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Do Service Guarantees Guarantee Greater Market Value?

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Abstract

Service guarantees are an important feature of many service offerings because consumers recognize greater risk associated with the purchase of services than with the purchase of goods. Despite substantial service guarantee research in the past two decades though, no extant study has examined the return on service guarantee investments. To fill this gap, the authors examine the effect of a service guarantee on a firm's market value by identifying new service guarantee announcements, then using these announcements as events in an event study. The results show that simply offering a service guarantee does not result in greater market value, as measured by a change in stock market returns, for the offering firm. Instead, the market value of a service guarantee depends on its scope and the process required to invoke the guarantee. In particular, service guarantees that are specific in scope or automatically invoked lead to significantly greater market value than unconditional or customer-invoked guarantees, respectively. In addition, these differences are moderated by firm size. From a theoretical point of view, this study extends signaling theory to explain the differential effects of service guarantees, depending on their design.

Keywords

service guarantee, signaling theory, market value, event study, service guarantee design, return on marketing

In October 1989, Hampton Inn hotels issued a press release announcing an industry-first "100% satisfaction guarantee." If guests were not completely satisfied with their stay, Hampton Inn did not expect them to pay. Perhaps not surprisingly, Hampton Inn introduced this guarantee about a year after a groundbreaking article on service guarantees by Hart (1988). Since then, managerial practice shows increasing uses of service guarantees to differentiate a firm from competitors (Wirtz and Kum 2004), yet empirical research on the value of service guarantees has not kept pace. Studies address the design of service guarantees and their effects on consumers and firms, but firms offer service guarantees mainly because they expect a positive influence on their bottom line (Ostrom and Hart 2000). Hampton Inn's guarantee appears to have been extremely successful by financial measures: It increased revenues by $7 million in the first year and $18 million in the second year (Ostrom and Hart 2000). Apart from such anecdotal evidence though, "no published research has addressed the return on service guarantee investments" (Hogreve and Gremler 2009, p. 337). Considering the demand for organizations to justify their service investments and the increased research emphasis on demonstrating returns on marketing investments (Kunz and Hogreve 2011; Ostrom et al. 2010), the lack of information about ways to confirm the financial success of service guarantees is a clear gap in service literature. It also prompts our basic research question: Do service guarantees have a positive effect on the market value of the offering firm?

To address this issue, we examine the effect of service guarantees on a firm's actual market value by estimating the economic impact of offering a service guarantee based on the change in the stock market returns for the firm. Ostensibly, firms offering service guarantees aim to attract and satisfy customers by offering a recovery mechanism in the event of a service failure. Although stock market returns result from investor, not customer, behavior, efficient financial markets reflect how changes in a firm's offerings affect customers' evaluations of the firm. Thus, if investors believe that a service guarantee attracts and satisfies customers enough that it outweighs the costs of implementing such a guarantee, it will be reflected in a greater market value of the firm. Existing research has demonstrated that a guarantee's design affects consumers' perceptions of and how they value a service guarantee; thus, we also examine the effect of specific service guarantee design elements on the market value of the offering firm.

In considering the effect of service guarantee designs on firm performance, we focus on the scope of the guarantee as well as the process of invoking it. The scope refers to whether the service guarantee covers only specific aspects of the service

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(e.g., FedEx's on time delivery guarantee) or is unconditional in nature (e.g., Hampton Inn's 100% satisfaction guarantee). The process of invoking refers to whether the service guarantee must be invoked by the customer (e.g., UPS Freight requires customers to request a refund if the delivery time is late) or is automatically invoked by the firm (e.g., Domino's automatically gives customers a pizza voucher if delivery time is over 30 minutes). These design elements appear critical to service guarantee success (e.g., Hogreve and Gremler 2009; McDougall, Levesque, and VanderPlaat 1998; Wirtz and Kum 2001). By delineating which form for each design element is likely to add most to market value, we also provide guidance to service firms regarding how to enhance their financial performance and success.

In addition, because firm size has long been recognized as an important moderator of the relationship between strategy and performance (Chen and Hambrick 1995), we examine how firm size moderates the effect of the design elements on market value. Firms use service guarantees as a signal to reduce consumers' perceptions of risk, but firm size also affects perceptions of risk (Chandy and Tellis 2000). Therefore, to provide more accurate guidance regarding service guarantee designs, we measure the effects of firm size.

We find that considering only the offer of service guarantees, without addressing their design, would suggest that guarantees have no significant impact on market value. However, specific service guarantees and automatically invoked service guarantees exert a significantly stronger positive effect on market value than do unconditional and customer-invoked guarantees, respectively. These differences are further moderated by firm size, such that they are greater for smaller firms.

From a methodological perspective, our study contributes to service research by using publicly available secondary data and presenting the results of an event study. Most research on service guarantees is experimental and conducted in a laboratory; little research uses objective data (Hogreve and Gremler 2009). Instead, we gather service guarantee announcements ("events") and match them with daily stock prices and firm-level data to measure the changes in market value due to new service guarantees. With this approach, we reconfirm event studies as effective tools that can help service researchers measure the return on service investments with publicly available data.

The rest of this article is organized as follows: We outline our conceptual background and offer hypotheses related to the effects of service guarantees on market value. After we detail the event study methodology, data collection, and data analysis, we discuss the findings and results of our hypothesis tests as well as several robustness checks. Finally, we present both research and managerial implications of our findings.

Conceptual Background

Direct Effects of Service Guarantees on Market Value

Consumers recognize that the purchase of a service often entails a greater risk than the purchase of a good, because of the difficulty of assessing service quality prior to purchase (Murray and Schlacter 1990; San Martín and Camarero 2005). To offset this increased risk, service providers may offer a service guarantee, defined as "an explicit promise made by the service provider to (a) deliver a certain level of service to satisfy the customer and (b) remunerate the customer if the service is not sufficiently delivered" (Hogreve and Gremler 2009, p. 324). This offer reflects the recommendations of signaling theory (Akerlof 1970; Spence 1977), which proposes that a service guarantee, similar to a product warranty, provides a cue to potential customers about the quality of the service (e.g., McCollough and Gremler 1999; Ostrom and Iacobucci 1998). Potential customers require this cue because information about the real quality of a product is often costly for them to obtain (Spence 1974), which creates varying degrees of information asymmetry, depending on their level of information or standard of knowledge about the provider and product to be exchanged (San Martín and Camarero 2005). Thus, in nearly every exchange, customers face a selection problem to identify the offer that best satisfies their needs. A signal is necessary to overcome the asymmetric information problem in which the provider has more information about the product's attributes than the customer (Akerlof 1970; Nelson 1974). Because the provider has knowledge of the quality, whereas the customer can only evaluate quality after consumption, signaling offers an important mechanism (Nelson 1974), especially for services. High-quality service providers have a greater incentive to send a signal to gain competitive advantages over low-quality service providers, and the service guarantee can perform this function.

Extant research on service guarantee outcomes offers insights into the mechanisms by which the signal provided by service guarantees may affect the bottom line. Specifically, the signal provided by service guarantees decreases perceptions of risk (e.g., Ostrom and Iacobucci 1998) and increases the likelihood of purchase (e.g., Boshoff 2003). Additionally, service guarantees affect customer satisfaction (e.g., McCollough and Gremler 2004), increase the likelihood of repurchase (e.g., Dutta, Biswas, and Grewal 2007), and positively affect the internal service quality of the firm (Hays and Hill 2006a, 2006b). We discuss each of these outcomes in detail.

First, by offering a service guarantee, the service provider covers the pre-purchase risk of the potential customer by sending a strong marketing signal of quality. As financial investors are motivated by positive cash flow expectations (Srivastava, Shervani, and Fahey 1998), investments in implementing a service guarantee should increase firm and therefore shareholder value by increasing revenues in the long run (Srinivasan et al. 2009). Service guarantees increase revenues by offering a risk-reducing mechanism that helps reduce customer objections to buying a service and therefore increase the likelihood of purchase (Boshoff 2003). The presence of a strong brand or a high-quality reputation has a positive effect on stock returns based on a signaling effect (Srinivasan et al. 2009). For example, an event study on 48 retailer customer service announcements found firm reputation to have a significant positive effect on market value (Wiles 2007) due to investors using

a firm's reputation as a cue about whether service promises will be fulfilled. In addition, a well-elaborated communication strategy helps differentiate a firm's offerings from competitors (Boulding, Lee, and Staelin 1994) and may serve as a credible signal to investors that the provider will secure steady sales and revenues. This positive signal is valued by investors and will increase stock prices (Srivastava, Shervani, and Fahey 1998). We believe that this positive effect on stock prices will be present in the context of service guarantee offers as well.

Second, research has shown that service guarantees are a means to increase customer satisfaction scores (McCollough and Gremler 2004); customer satisfaction, in turn, has been identified as an important driver of firm value (Aksoy et al. 2008; Fornell et al. 2006; Luo, Homburg, and Wieseke 2011; Tuli and Bharadwaj 2009). A service guarantee's impact on satisfaction scores is twofold. On the one hand, the presence of a service guarantee itself serves to increase satisfaction scores; on the other hand, service guarantees can address negative emotions, such as by decreasing anger after a service failure has occurred and thereby reducing negative word-of-mouth behavior (Hocutt and Bowers 2005; Sarel and Marmorstein 2001; Tucci and Talaga 1997). Both the direct increase of satisfaction and the decrease of negative word-of-mouth communication after a service failure should show positive effects on firm value by securing sales and reducing recovery costs in the long run. The reduction of costs through marketing investments, such as the implementation of a service guarantee, should increase shareholder value (Srinivasan et al. 2009).

Third, firms with a loyal customer base tend to sell more and are more successful in the long run (Heskett et al. 1994; Loveman 1998; Reinartz, Thomas, and Bascoul 2008). Loyal customers are more amenable to buying additional products from the same provider (Mägi 2003; Reinartz, Thomas, and Bascoul 2008), and firms with more loyal customers should have better insights into their customers' experiences and needs. Because service guarantees show positive long-term effects on service customers' intentions to return (Hays and Hill 2006a), the retention effect caused by service guarantees should positively affect firm value.

Fourth, a service guarantee may affect a firm's market value because of its influence on internal service quality; service guarantees can foster process improvements, motivate service employees, and affect the overall quality of service delivery (Hart 1993; Hays and Hill 2006a, 2006b). Quality improvements by themselves can increase customer satisfaction, reduce recovery costs by providing better quality, and ultimately increase firm profits (Anderson, Fornell, and Lehmann 1994; Chen et al. 2009). Investments to adjust internal processes that enable a service provider to meet high-quality standards will lead to higher returns and market success (Rust, Zahorik, and Keiningham 1995). Therefore, service guarantees should affect firm value by improving internal and external service quality.

In summary, past research findings suggest service guarantees (1) send a strong signal of quality to reduce pre-purchase uncertainty and increase likelihood of purchase, (2) increase customer satisfaction, (3) influence customer repurchase intentions, and (4) foster internal process improvements (i.e., increase internal service quality), all of which can help a service provider to increase revenues, lower costs, and therefore positively affect market value. Thus,

Hypothesis 1: The offer of a service guarantee has a positive effect on the firm's market value.

Existing research provides evidence that service guarantees perform differently, depending on several factors, including their design (Hogreve and Gremler 2009). We do not assume that all service guarantees have equal effects on market value. Instead, we examine two service guarantee design elements: the scope and the process of invoking. By examining each of these effects, we attain insights that aggregating all service guarantees together would not provide. We now elaborate on the differential effects of each design element in more detail.

The first design element, *scope*, refers to the extent of the guarantee's coverage. Some guarantees are unconditional, covering every aspect of the service; others focus on specific aspects of service delivery. Early conceptual research on service guarantees recommended the use of unconditional service guarantees, with the assumption that they offered a more powerful and effective signal to influence customers' perceptions of quality (e.g., Hart 1990; Hart, Heskett, and Sasser 1990). However, empirical research achieved a different view. McDougall, Levesque, and VanderPlaat (1998) find that when consumers consider scope along with other design elements, they prefer guarantees that explicitly spell out what is being covered over unconditional guarantees that offer no specifications. Similarly, unconditional guarantees have an "inherent ambiguity . . . which leads to a discounting of their expected value" among consumers (Wirtz and Kum 2001, p. 292). The ambiguity of unconditional guarantees thus weakens the signal provided by the guarantee. Specific guarantees do not suffer the same ambiguity problem, because consumers know precisely what aspects of the service offering the guarantee covers. A well-framed and specific service guarantee can differentiate the firm from its competitors (Wirtz and Kum 2004) and therefore should have a significant effect on firm value by increasing sales.

Another factor that affects scope is opportunistic behavior by the consumer. The fear of consumer opportunism is a reason some firms do not use service guarantees (Wirtz and Kum 2004). Conceptually, the carte blanche nature of unconditional guarantees increases the opportunity for consumers to cheat—that is, invoke the guarantee when no actual failure has occurred. In contrast, specific guarantees typically are limited to measureable elements, such as the speed of delivery, which decreases the potential for opportunistic behavior (McCollough 2010). Investors recognize that a lower probability of opportunistic behavior reduces the costs associated with the service guarantee process. Moreover, specific service guarantees help make service failure verification processes more efficient by providing clear standards for identifying whether a failure has occurred. In combination with the positive effect of a service

guarantee on sales, this reduction in costs makes a specific service guarantee better for the firm's profits, so it should have a greater positive effect on market value than an unconditional service guarantee.

Finally, the effect of service guarantees on market value should relate directly to the payouts required in the event of a service failure. All else being equal, unconditional service guarantees may be subject to greater payouts than specific service guarantees, because an unconditional guarantee covers more aspects of the service delivery and creates more prospects for service failure and subsequent compensation (McDougall, Levesque, and VanderPlaat 1998). To prevent higher payouts, unconditional service guarantees likely require greater investments in employee training and internal processes to strengthen quality (Hart 1988). Both the payouts and investments suggest that unconditional service guarantees are more expensive and thus have a less positive effect on market value than specific guarantees. Therefore, we predict:

Hypothesis 2: The offer of a specific service guarantee has a significantly stronger positive effect on the firm's market value than does an unconditional service guarantee.

The *process of invoking* the service guarantee refers to how the service guarantee process is initiated after a service failure. In some cases, the consumer must invoke the guarantee (e.g., make a claim, fill out a form). In others, the service provider invokes the guarantee, meaning that the compensation process occurs automatically after a promise has been broken (e.g., delivery time guarantee). For the signal provided by a service guarantee to effectively increase sales, improve loyalty, and build market share, the guarantee should be easy to invoke (Hart 1993). If customers perceive the process to be difficult or cumbersome, they are less likely to purchase that service, which contradicts a basic goal of offering the service guarantee (McDougall, Levesque, and VanderPlaat 1998). Automatically invoked service guarantees overcome a perception of difficulty, because the customer does not have to do anything to invoke them. In addition, automatically invoked service guarantees reduce the potential costs to the consumer, such as the time and effort required to invoke (McDougall, Levesque, and VanderPlaat 1998). This reduction in turn should mitigate the consumer's perception of risk associated with purchasing a service. Therefore, a consumer might perceive a service with an automatically invoked guarantee as more valuable and less risky than a service with a customer-invoked guarantee, resulting in greater sales and loyalty. The reduced consumer costs and increased sales associated with automatically invoked guarantees should be valued by stock markets and therefore increase the firm's market value. Accordingly,

Hypothesis 3: The offer of a service guarantee that is automatically invoked (by the firm) has a significantly stronger positive effect on the firm's market value than a service guarantee that requires customers to initiate the invoking process.

Moderating Effect of Firm Size

A signal provided by a service guarantee may be more beneficial to some firms than others. In particular, consumers likely believe that purchasing from larger firms is less risky than purchasing from smaller firms (e.g., Chandy and Tellis 2000). Ostrom and Iacobucci (1998) show that service guarantees are more highly valued when consumers perceive a greater risk associated with the purchase. Thus, a service guarantee may result in greater market value for smaller firms by reducing consumers' persistent perceptions of risk when purchasing from smaller firms. Conversely, investors may believe that the potential negative aspects of service guarantees, such as the threat of sizable payouts (and therefore reduced profits), are less likely to have adverse effects on the bottom line of larger firms.

Both these effects suggest a negative interaction between firm size and the design elements. For scope, larger firms are likely to (1) receive fewer benefits from the signal that the service guarantee provides and (2) be better equipped to handle the possible negative consequences of the unconditional guarantee, leading to a smaller difference in market value between the two scope options for larger versus smaller firms. For the process of invoking, the greater reduction in consumers' perceived risk provided by the automatically invoked guarantee is likely to be more critical to small firms, which would imply a greater difference in the market value created by the two invoking options for smaller versus larger firms. Our final hypotheses predict:

Hypothesis 4: An interaction between the scope of the service guarantee and the size of the firm exists, such that the difference between the effects of specific guarantees and unconditional guarantees on the firm's market value is significantly less for larger firms.

Hypothesis 5: An interaction between the process of invoking a service guarantee and the size of the firm exists, such that the difference between the effects of automatically invoked guarantees and customer-invoked guarantees on the firm's market value is significantly less for larger firms.

Methodology

Event Study

We use an event study methodology to examine the effect of service guarantees on the offering firm's market value. Event studies, first developed in the field of finance and popularized by Fama et al. (1969), have a rich history of use in financial research to measure the effect of various actions, or events, on a firm's market value. Event studies also support scholars' efforts to understand a wide range of topics, from new products to corporate name changes to changes in technology (Johnston 2007). In service research, event studies have been used to measure the effects of events such as e-service announcements (Lin, Jang, and Chen 2007), retailer customer service announcements (Wiles 2007), and service failures (Malhotra and Malhotra 2011).

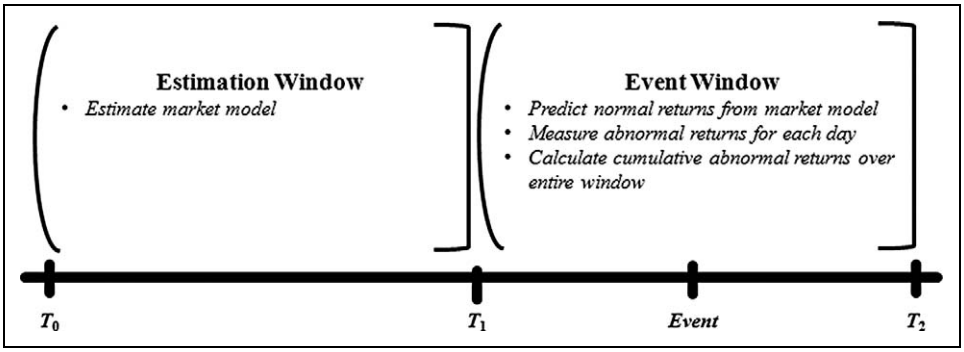

Figure 1. Estimation window and event window in a generic event study.

The event study method is based on the efficient market hypothesis, which states that "prices fully reflect available information" (Fama 1998, p. 284). Thus, stock prices only change if new information becomes available. Although sources of new information are many, one pertinent source is a firm's announcements about changes in its strategy or new offerings. At any given time, new information becomes available that affects the market in general. Therefore, when an event occurs that affects a particular firm, the difference in the return of that firm's stock price due to the event, relative to the return due to the general market at the time of the event, can be fruitfully examined.

To calculate the difference in the stock price returns due to an event, we must determine what the firm's stock return would have been in the absence of the event. This determination requires regressing each firm's stock return on the overall market return during an estimation window, $T_0 + 1$ to T_1. The results of the estimation window regression then serve to predict what the firm's stock return would have been during the event window $T_1 + 1$ to T_2, in the absence of the event. The difference between the actual return and the predicted return for any given day in the event window is called the abnormal return (AR), and the sum of the ARs in an event window is the cumulative AR (CAR). This sequence is illustrated in Figure 1.

The estimation window regression is often performed using the market model, according to which the market portfolio is the standard for normal returns in the absence of an event (MacKinlay 1997). In the market model in Equation 1,

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}. \quad (1)$$

R_{it} is the stock return for event i on day t, R_{mt} is the return for the market portfolio m on day t, α_i is the time-invariant model intercept for event i, β_i is the effect of the market portfolio return on event i, ε_{it} is the error term with $E[\varepsilon_{it}] = 0$ and $\mathrm{Var}[\varepsilon_{it}] = \sigma^2_{\varepsilon_i}$, and t is each day in the estimation window $T_0 + 1$ to T_1. For this study, the estimation window starts 250 trading days prior to the event and runs to the day before the event window starts, or approximately 1 year of trading days.

We can predict the expected stock return for event i for each day during the event window and calculate the ARs, as in Equation 2:

$$\mathrm{AR}_{it} = R_{it} - \left(\hat{\alpha}_i + \hat{\beta}_i R_{mt}\right), \quad (2)$$

where $\hat{\alpha}_i$ and $\hat{\beta}_i$ are the ordinary least squares estimates from Equation 1, AR_{it} is the abnormal stock return for event i on day t, R_{it} and R_{mt} are as before, and t is each day in the event window, $T_1 + 1$ to T_2.

If our event window only included the day of the event, we could continue without any additional calculations of ARs. However, the AR for a single day is not a sufficient indicator of the total impact of the event (Tellis and Johnson 2007). Therefore, we calculate the cumulative AR over the entire event window to obtain a better indicator of the total impact, as shown in Equation 3:

$$\mathrm{CAR}_{i\tau} = \sum\nolimits_{t=T_1+1}^{T_2} \mathrm{AR}_{it}, \quad (3)$$

where $\mathrm{CAR}_{i\tau}$ is the cumulative abnormal stock return for event i over event window τ. For this study, we use an event window consisting of 4 trading days prior to the event to 4 trading days after the event, or [–4, +4]. Although a shorter window may be more appropriate for unplanned events, such as a customer information breach (Malhotra and Malhotra 2011), the slightly wider window is appropriate for planned announcements, to allow for information leakage and enough time for the information to be fully incorporated.

In the hypothesis tests of the service guarantee design elements and their interactions with firm size, the CAR becomes a dependent variable in a regression model specific to each design element, as in Equations 4 and 5, with the design element, firm size, and firm-level controls as independent variables:

$$\begin{aligned}\mathrm{CAR}_i = {} & \beta_0 + \beta_1 \mathrm{SCOPE}_i + \beta_3 \mathrm{SIZE}_i + \beta_4(\mathrm{SIZE}_i \times \mathrm{SCOPE}_i) \\ & + \beta_6 \mathrm{TECH}_i + \beta_7 \mathrm{LOG}_i + \beta_8 \mathrm{COMM}_i + \beta_9 \mathrm{FIRE}_i \\ & + \beta_{10} \mathrm{DOM}_i + \beta_{11} \mathrm{LEV} + \beta_{12} \mathrm{AGE} + \varepsilon_i\end{aligned} \quad (4)$$

and

$$\begin{aligned}\mathrm{CAR}_i = {} & \beta_0 + \beta_2 \mathrm{INVOKE}_i + \beta_3 \mathrm{SIZE}_i + \beta_5(\mathrm{SIZE}_i \times \mathrm{INVOKE}_i) \\ & + \beta_6 \mathrm{TECH}_i + \beta_7 \mathrm{LOG}_i, + \beta_8 \mathrm{COMM}_i + \beta_9 \mathrm{FIRE}_i \\ & + \beta_{10} \mathrm{DOM}_i + \beta_{11} \mathrm{LEV} + \beta_{12} \mathrm{AGE} + \varepsilon_i,\end{aligned} \quad (5)$$

where CAR_i is the cumulative abnormal stock return for event i over the event window; SCOPE_i is a dummy variable equal to 1 when scope is specific and 0 when it is unconditional for event i; INVOKE_i is a dummy variable equal to 1 when the process of invoking is automatic and 0 when it is customer-invoked for

event i; $SIZE_i$ is the size of the firm, measured in market capitalization on a continuous scale at the time of the event i; $TECH_i$, LOG_i, $COMM_i$, and $FIRE_i$ are technical services, logistics, communications, and finance/insurance/real estate industry dummies, respectively, that control for industry-level effects; DOM_i is a dummy variable equal to 1 if the firm for event i is based in the United States, to control for country effects; LEV_i is the financial leverage of the firm; AGE_i is the age of the firm at the time of event i; and ε_i is the error term. We include financial leverage, defined as the ratio of long-term debt to total assets, to control for the financial strength of the firm. Firms with higher financial leverage may have difficulty making the necessary investments to improve service quality and absorbing losses if a multitude of guarantees get invoked (Dotzel, Shankar, and Berry 2013). We include firm age to control for organizational experience, because the greater uncertainty surrounding younger firms may be negatively evaluated by the market (Petkova 2012). We include industry dummy variables to control for the possibility that some industries have systematic variation in their stock returns (Kumar, Ramaswami, and Srivatsava 2000). The base for the industry dummy variables includes all industries with fewer than five events.

Data

Because service guarantees are promotional devices to encourage consumers to purchase the focal service (Hogreve and Gremler 2009), firms often use multiple strategies to promote new service guarantees, including announcements through press releases and other media. This promotion method is similar to firms using press releases to make new product announcements; announcements through press releases and other media have served as events in new product event studies (e.g., Sood and Tellis 2009; Sorescu, Shankar, and Kushwaha 2007). Thus, service guarantee announcements serve as events in our study.

In our first data collection step, we identified service guarantee announcements using a key word search in LexisNexis for U.S. announcements and in multiple databases (e.g., LexisNexis, ECONIS, WISO) and business newspapers (e.g., Frankfurter Allgemeine Zeitung, FT Germany) for international announcements. We used the following search parameters, using appropriate translations for international locations:

(service *OR* quality *OR* satisfaction *OR* "money back") *w/3*
(guarantee *OR* warranty *OR* promise) *w/10*
(new *OR* introduc! *OR* announc!).

The *w/3* and *w/10* parameters mean that the set of key words had to be within 3 or 10 words of the other set of key words, respectively. The "!" wild card means that any variations in the words "introduc" or "announc" were included. The key word search proceeded in reverse chronological order for each year from 2011 to 1998. We stopped at 1998, because only four usable service guarantee announcements appeared between 2001 and 1998, so the costs of obtaining additional service guarantees likely outweighed the benefits gained from doing so. Because of the broadness of the key word search, an average year produced approximately 1,000 key word hits, with earlier years having fewer and later years producing more hits. Next, we examined each key word hit to see whether it truly was a service guarantee announcement. This process reduced the initial set of approximately 13,000 hits to 206 actual service guarantees. Firms occasionally announce new service guarantees in conjunction with a new service, and we found that of the 206 new service guarantee announcements, 50 coincided with the announcement of a new service. To ensure that any abnormal return would be due to the new service guarantee and not the offering of a new service, we excluded these 50 announcements from further consideration.

Event studies can only be completed with publicly traded firms, because no stock price data exist for privately held firms. Therefore, in a second step, we removed all nonpublicly traded companies, leaving 55 announcements. In addition to firms announcing a new service guarantee in conjunction with a new service, firms may announce a new service guarantee in conjunction with changes to other marketing activities, such as new advertising, promotion, or pricing strategies. Furthermore, incidents unrelated to the offering of a new service guarantee, such as a lawsuit or quarterly earnings announcement, may occur during the event window. These incidents represent contaminating events and must be excluded to ensure any abnormal return is due solely to the announcement of a new service guarantee.[1] The exclusion of such incidents left us with a final sample size of 50 publicly traded firms that made new service guarantee announcements. This sample size may seem small, yet it is common to find sample sizes of around 50 in event studies of marketing actions (e.g., Balasubramanian, Mathur, and Thakur 2005; Horsky and Swyngedouw 1987; Wiles 2007). In addition, Brown and Warner (1985, p. 25) point out that samples sizes of 50 are sufficient for "methodologies based on the OLS market model" and that "standard parametric tests are well-specified."

Two coders familiar with services and service guarantees categorized each guarantee according to its design. Service guarantees with no coverage limitations, such as 100% satisfaction, were classified as unconditional. If the announcement listed specific aspects of service delivery that were covered, such as delivery time, it was classified as a specific guarantee. Similarly, if a service guarantee announcement indicated that the compensation was to be automatically awarded in the event of a service failure, the guarantee was classified as automatically invoked. If the announcement indicated instead any action that the customer must take to invoke the guarantee, it was coded as customer invoked. For both the scope and the process of invoking, the coding procedure created 90% agreement between the coders, which suggests the high reliability of our categorization (Tellis, Chandy, and Ackerman 1999). The coders resolved any differences through discussion. The numbers of new service guarantee announcements by design element, industry, and country appear in Table 1.

Table 1. Service Guarantee Announcements by Design Element, Industry, and Country.

Announcements	*n*
All announcements	50
Scope	
Specific	32
Unconditional	18
Process of invoking	
Automatic	17
Customer	33
Industry	
Technical services	7
Logistics	9
Communications	10
Finance/insurance/real estate	10
Other	14
Country	
United States	37
International	13

After identifying and coding the new service guarantee announcements, we completed the data collection by appending stock market and firm-level data. The stock data came from the Center for Research in Security Prices (CRSP) U.S. stock database for the U.S. service guarantees and from Bloomberg for the international service guarantees. For the U.S. service guarantees, the CRSP value-weighted index entered the market model in Equation 1. For international guarantees, we used the appropriate national index, such as Deutsche Börse AG German Stock Index (DAX) in Germany. The firm data, including market capitalization, industry, financial leverage, and firm age, came from the CRSP and Compustat databases for U.S. guarantees and from Bloomberg for international guarantees.

Results

We first examine the overall CAR for the portfolio of firms offering a new service guarantee; we also consider the CARs for portfolios of firms distinguished by the various design elements, as we show in Table 2. In addition to the mean CAR from Equation 3 for each portfolio, we provide four commonly reported statistics for event studies: the positive to negative CAR ratio, the standardized residual test statistic (Patell 1976), the standardized cross-sectional test statistic (Boehmer, Musumeci, and Poulsen 1991), and the generalized sign test statistic (Cowan 1992).

With respect to the overall effect of the announcement of service guarantees on market value, the CAR over the [−4, +4] event window is slightly positive but not significantly different from 0. Thus, we cannot confirm Hypothesis 1; simply having a service guarantee does not increase market value. By examining the individual service guarantee design elements in Table 2 though, we recognize why, in the aggregate, service guarantees do not appear to affect market value. The overall effect of service guarantees on CAR does not differ significantly from 0, because the options within each design element have opposite effects. For example, specific service guarantees have a significant positive effect on CAR, but unconditional service guarantees have a negative (though not significant) effect. Similarly, automatically invoked service guarantees have a significant positive effect on CAR, but customer-invoked service guarantees have a negative effect, though it is not significant. Breaking down the service guarantees to examine how individual design options affect market value thus provides us with additional insights that aggregating all service guarantees together cannot provide.

To test our hypotheses related to specific design elements and their interactions with firm size, we use variations of Equations 4 and 5; the results are presented in Table 3. Model 1 serves as a base model. Both Models 2 and 4 in Table 3 are based on Equation 4 and reveal that the scope of the service guarantee has a statistically significant effect (Model 2 $\beta = .040$, $t = 2.68$; Model 4 $\beta = .050$, $t = 2.74$) on market value over the event window. That is, specific service guarantees lead to greater market value for a firm than do unconditional service guarantees, in support of Hypothesis 2. Models 3 and 5 in Table 3, based on Equation 5, reveal that the process of invoking the service guarantee also has a statistically significant effect (Model 3 $\beta = .042$, $t = 2.59$; Model 5 $\beta = .050$, $t = 2.65$) on the firm's market value: Automatically invoked service guarantees induce significantly greater market value than do customer-invoked service guarantees, in support of Hypothesis 3.

All five models in Table 3 enable us to examine the main effects of firm size (measured by the firm's market capitalization on the day of the event) on market value over the event window. Three of the five models exhibit a statistically significant, positive effect of firm size on market value over the event window. Overall, larger firms appear to enjoy a greater market value bump from offering the service guarantee than do smaller firms. To explore the interaction effects, we turn our attention to Models 4 and 5 in Table 3. The results of Model 4, based on Equation 4, show a significant negative interaction between firm size and the scope of the service guarantee ($\beta = -.051$, $t = -1.70$). In essence, as firm size increases, the difference in market value between specific and unconditional service guarantees decreases. The interaction, which we depict in Figure 2a, provides support for Hypothesis 4. Furthermore, the results of Model 5, based on Equation 5, show a significant negative interaction between firm size and the process of invoking the service guarantee ($\beta = -.050$, $t = -1.79$). As firm size increases, the difference in market value between automatically and customer-invoked service guarantees decreases (see Figure 2b). Thus, we find support for Hypothesis 5.

Robustness Checks

Several robustness checks help ensure the validity of our results, including the use of alternative models for Equations 1 and 2. First, instead of using the CRSP value-weighted index for U.S. firms, we use the equal-weighted index. The results remain largely the same as those from our original models for our focal variables: scope (Model 2 $\beta = .039$, $t = 2.62$; Model 4

Table 2. Announcement Effect Overall and by Specific Design Elements.

Portfolio	Mean CAR	Positive to Negative CAR Ratio	Patell's *Z*	Boehmer et al.'s *Z*	Generalized Sign Test
All announcements	0.229%	28:22	0.952	1.538	1.239
Scope					
Specific	1.592%	21:11	1.236	1.907*	2.082*
Unconditional	−2.195%	7:11	−0.061	−0.116	−0.711
Process of invoking					
Automatic	3.183%	14:3	1.882*	3.297*	2.949*
Customer	−1.293%	14:19	−0.179	−0.307	−0.590

Note. CAR = cumulative abnormal return.
*p <.05.

Table 3. Regression Results.

	Dependent Variable: Cumulative Abnormal Return (CAR)									
	Model 1 β (*t* statistic)		Model 2 β (*t* statistic)		Model 3 β (*t* statistic)		Model 4 β (*t* statistic)		Model 5 β (*t* statistic)	
Main effects										
Scope (1 = specific)			.040	(2.68)***			.050	(2.74)***		
Invoking (1 = automatic)					.042	(2.59)***			.050	(2.65)***
Market capitalization (MC)	.016	(1.30)	.021	(1.38)*	.014	(1.01)	.037	(3.63)***	.029	(3.11)***
Interaction effects										
MC × Scope							−.051	(−1.70)**		
MC × Invoking									−.050	(−1.79)**
Intercept and Controls										
Intercept	−.006	(−.28)	−.041	(−1.76)*	−.026	(−1.09)	−.049	(−1.96)*	−.031	(−1.24)
Technical services	−.008	(−.21)	.008	(.24)	.002	(.06)	.016	(.47)	.006	(.16)
Logistics	.031	(1.24)	.016	(.64)	.016	(.76)	.020	(.75)	.020	(.91)
Communications	.038	(2.10)**	.041	(2.45)**	.032	(1.98)*	.047	(2.74)***	.034	(2.14)**
Finance/insurance/real estate	.017	(.70)	.017	(.69)	.005	(.22)	.023	(.96)	.008	(.36)
U.S.-based firm	−.011	(−.69)	−.006	(−.35)	−.002	(−.13)	−.007	(−.42)	−.003	(−.18)
Financial leverage	−.004	(−.12)	.011	(.35)	.014	(.46)	.011	(.35)	.017	(.52)
Firm age	−.000	(−.14)	−.000	(−.09)	−.000	(−.11)	.000	(.07)	.000	(.10)
	R^2 =.115		R^2 =.206		R^2 =.213		R^2 =.229		R^2 =.238	
	$F(8, 41) = 1.58$		$F(9, 40) = 2.06$*		$F(9, 40) = 2.47$**		$F(10, 39) = 2.00$*		$F(10, 39) = 2.84$***	

*p <.1. **p <.05. ***p <.01.

β =.051, $t = 2.81$), process of invoking (Model 3 β =.040, $t =$ 2.25; Model 5 β =.048, $t = 2.32$), the scope-firm size interaction (β = −.058, $t = -1.76$), and the invoking-firm size interaction (β = −.052, $t = -1.67$).

Second, we employ the combined Fama-French-Momentum four-factor model (Carhart 1997; Fama and French 1993), which adds three factors—market capitalization, value, and momentum—to the market return factor. Equations 1 and 2 thus become Equations 6 and 7:

$$R_{it} = \alpha_i + \beta_{1i}R_{mt} + \beta_{2i}\mathrm{SMB}_t + \beta_{3i}\mathrm{HML}_t + \beta_{4i}\mathrm{UMD}_t + \varepsilon_{it} \quad (6)$$

and

$$\mathrm{AR}_{it} = R_{it} - \left(\hat{\alpha}_i + \hat{\beta}_{1i}R_{mt} + \hat{\beta}_{2i}\mathrm{SMB}_t + \hat{\beta}_{3i}\mathrm{HML}_t + \hat{\beta}_{4i}\mathrm{UMD}_t\right), \quad (7)$$

where SMB is the returns on a portfolio of small stocks minus the returns on large stocks (i.e., market capitalization factor); HML is the returns on a portfolio of value stocks minus growth stocks (i.e., value factor); UMD is the returns on a portfolio of high prior return stocks minus low prior return stocks (i.e., momentum factor); and the other variables are as we described previously. Because the daily Fama-French and Carhart factors were not available for international firms, we use just U.S. firms for this robustness check. In general, statistically significant results persist for our focal variables: scope (Model 2 β =.035, $t = 1.52$; Model 4 β =.045, $t = 1.55$), process of invoking (Model 2 β =.067, $t = 2.67$; Model 5 β =.075, $t = 2.67$), and the invoking-firm size interaction (β = −.056, $t = -1.62$). The only difference between the four-factor model using U.S. firms and the original model using all firms occurs with the scope-firm size interaction (β = −.045, $t = -1.09$), though it continues in the expected direction and is similar in magnitude.

Third, we consider selection bias. In our context, a selection bias may occur because the offering firms made a choice to

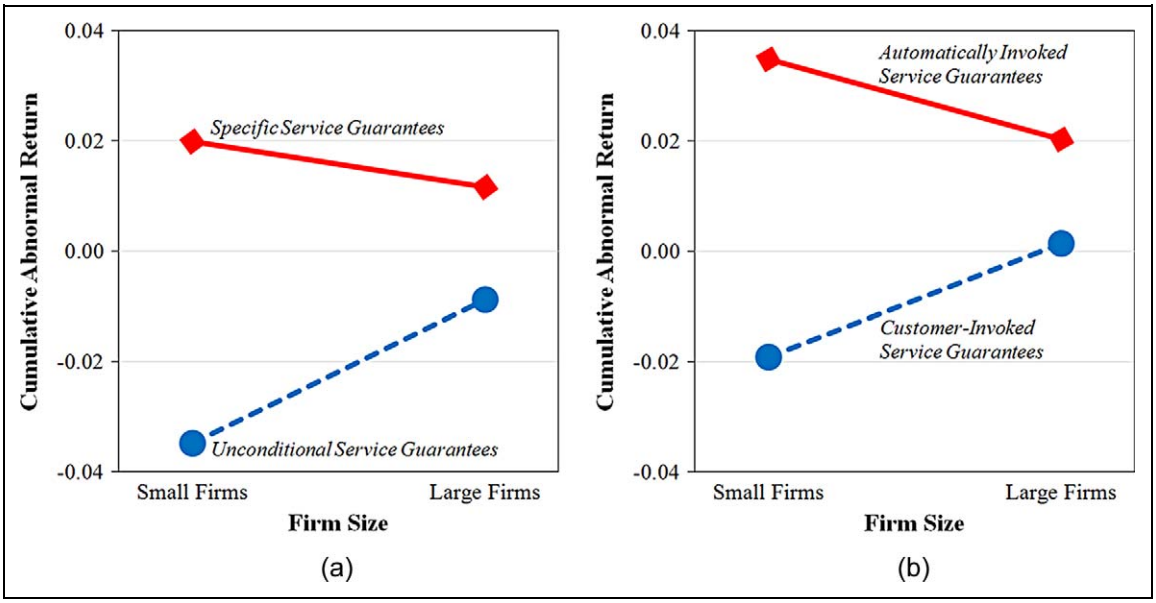

Figure 2. Interaction between firm size and service guarantee design elements of (a) scope and (b) process of invoking.

provide the new service guarantee on the basis of other factors, whereas we only observe the "positive" choice (i.e., the firms that chose to introduce a new service guarantee). That is, we do not observe the "negative" choice (i.e., the firms that chose not to introduce a new service guarantee). For example, it may be the case that only firms reasonably assured of their own service quality offer a new service guarantee, while firms with poor service quality do not offer a guarantee. To account for selection bias, we would need to identify firms that considered but then chose not to offer a guarantee. With this information, we could correct for selection bias by using the Heckman (1979) inverse-Mills ratio method. Unfortunately, the firms that chose not to offer a service guarantee are unknown, and we cannot assume firms that do not offer guarantees ever contemplated doing so. However, though we cannot control for selection bias for these reasons, we can control for a similar factor, existing service quality, and make predictions based on the well-established link between service quality and customer satisfaction. Although service quality and customer satisfaction differ conceptually, service quality is often considered a driver of customer satisfaction (Dagger and Sweeney 2007). Therefore, we conduct a subsample analysis of firms in our data that also appeared in the American Customer Satisfaction Index (ACSI). Of the 37 U.S. firms in our data set, only 15 appeared in the ACSI for the year in which they announced their new service guarantee.[2] When we use offering firms' ACSI scores as a control variable, none of the coefficients is significant—most likely due to the small sample size. However, the regression coefficients move in the same direction as those in our original models, with positive main effects for service guarantees that are specific in scope or automatically invoked and negative interactions with firm size. In addition, the regression coefficient for customer satisfaction is positive, but not significant. Thus, we have some evidence to suggest that selection bias, due to the firms' existing customer satisfaction, does not substantively alter the results.

Finally, we use alternative event and estimation windows. For an event window of $[-3, +3]$, the results remain largely the same as those in our original models: scope (Model 2 $\beta = .027$, $t = 2.03$; Model 4 $\beta = .039$, $t = 2.17$), process of invoking (Model 3 $\beta = .038$, $t = 1.85$; Model 5 $\beta = .048$, $t = 2.06$), the scope-firm size interaction ($\beta = -.055$, $t = -1.70$), and the invoking-firm size interaction ($\beta = -.065$, $t = -2.08$). Next, we consider a shorter estimation window of 100 trading days; the only meaningful difference is in Model 3, such that the scope-firm size interaction is no longer significant ($\beta = -.013$, $t = -.49$), though still in the hypothesized direction. The coefficients for the other focal variables are significant and in the expected direction. Finally, we use a 230-day estimation window, stopping 21 days prior to the event window instead of just 1 day prior. No significant differences arise in our focal variables: scope (Model 2 $\beta = .038$, $t = 2.59$; Model 4 $\beta = .048$, $t = 2.65$), process of invoking (Model 3 $\beta = .040$, $t = 2.45$; Model 5 $\beta = .047$, $t = 2.49$), the scope-firm size interaction ($\beta = -.047$, $t = -1.60$), or the invoking-firm size interaction ($\beta = -.049$, $t = -1.68$). Thus, changing either the event window or the estimation window does not appear to have any impact on the results. Overall, the robustness checks provide additional support for our main findings.

General Discussion

Contributions to Research

Measuring the returns on marketing actions continues to be an emphasis in service research (e.g., Ostrom et al. 2010). To the best of our knowledge though, this study is the first to measure the market value of service guarantee offers. Therefore, we add to the stream of research that focuses on gaining new and important

insights into the financial returns of service marketing instruments. In considering our key question, "do service guarantees guarantee greater market value?" our results show that not all service guarantee investments result in greater market value for the firm. Rather, the strength of the effect of the signal provided by the service guarantee on market value depends on the design of the service guarantee. In particular, the inherent ambiguity of unconditional service guarantees (Wirtz and Kum 2001) seems to weaken their signal relative to that provided by specific service guarantees. Similarly, automatically invoked service guarantees provide a much stronger signal of future service quality relative to customer-invoked service guarantees.

By blending service guarantee design elements (i.e., scope) with service guarantee outcomes (i.e., firm market value), we offer support to scholars who have challenged some conventional wisdom regarding unconditional service guarantees (e.g., McDougall, Levesque, and VanderPlaat 1998; Wirtz and Kum 2001). Although unconditional service guarantees may be a strong signal to consumers, they do not appear well received by the market (investors and shareholders). Therefore, by showing that specific service guarantee designs result in greater market value, we add to the stream of research that addresses the issue of the effectiveness of unconditional versus specific designs. This addition represents an important triangulation of research findings on the scope of service guarantees by showing that investors and stockholders view service guarantees in a way similar to consumers' perspectives.

We also expand scarce literature on the process of invoking service guarantees by examining the effects of this necessary design element on service guarantee outcomes. This important aspect has not received much attention from service researchers to date, so this study expands understanding about service guarantees by showing that automatically invoked guarantees lead to greater market value. This finding further reveals new opportunities for researchers to examine consumer preferences for automatically versus customer-invoked service guarantees.

We help expand service research knowledge by revealing the moderating effects of firm size on the market value of new service guarantees. Although existing research has considered reputation and brand effects with respect to service guarantees (e.g., Wirtz, Kum, and Lee 2000), it has not explored the more general aspect of firm size. Firm size moderates the effect of both scope and the process of invoking on market value; these findings support previous research that indicates larger firms often have inherent advantages over smaller firms (e.g., Chandy and Tellis 2000) and adds another strategic variable to the list of strategy-performance relationships moderated by firm size (Chen and Hambrick 1995).

Finally, extant service guarantee research often relies on experimental laboratory data (Hogreve and Gremler 2009), which allows researchers to control for extraneous factors and uncover the effects on consumer behavior. Our research instead uses objective secondary data from actual service guarantees to show how service guarantees matter financially for service firms. This research answers a call by Ostrom et al. (2010) to find new methods to demonstrate returns on service investments and confirms the value of event studies for service research.

Managerial Implications

When deciding to introduce a service guarantee, managers have several design choices. The mere offering of a service guarantee does not ensure positive market value. Instead, the options that managers select when offering a service guarantee have significant impacts. In particular, our findings indicate that specific service guarantees are viewed by the stock market more favorably, consistent with previous empirical research that suggests customers prefer specific over unconditional service guarantees (McDougall, Levesque, and VanderPlaat 1998). This finding also has face validity, inasmuch as specific service guarantees lessen the potential negative consequences that unconditional guarantees create, through their lower payouts, lower required investment to prevent invocation, and smaller chance of consumer opportunism.

The advantage of specific service guarantees is especially clear for smaller firms. Our results show that the difference in market value between specific versus unconditional service guarantees is much greater for small firms than for large firms. Investors may perceive small firms as not adequately equipped to handle the potentially negative consequences of unconditional guarantees. Thus, our findings suggest that managers in smaller firms generally should choose specific service guarantees instead of unconditional service guarantees to increase their firm's market value.

Managers in larger firms instead appear to have greater flexibility in their service guarantee offers, because the difference in market value between specific and unconditional guarantees is much smaller. This increased flexibility is likely due to the greater resources available to large firms to manage the possible negative consequences of a service guarantee. Consider, for example, two unconditional guarantees that appeared in our data. An unconditional satisfaction guarantee offered by Walmart's members-only retail warehouse Sam's Club was received favorably by investors and stockholders, as reflected by a positive CAR of 2.3% over the event window. In contrast, a new member unconditional guarantee offered by Medifast's weight loss centers was not received favorably, as reflected by a negative CAR of −7.1% over the event window. Medifast is significantly smaller (in terms of market capitalization) than Walmart, and it may have been better off had it offered a specific service guarantee for new members, such as one based on the new members' weight loss.

Although unconditional guarantees generally induce less market value, it does not mean they should never be offered. Some situations may warrant the use of an unconditional service guarantee, such as when the firm has a long history of service quality deficiencies but wants to signal its significantly improved quality—assuming, of course, that the firm actually has invested in improving its quality. In these situations, unconditional service guarantees may be stronger and preferable (McCollough 2010). Managers must determine the

scope that is best for the firm, but we suggest they recognize that, in general, specific service guarantees result in greater market value.

Managers also have a choice between automatically or customer-invoked service guarantees. Existing research suggests that easy-to-invoke service guarantees are a stronger signal about service quality than are those that are difficult for consumers to invoke (Hart 1993). An automatically invoked service guarantee is the ultimate in ease for consumers; our findings suggest that they also are viewed by the stock market more favorably than customer-invoked service guarantees.

As was the case for scope, the advantage of automatically invoked guarantees over customer-invoked guarantees is especially true for smaller firms. Consumers may believe purchases from larger firms are less risky than smaller firms (Chandy and Tellis 2000), and they value service guarantees more highly when they associate a greater risk with a purchase (Ostrom and Iacobucci 1998). Thus, smaller firms appear to benefit more from the signal provided by the automatically invoked guarantee than do larger firms, and when possible, managers in smaller firms should choose automatically invoked service guarantees to increase their firm's market value. Two automatically invoked (and specific in scope) guarantees from our data highlight this difference. The stock market's response to an automatically invoked price guarantee for shipping services through YRC Worldwide was much more favorable (large positive CAR of 17.8%) than the market's response to a similar guarantee for shipping services through the much larger Con-way (slight negative CAR of −1.5%). At the time each guarantee was announced, Con-way was about 18 times the size of YRC Worldwide.

However, not all service guarantees can be automatically invoked (e.g., a clean hotel room). Unconditional service guarantees cannot be automatically invoked but rather must be invoked by the customer, because the firm does not know with what issue the customer might be dissatisfied. In addition, an automatically invoked service guarantee reduces the potential interaction between the customer and firm, because the customer does not have to contact the firm, which limits the firm's ability to gain important information about how to improve its service quality. Therefore, though in general automatically invoked service guarantees have greater market value, each firm's service offerings, along with the scope of the guarantee, may dictate the most appropriate invocation process.

Limitations and Directions for Further Research

This study is not without limitations. First, as with all event studies, the results reflect the perceptions of shareholders and investors, not necessarily the perceptions of consumers. This limitation also marks a benefit of our study, in that much research has examined service guarantees from the consumer's perspective, whereas ours is the first to examine it from a market value perspective. Additional research should explore the relationship between customer perceptions of service guarantees and the effect on market value.

Second, as mentioned previously, we are unable to control for selection bias that may occur if only those firms that are reasonably confident in their own service quality offer new service guarantees. Additional research should examine this potential endogeneity issue by identifying firms that contemplated but did not offer a service guarantee. Possible avenues to identify such firms may include competitors' annual reports or required regulatory reports, executive interviews, and business press articles. Furthermore, we are unable to account for any underlying selection bias issues that might have been identified by controlling for existing service quality at the time of the new service guarantee announcement. While we attempted an analysis using data from the ACSI, the results were limited due to the small number of firms in our data included in the ACSI. Future research should attempt to account for any underlying selection bias due to service quality by more thoroughly controlling for existing service quality. Absent of having access to proprietary service quality or customer satisfaction data from offering firms, additional research should consider new service guarantees offered by firms in existing service quality or customer satisfaction databases.

Third, the results are based only on data from publicly traded companies that offer service guarantees. It is unclear whether similar results would hold for private companies. Additional research should examine how service guarantees affect the financial performance of both public and private companies.

Fourth, with our data we cannot uncover the underlying mechanism of how service guarantees lead to market success. Prior research into service guarantees has identified several consequences of service guarantees on the firm or the consumer; it would be of interest to show which of these consequences, if any, is directly or indirectly responsible for the increase in firm value. For example, future research could analyze possible mediation effects to show how service guarantees lead to specific outcomes. This information is needed to derive more concrete guidelines for service guarantee management. Such research also could combine survey and market performance data to unveil exactly how service guarantees lead to success.

Although these limitations must be acknowledged when considering our results and implications, our findings provide new insights that we hope stimulate further research in the service guarantee domain.

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Notes

1. Events that affect a firm but are not announced cannot be removed from our data. However, if an event is not announced, it is unlikely investors would be aware of it, and therefore the unannounced event would have no effect on the stock price.
2. If the new service guarantee announcement was in the first quarter of the year, we used the prior year's the American Customer Satisfaction Index (ACSI) score.

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