releases were searched.

The exact announcement date of each endorsement deal was determined using *Dow Jones Factiva*, and the date confirmed using *Sports Business Daily's* news archive. (In the few instances where the announcement date could not reliably be determined, the observation was omitted.) In total, the study covers 95 firms responsible for the focal brands, 178 athlete endorsers, and 341 endorsements formed between January 1990 and March 2008 (see Table 1 for descriptive statistics).

Thomson Financial DataStream was used to compile **daily stock prices** for the sample of firms and for their daily market index. To avoid potential biases, any pair of events involving one athlete or one firm that overlapped in the period from the start of their estimation window to the end of the longest event window was excluded. This led to the stated total of 341 brand endorsements.

To construct a measure of sales for the endorsed brands, dollar sales data were obtained from Nielsen's HomeScan panel, which covers 120,000 households scanning all their in-home and out-of-home purchases. The data comprise **weekly sales** in the U.S. from January 2004 to October 2009 for 35 consumer product categories, including bottled water, cameras, chewing gum, cosmetics, fragrance, shaving needs, soft drinks, and phones. Sales are specified at the brand and product level, allowing an examination of sales for the endorsed brand as well as all competing brands in the same category. Since not all brands in the study fall into the product categories and the period for which sales data were available, the "brand sales" sample covers a subset of 51 endorsements and a combined 14,280 weekly observations for those partnerships.

For all athletes in the study, data were compiled on major **achievements** across sports such as baseball, basketball, boxing, car racing, football, golf, swimming,

TABLE 1
Descriptive Statistics

Variable	N	Mean	Median	SD	Min	Max	Percent
“Brand Sales” Sample (N = 51 Endorsements)							
By Week							
<i>Brand_Sales</i> (\$000)	14,280	4,903	403	10,837	0	78,500	
<i>Brand_Advertising</i> (\$000)	14,280	1,294	254	1,809	0	9,966	
<i>Brand_PricePromo</i>	14,280	0.272	0.227	0.188	0.000	0.949	
<i>Rivals_Sales</i> (\$000)	14,280	31,124	19,090	49,091	129	364,084	
<i>Rivals_Advertising</i> (\$000)	14,280	5,574	5,544	3,130	125	20,586	
<i>Rivals_PricePromo</i>	14,280	0.286	0.272	0.137	0.007	0.834	
By Endorsement							
<i>Brand_Equity</i>	51	0.16	0.02	0.25	0	0.75	
<i>Endorser_LifeCycle</i>	51	5.95	6.00	5.30	0	18	
<i>Endorser_Equity</i>	51	6.86	5.00	8.59	1	49	
<i>Firm_Endorsements</i>	51	5.02	8.00	4.77	0	34	
<i>Firm_Scale</i>	51	5.09	3.00	4.00	0.53	30.15	
Dummy Variables							
<i>Endorser_Base</i>	51						82
<i>Endorsement_Fit</i>	51						46
<i>Endorsement_Global</i>	51						37
“Firm Valuation” Sample (N = 341 Endorsements)							
By Endorsement							
<i>Brand_Equity</i>	—	—	—	—	—	—	
<i>Endorser_LifeCycle</i>	341	7.23	6.00	6.99	0	49	
<i>Endorser_Equity</i>	341	9.31	8.00	7.58	1	61	
<i>Firm_Endorsements</i>	341	6.45	2.00	8.63	0	36	
<i>Firm_Scale</i>	341	2.99	1.94	9.91	0.89	30.79	
Dummy Variables							
<i>Endorser_Base</i>	341						79
<i>Endorsement_Fit</i>	341						38
<i>Endorsement_Global</i>	341						20

Note: Table 1 reports descriptive statistics for the key variables used in the analysis, by week and by endorsement.

soccer, and tennis. This was done by first selecting the highest-profile events in each of these sports (e.g., Grand Slam tournaments in tennis and the play-off finals in basketball, coded as “major” events) and where available also second-tier events (e.g., non-Grand Slam ATP tournaments, coded as “minor” events), and then by assessing whether the athletes in the study’s sample performed in those events over the course of their endorsement contract and if so, by selecting those instances in which one of the athletes (or the teams to which they belonged) prevailed. The respective sports leagues and various other publicly available sources were used to do so. This procedure yielded a total of 596 performances; for 130 (42 major and 88 minor championships) both sales and stock return information are available.

Other Variables

Further, variables describing the endorsed firm, the endorsed brand, the endorser, and the endorsement were constructed. Nielsen HomeScan data were used to compute the weekly intensity of price promotions for each of the focal brands (*Brand_PricePromo*) and for their set of in-category competitors (*Rivals_PricePromo*), by calculating the share of sales sold on promotion. Nielsen also provided monthly advertising expenditures for each of the brands in the 35 product categories for which sales data are available; the expenditures were allocated evenly across the weeks in each month to create a measure of weekly advertising for the focal brand (*Brand_Advertising*) and again for the set of competing brands in that brand’s category (*Rivals_Advertising*). The same data source was used to compile data on the endorsed brand’s equity at the time an endorsement was announced: the brand’s equity (*Brand_Equity*) is expressed in terms of its share of dollar sales in its product category. The endorser’s brand

strength (*Endorser_Equity*) was computed by allocating a performance ranking using listings such as the ATP ranking for tennis, the FIFA Player of the Year voting results for soccer, and (position-specific) player statistics compiled by the NFL. The variable reflects an individual player’s relative performance, expressed as a ranking, in the season prior to the date on which the player entered an endorsement contract. The ranking is inversed so higher values indicate a more favorable record. Using various public sources, a dummy was constructed that has a value of one for the five major sports (basketball, baseball, football, golf, and tennis) represented in the sample (*Brand_Base*) and a measure reflecting the number of years an athlete had been a professional athlete at the time of the endorsement announcement or endorser achievement (*Brand_Lifecycle*). Drawing on Thomson Financial DataStream, COMPUSTAT, and press releases, a firm’s market value (*Firm_Scale*, in tens of billions of dollars) was calculated by multiplying the number of outstanding shares as listed in the firm’s last annual report with the firm’s stock price on the last day of the estimation window. Press releases and other public sources were employed to count the number of endorsement deals a firm holds at each point in time (*Firm_Endorsements*), and to examine whether the endorsement deal extended beyond the domestic market (*Endorsement_Global*). Finally, coders were asked to assess whether the product advertised was congruent with the athlete’s sports activities (*Endorsement_Fit*, with, say, a sports-apparel or sports-equipment deal being coded as a “1” while a fragrance deal would receive a score of “0”).

FINDINGS

1. Impact on the Brand’s Sales

Validating the modeling specification, the first-order and seasonal autoregressive

terms are statistically significant in the ARIMAX models estimated for each of the 51 endorsements’ time series, and the first-order moving-average term is significant in 49 of those (see Table 2). The parameter estimates belonging to *Brand_Advertising*, *Brand_PricePromo*, *Rivals_Advertising*, and *Rivals_PricePromo* have average *t*-statistic values that make them significant as well (albeit *Rivals_Advertising* only at a 10% level), suggesting these variables are relevant control factors.

Do Endorsements Drive Up Sales? The estimates for $\alpha_{1,0}$, the parameter belonging to X_0 (the variable denoting the start of the endorsement), show that a firm’s decision to hire an endorser generally has a positive impact on the firm’s focal brand’s sales (see Model I in Table 2). The estimate’s average value, 0.20, indicates that weekly sales increase with just over \$200,000 over the course of the duration of the endorsement (note that sales are measured in millions of dollars) as compared with what was to be expected based on historical sales, even after controlling for any changes in advertising and pricing strategies. That corresponds with over \$10 million in added sales annually. The increase reflects around 4% of the average weekly sales for the brands in the sample. Not reported in Table 2 is that the estimate $\alpha_{1,0}$ is positive and significant at the 1% level for 43 of the 51 (i.e., 84%) endorsements in the sample, negative and significant in three cases, and statistically indistinguishable from zero for five partnerships. Overall, though, the evidence undeniably points to a positive impact of athlete endorsements on the endorsed brand’s sales.

The results further reveal that, on average, competitors’ sales do *not* noticeably respond to the endorsement, judging by the average estimate for $\alpha_{1,0}$ (see the bottom half of Table 2). Of the 51

TABLE 2
Intervention Modeling Results: Predictors of Brand Sales

Average Results for ARIMAX Models of Weekly Sales (in \$M)					
Focal Brand					
Coeff.	Variable	Model I		Model II	
		Average Estimate	Average t-Statistic	Average Estimate	Average t-Statistic
α_0	Mean	4.129	3.72***	4.047	6.03***
δ_1	Moving Average	0.204	3.04***	0.131	3.05***
γ_1	First-order Autoregressive	0.815	27.23***	0.734	22.96***
γ_{52}	Seasonal Autoregressive	0.433	8.56***	0.436	8.82***
$\alpha_{1,0}$	X_0	0.201	4.25***	0.135	5.87***
$\alpha_{1,1}$	X_1	—	—	0.214	7.91***
$\alpha_{1,2}$	X_2	—	—	0.243	5.79***
$\alpha_{1,3}$	X_3	—	—	0.288	3.44***
$\alpha_{1,4}$	X_4	—	—	0.305	2.50**
$\alpha_{1,5}$	X_{5+}	—	—	0.363	3.87***
$\alpha_{2,1}$	Brand_Advertising	0.003	8.59***	0.003	8.02***
$\alpha_{2,2}$	Brand_PricePromo	0.746	7.02***	0.781	6.99***
$\alpha_{2,3}$	Rivals_Advertising	-0.000	-1.98**	-0.000	-1.63*
$\alpha_{2,4}$	Rivals_PricePromo	-0.014	-3.23***	-0.012	-3.98***
Focal Brand's In-Category Rivals					
Coeff.	Variable	Model I		Model II	
		Average Estimate	Average t-Statistic	Average Estimate	Average t-Statistic
α_0	Mean	13.469	7.17***	16.226	8.06***
δ_1	Moving Average	0.469	8.30***	0.422	6.91***
γ_1	First-order Autoregressive	0.892	57.20***	0.824	49.65***
γ_{52}	Seasonal Autoregressive	0.656	16.06***	0.685	17.23***
$\alpha_{1,0}$	X_0	0.085	0.21	0.068	0.11
$\alpha_{1,1}$	X_1	—	—	0.026	0.30
$\alpha_{1,2}$	X_2	—	—	0.293	0.29
$\alpha_{1,3}$	X_3	—	—	0.425	0.43
$\alpha_{1,4}$	X_4	—	—	0.284	0.28
$\alpha_{1,5}$	X_{5+}	—	—	-0.182	-0.18
$\alpha_{2,1}$	Brand_Advertising	0.000	2.39***	0.000	2.25***
$\alpha_{2,2}$	Brand_Pricepromo	0.645	1.27	0.511	0.94
$\alpha_{2,3}$	Rivals_Advertising	0.001	2.09**	0.002	2.13**
$\alpha_{2,4}$	Rivals_Pricepromo	0.027	5.13***	0.019	6.40***

Note: Table 2 displays summary statistics for the intervention models that were estimated using time series for each of the 51 endorsements separately; 14,280 weekly observations were used in total. The X_1 through X_{5+} variables cover a total of 130 athlete-endorser performances. In light of the limited number of endorsements with more than 5 notable athletic performances, the reporting is limited to five such variables, X_1 through X_{5+} , with the latter covering all fifth and higher performances. The top half of the table reflects models for the focal brand's sales; the bottom half those for rivals' sales. Sales are expressed in millions of dollars. Significance levels are given by * $p = 0.10$; ** $p = 0.05$; and *** $p = 0.01$.

intervention models estimated for rivals' sales, only six implied that endorsements triggered a primary-demand effect in which both the focal brand and rival brands' sales increase (see Hanssens et al. 2000 for a taxonomy of marketing effects). For the lion's share (45) of time series analyzed for competing brands, the intervention variable is statistically insignificant. Put differently, the results show that an endorsement strategy generally leads to increased sales for the focal brands, both in absolute terms and relative to their competitors.

Do Endorser Achievements Increase Sales? What happens when the athlete endorser adds to his or her reputation by capturing a championship? The average estimates for the parameters $\alpha_{1,1}$ through $\alpha_{1,5}$, which belong to the intervention variables X_1 through X_{5+} (the variables reflecting the endorser achievements), are statistically significant and positive, ranging from 0.21 (for X_1) to 0.36 (for X_{5+}) (see Model II in Table 2). Given how the step variables were constructed, the difference between the average values for the coefficients belonging to X_0 and X_1 (0.14 and 0.21) can be interpreted as being reflective of the sales increase due to the first performance. That is, when the athlete captures a championship during the endorsement, weekly sales are expected to increase with an additional (\$210,000-\$140,000 =) \$70,000 per week. Because the average estimate for the coefficient belonging to X_2 is 0.24, the second is expected to generate another \$30,000, and so on. According to the average estimates, sales are expected to increase with each additional achievement. At first glance the values do not show a strong "decreasing-returns" pattern – for instance, the jump from X_2 to X_3 is greater than the jump from X_1 to X_2 – but because the intervention variables represent a varying mix of major

and minor events, it is difficult to come to definitive conclusions based on just the listing of estimates. Even athlete endorsers that do not capture any championships create significant value, however: the parameter estimate belonging to X_0 is 0.14, which means that (holding all else equal) weekly sales in the period after an endorsement partnership is started are on average \$140,000 higher than historical sales would predict. This could for instance be due to the athletes in these partnerships benefiting from a "winning" or "high-quality" reputation built up in the period prior to entering into the endorsement, or to other favorable attributes they may represent. These effects and their drivers are examined in greater detail in the third modeling stage.

Lastly, again, rival brands do not appear to benefit from any sales uptakes (see the bottom half of Table 2). Overall, no significant effects can be found.

2. Impact on the Firm's Stock Returns

The event studies reveal the impact of endorsement announcements and endorser achievements on a firm's stock-market valuation (see Table 3).

Do Endorsements Drive Up Stock Returns? The finding jumping out here is that, across the 341 endorsements in the sample, an endorsement is associated with an average abnormal return (AR) of 0.23% on the announcement day, a result that is statistically significant at the 1% level ($p = 0.01$). Thus, entering into an endorsement increases a firm's valuation. The ARs in the days surrounding the event day are statistically indistinguishable from zero, and the cumulative abnormal returns (CARs) calculated over various windows beyond the event day itself are not statistically significant. This implies that the event is quickly incorporated into the stock price, and there is no prolonged effect.

Do Endorser Achievements Increase Stock Returns? When it comes to the impact of endorsers' athletic achievements, such performances significantly and positively impact the endorsed firms' stock prices (see the bottom half of Table 3). The 596 events are associated with an average AR of 0.08% on the event day and a CAR of 0.14% on the event and subsequent day; the latter is significant at the 1% level. Major events (i.e., first-tier championships) alone are associated with a CAR of 0.16%, which again is significant at the 1% level. Minor events do not trigger significant stock-price changes. An examination of the distribution of ARs again shows it is skewed to the right. Evidence of a prolonged stock price effect also does not emerge.

The pattern in the ARs, and specifically the finding that the ARs leading up to event day are statistically insignificant, may point to the importance of winning championships – not, say, coming in second or reaching the semi-finals in a tournament. A sudden shock at the time of a victory is observed – not a steady climb of those prices as the endorser advances into a tournament and gets more press attention, which one would expect to see if a higher level of publicity or exposure for an endorser alone causes a firm's stock returns to increase.

Because the two-day CAR for endorser performances is higher than the one-day AR and significant at a 1% level, this estimate is used as the corresponding dependent variable (denoted as \hat{AR}_1 through \hat{AR}_n) in the next modeling stage.

3. The Association, Temporal Pattern, and Drivers of Sales and Stock-Return Effects

Lastly, the study provides insight into the association, temporal pattern, and drivers of sales and stock-price effects (see Table 4).

TABLE 3
Event Study Results: Returns for Endorsements and Endorser Performances

Endorsements Announcements (N = 341)						
Day	Average Abnormal Return (%)	t-statistic	Sig.	Cumulative Abnormal Return (%)		
-5	-0.1661	-1.5927	—	-0.1661		
-4	0.0470	0.4837	—	-0.1192		
-3	0.0819	0.8695	—	-0.0372		
-2	-0.1180	-1.2056	—	-0.1553		
-1	-0.1765	-1.7490	—	-0.3318		
0	0.2317	2.4493	***	-0.1001		
1	-0.0807	-0.8970	—	-0.1808		
2	0.0197	0.2438	—	-0.1611		
3	-0.0428	-0.4590	—	-0.2039		
4	0.0237	0.2309	—	-0.1801		
5	0.0440	0.5141	—	-0.1362		
Event Window	Average Cumulative Abnormal Return (%)	t-statistic	Sig.			
-1 to +1	-0.0255	-0.1727	—			
-1 to 0	0.0552	0.4348	—			
0 to +1	0.1510	1.1741	—			
Endorser Performances (N = 596)						
Event Window	Average Cumulative Abnormal Return (%)	t-statistic	Sig.			
0	0.0790	1.7440	*			
0 to +1	0.1437	2.4149	**			
-1 to +1	0.1408	1.1303	—			
		First-Tier Events Only (N = 223)			Second-Tier Events Only (N = 373)	
0	0.0920	1.8701	**	0.0205	0.7642	—
0 to +1	0.1568	2.8765	***	0.0463	0.8916	—
-1 to +1	0.1217	0.7602	—	0.0755	1.2039	—

Note: Table 3 displays the average and cumulative abnormal returns for selected event windows for the sample of 341 endorsement announcements (top) and 596 athlete-endorser performances (bottom). Further tests with other event windows did not yield other significant average cumulative abnormal returns. Significance levels are given by *p = 0.10; **p = 0.05; and ***p = 0.01.

Are Sales Effects Associated with Stock-Return Effects? Do the abnormal returns on the day an endorsement is announced foreshadow how revenues will respond in the ensuing weeks and months? The association is positive, but weaker than might have been expected. The correlation coefficient between the estimated intervention dummies (\hat{X}_0) and the estimated abnormal returns (\hat{AR}_0) at the time the endorsement is started is only 0.22, significant at the 10% level ($p = 0.10$). An examination of the plotted values confirms the association is relatively weak, with average absolute prediction errors being well over 100%. The findings highlight the need for practitioners to track both metrics if they want to gain a full understanding of how endorsements may affect financial outcomes in the short and long run.

Three statistics regarding the strength of the association between the endorser-performance intervention dummies ($\hat{X}_{\Delta t}$ through $\hat{X}_{\Delta n}$) and abnormal returns (\hat{AR}_1 through \hat{AR}_n) are noteworthy. First, the reported correlation coefficient between both variables is 0.18, which again is significant at a 5% level but relatively low. The residual correlation coefficient at the endorsement level and the endorser-performance level are 0.33 and 0.15, respectively. The random effects for sales and stock returns thus are stronger correlated at the level of the endorsements than at the level of the events involving athletes in those endorsements. This suggests that, even after controlling for the *FIRM*, *BRAND*, *ENDORSER*, and *ENDORSEMENT* variables, there are common unobserved forces at the “group” level that determine sales and stock-return effects – hence the need for a linear mixed modeling approach.

Do Endorsers’ Performances Have Decreasing Returns? The variable *Performance_Order* helps understand how the positive

TABLE 4

Regression and Multivariate Linear Mixed Modeling Results: The Effects' Drivers

		Brand's Sales Impact		Firm's Abnormal Stock Return	
Variable		Est.	SE	Est.	SE
Dependent Variable =		X_0		AR_0	
ϕ_0	Intercept	0.039	0.027	0.076	0.021***
ϕ_1	Brand_Equity	0.247	0.125**	0.474	0.062***
ϕ_{2a}	Endorser_Equity	0.006	0.001***	0.008	0.003**
ϕ_{2b}	Brand_Equity * Endorser_Equity	0.056	0.018***	0.023	0.009**
ϕ_{2c}	Endorser_Base	0.039	0.179	0.260	0.123**
ϕ_{2d}	Endorser_Lifecycle	0.007	0.002***	0.013	0.017
ϕ_{3a}	Firm_Endorsements	-0.013	0.011	0.015	0.009*
ϕ_{3b}	Firm_Scale	0.001	0.001	0.001	0.000**
ϕ_{4a}	Endorsement_Fit	0.173	0.067**	0.128	0.268
ϕ_{4b}	Endorsement_Global	0.204	0.185	0.371	0.112***
Adjusted R^2		0.19		0.11	
Correlation Coefficient		0.22*			
Dependent Variable =		X_{1A} through X_{1N}		AR_1 through AR_n	
Fixed Effects					
ϕ_0	Intercept	0.007	0.035	0.013	0.005**
ϕ_{1a}	Performance_Order	-0.054	0.020***	0.027	0.039
ϕ_{1b}	Performance_Major	0.045	0.014***	0.291	0.077***
ϕ_2	Brand_Equity	0.035	0.017**	0.385	0.115***
ϕ_{3a}	Endorser_Equity	0.020	0.007***	0.002	0.001**
ϕ_{3b}	Brand_Equity * Endorser_Equity	0.207	0.078***	0.095	0.156
ϕ_{3c}	Endorser_Base	0.197	0.107*	0.089	0.037**
ϕ_{3d}	Endorser_Lifecycle	0.013	0.024	-0.031	0.048
ϕ_{4a}	Firm_Endorsements	0.007	0.015	0.005	0.029
ϕ_{4b}	Firm_Scale	0.000	0.000	0.001	0.000***
ϕ_{5a}	Endorsement_Fit	0.162	0.081**	0.061	0.037*
ϕ_{5b}	Endorsement_Global	0.019	0.195	0.145	0.019***
Random Effects					
Between-endorsement variance (v_{ht})		0.351	0.132	0.258	0.112
Within-endorsement variance (ω_{bip})		1.434	0.102	1.359	0.049
Correlation coefficient					
At level of the endorsement		0.33**			
At level of the performance		0.15**			
For observed variables		0.18**			

Note: Table 4 presents the results of the system of equations expressed in equation 3.1 (estimated by OLS, with heteroskedasticity-robust standard errors) and the multivariate linear mixed model reflected in equation 3.2 (estimated by REML). Results for the former are displayed in the top half; data for 51 endorsements were used in the estimation. Results for the latter are in the bottom half; data for 130 endorser performances were used in the estimation. Significance levels are given by * $p = 0.10$; ** $p = 0.05$; and *** $p = 0.01$.

effects of performances by a firm’s endorser evolve over time. The parameter ϕ_1 in the sales equation has an estimate of -0.05 , meaning that each subsequent “winning” performance by an athlete will result in \$50,000 less of a rise in weekly sales than the previous performance by that same athlete under the same partnership with a firm (controlling for, among other things, the profile of such events through the variable *Performance_Major*). The relevant parameter in the stock-returns equation, however, has an estimate that is not significantly different from zero. In other words, the response of investors does not display such decreasing returns. One explanation could be that traders see these performances as a credible signal not just of the endorser’s current but also of its future value – their thinking might be that if Maria Sharapova wins a Grand Slam,

she might be capable of winning another, and even if the immediate benefits might not warrant a certain level of returns, they are betting on possible future sales and profits. But it could also be that traders are simply overestimating the significance of the impact of subsequent performances on earnings during the endorsement.

All in all, the effects of endorser achievements decrease with each subsequent performance for brand sales – but not for stock returns. These patterns are visible in the data if there is a control for the nature of the performance, through *Performance_Major* (see Figure 3).

What Are Drivers of Sales and Stock-Return Effects? When it comes to other drivers of both effects, the variables measuring the equity of the focal brand and the reputation of the endorser are significant

across equations, with stronger brands generally yielding greater benefits (see Table 4). Focusing first on the effects of the endorsement announcements (\hat{X}_0 and \hat{AR}_0), the parameter estimates belonging to *Brand_Equity* in the sales and stock-returns equations are 0.25 and 0.47, respectively. This means that for each 10% higher share the brands have in their category, endorsements will yield \$25,000 higher weekly sales, and 0.05% higher abnormal stock returns. The parameters belonging to *Endorser_Equity* are significant and positive as well, indicating that the stronger the athlete’s reputation is, the more positive the effects of endorsements on sales and stock returns are. According to the estimates for *Endorser_Equity*, 0.006 and 0.008, respectively, the difference between entering an endorsement with a top-ranked athlete versus one that just makes it into the top 10 is \$60,000 in weekly sales and 0.08% in stock returns. Thus, athletes with a stronger reputation as a “winner” are more effective endorsers. Interestingly, the advantages are especially strong for partnerships that involve top consumer-goods brands and top athletes. The positive estimates for the interaction term *Brand_Equity * Endorser_Equity*, are 0.06 and 0.02 in the sales and stock-returns equation, respectively. Simulations show the effect to be substantial: for instance, for a focal brand with a 25% market share, the interaction effect adds around \$100,000 in weekly sales to the jump from a number-ten-ranked to a number-one-ranked endorser.

An analysis of the effects for the endorser performances yields similar results for the brand-sales equation ($\hat{X}_{\Delta t}$ through $\hat{X}_{\Delta n}$). Here, again, the parameters belonging to *Endorser_Equity* are significant and positive, indicating that the effects of athletic performances on sales and stock returns are stronger the better the reputation of an athlete already is. And, again,

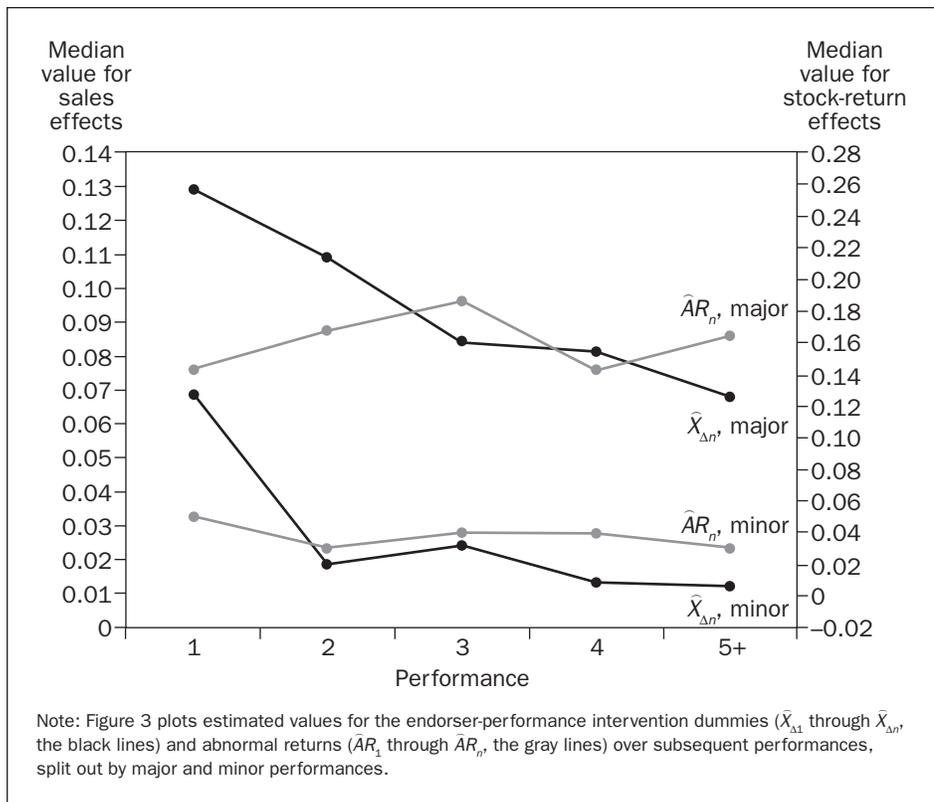


Figure 3 The Impact of Athlete-Endorser Performances Over Time

both the estimates for *Brand_Equity* and the *Brand_Equity * Endorser_Equity* interaction terms are significant and positive, indicating that top-ranked brands and athletes make especially suitable partners. For the stock-returns equation (\hat{AR}_1 through \hat{AR}_n), the parameters for *Brand_Equity* and *Endorser_Equity* again are positive, meaning events involving higher-equity brands and athletes yield higher abnormal returns. Judging by the relatively low estimate for *Endorser_Equity*, 0.002, the absolute effect is small for athletes. This may be because, in theory, traders only respond to new information: a Grand Slam win by Roger Federer, long the world's best tennis player, should jolt traders less than a win by his Swiss compatriot Stanislas Wawrinka, who has never won a major individual title, simply because a Federer victory is almost to be expected (and therefore already incorporated in the stock price). Furthermore, no significant interaction effects are found here: the parameter belonging to *Brand_Equity * Endorser_Equity* is not significantly different from zero.

CONCLUSIONS

Celebrity, and in particular athlete, endorsements are big business: Nike alone is thought to have spent around \$475 million annually on athlete endorsements as part of its \$1.7 billion advertising budget in 2006 (Rovell 2006), but many companies outside the sports-apparel industry are active participants as well. This study finds validation for the use of celebrity endorsers as an advertising strategy: a firm's decision to enlist an athlete endorser generally has a positive pay-off in brand-level sales – in an absolute sense *and* relative to the firm's competitors – and increases the firm's stock returns. Signing the kinds of endorsers that featured in this study on average generates a 4% increase in sales

Celebrity (and, in particular, athlete) endorsements are big business.

– which corresponds with around \$10 million in additional sales annually – and nearly a 0.25% increase in stock returns. While endorsements improve sales for the focal brands, they do *not* move the needle for competing brands in the category. In addition, the findings reveal that an athlete's performance can affect the rewards gained by a firm *over time*: sales and stock returns jumped noticeably with each major championship won by the athlete. The focal brand's equity and the endorser's reputation drive both effects: endorsements between a top-ranked consumer-goods brand and a top-ranked athlete yield the largest increases in sales and stock returns.

The findings reveal that there is a relatively weak association between outcomes: the impact for a given brand at a given point in time can differ sharply depending on which metric – sales or stock returns – is considered. Over time, stock returns and sales also display different patterns: while there are diminishing returns to sales benefits – with, say, each subsequent Grand Slam that tennis star Maria Sharapova wins, sales for the brands she endorses will rise slightly less – stock-return effects are relatively constant over time. And the attributes of firms, brands, and athletes that predict higher stock returns only partially overlap with those associated with higher sales, and vice versa.

MANAGERIAL IMPLICATIONS

The study should help practitioners who are considering signing celebrity endorsers or who seek information on how to best structure and manage such

partnerships over time. Several implications stand out:

- First, the observed positive pay-off in terms of brand-level sales and firm-level stock returns should give advertising executives confidence in the overall effectiveness of an endorsement strategy. In general, enlisting the help of celebrity endorsers pays off.
- Second, the finding that sales increase in an absolute sense *and* relative to the firm's competitors suggests that an endorsement strategy fits a marketing campaign aimed at increasing market share. Fears that celebrity endorsers help competing brands in the category as much as the endorsed brand appear unjustified, the study shows. Where applicable, practitioners should be ready to support an endorsement-advertising strategy with higher distribution levels.
- Third, when it comes to selecting endorsers – an activity that advertisers should approach with care because making the right choices can substantially affect the rewards gained – the results suggest that paying a premium for the most sought-after endorsers seems worthwhile in terms of both sales and stock returns. In fact, betting on top-ranked athletes with a reputation as “winners” is beneficial in two ways: in the short term it leads to the highest financial-performance effects, and in the long run it maximizes the likelihood of more notable achievements, leading to further gains in sales and stock returns. At the same time, practitioners should be aware that the strong competition for those endorsers comes with a chance of overspending, and thus eroding the profitability of the strategy.
- Fourth, in structuring contracts with endorsers, the finding that there are

positive but decreasing returns to sales could be something practitioners may want to reflect in their contracts with endorsers. For instance, bonus payments that rise with each subsequent major championship for the athlete may not be the right format, and neither are long-term or even lifetime contracts. Precisely because sales effects decrease over the course of the duration of the contract, the return on investments in such contracts will likely become less favorable for the advertiser over time. In fact, endorsement contracts that extend well into the future may only be worthwhile if the firm focuses more on its market capitalization and relationships with the investment community – after all, the results show, stock-return effects to endorser achievements are relatively constant over time.

- Fifth, the study highlights that practitioners will generally likely face trade-offs in maximizing sales and stock-return performance. This in turn should affect how they communicate choices regarding endorsement strategies to the business and investment community. Even simply being aware of the differential impact of endorsements on stock returns and sales might help managers more effectively inform investors and other constituents.

Finally, the study also has implications for celebrities and their agents. For instance, the results provide justification for an emphasis on building and maintaining a “winning” record and image – this should translate into a higher value at the time endorsement contracts are signed. And more generally, knowing the likely pay-off to endorsements should help agents and their celebrity clients in better structuring and negotiating deals, thus allowing them to capture a fair share of the value they create. **JAR**

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