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THE EFFECT OF SPONSORSHIP ANNOUNCEMENTS ON STOCK RETURNS: DOES INDUSTRY CONCENTRATION MATTER?

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Abstract

The purpose of this paper is to provide an event study based evidence on whether the effect of sponsorship announcements on stock returns differs based on market concentration. The study sample includes 17 sponsorship announcements occurred during the period of 2011 and 2016 for 10 firms listed in BIST. In order to test whether stock return is affected by sponsorship announcements, abnormal return (AR), cumulative abnormal return (CAR) were tested by using t-tests for event window [-5, +5]. According to the results, in [-5 +5] event window 13 events revealed statistically significant AR and CAR before and after the event day. Accordingly, sponsorship announcements are associated with stock returns of sponsoring firms. A Mann-Whitney U test indicated statistically significant difference in abnormal returns between firms operating in non-concentrated industries and firms in concentrated industries. In concentrated markets sponsorship announcements created negative abnormal returns. On the other hand, sponsorship announcements created positive abnormal returns in non-concentrated industries. The study extends the current knowledge through providing empirical evidence for the role of market competitive structure.

Keywords

Sponsorship, Event Study, Stock Return, Industry Concentration

1. Introduction

Firms devote large amounts to sponsorships and expect financial returns (e.g. sales, profitability) as well as market returns (e.g. awareness, image). Hence, one of the main topics in sponsorship literature has been the linkage between sponsorship and stock returns (Clark, Cornwell, & Pruitt, 2009; Cornwell, Pruitt, & Clark, 2005; Khvastunov, 2011; Mazodier & Rezaee, 2013; George S Spais & Filis, 2008; George S. Spais & Johnston, 2014). However, previous studies provided conflicted results indicating that the effects on stock returns caused by sponsorships are not same for all sponsorship deals and sensitive to firm and event characteristics. In addition, the effect of sponsorship may be sensitive to market's competitive structure. Market concentration which is an indicator of competitive structure is associated with returns and promotional expenditures (Hasan, Hunter, & Mathis, 2000; Hou & Robinson, 2006). Although market concentration is an important predictor of firm behavior (Cho & Hwang, 2017), we could not encounter any study examining whether the effect of sponsorship on stock return is similar for different market concentration levels. From these points, the purpose of this paper is to provide an event study based evidence on whether the effect of sponsorship announcements on stock returns differs based on market concentration. The study may contribute to the literature through examining competitive structure of the market and providing new empirical evidence from a developing market.

2. Literature

Efficient market hypothesis states that stock price represents all public information about the firm (Fama, 1991). Accordingly, investors follow and are influenced by marketing related factors (Bharadwaj, Tuli, & Bonfrer, 2011). Hence there is a stream of research (Clark et al., 2009; Cornwell, Roy, & Steinar, 2001; Filis & Spais, 2012; Mazodier & Rezaee, 2013; George S Spais & Filis, 2008; Tripodi & Hirons, 2009) focusing on whether sponsorship increases stock prices. Those studies used event study methodology to test the influence of sponsorship announcements on stock returns.

Event study is used to examine whether new information in the market cause abnormal return on stocks prices. In other words, event study provides a direct measure of the effect of the

event announcement on the announcing company's market value. Thus, event study also tests market efficiency (Baim, Goukasian, & Misch, 2015).

Some of the studies (Baim et al., 2015; Kudo, Jae Ko, Walker, & Connaughton, 2015; Pruitt, Cornwell, & Clark, 2004; Reiser, 2012) using even study to test influence of sponsorship announcements on stock returns, indicated significant increases in stock prices while some others (Mazodier & Rezaee, 2013; Tsiotsou, 2011) found significant decreases in stock prices. Those conflicting findings depend on endogenous firm specific and sporting event-specific factors such sponsorship type, congruence of event and sponsor, nature of sponsor, size of sponsor, and for new and renewing sponsors and so on (Filis & Spais, 2012; Mazodier & Rezaee, 2013). However, exogenous environmental factors may also be considered. Regarding to this, the effect of sponsorship may be sensitive to market's competitive structure which affects managerial decisions and is an important determinant of firm profitability (Karuna, 2007). Hence competitive structure affects risk and investors' perceptions (Hou & Robinson, 2006).

Competitive structure indicates whether the market is characterized by a significant competition or is dominated by a few companies (Naldi & Flamini, 2014). One of the main indicators of competitive structure is market concentration (Jacquemin, De Ghellinck, & Huveneers, 1980). The degree of concentration in an industry has been widely measured by Herfindahl-Hirschman index (HHI). HHI is calculated by squaring the market share of each company competing in a market, and then summing the resulting numbers (Varan & Cerit, 2014). Higher values of HHI indicates that market is dominated by a few large firms which implies less market competition. On the other hand, lower values of HHI indicates that the market is shared by many competing firms which indicated high market competition (Hou & Robinson, 2006; Karuna, 2007; Zhang, Zhang, & Zhao, 2001). Therefore, the minimum value represents the perfect competition case and the maximum value represents the absolute monopoly (Naldi & Flamini, 2014).

It is validated in the literature that market concentration and firm return are correlated. For instance, Hou and Robinson (2006) showed that firms in highly concentrated industries generate lower returns, even after controlling for size, book-to-market, momentum, and other known return predictors. Another study (Sharma, 2011) examined the relationship between stock returns, product substitutability, market size, and industry concentration. The results of this study indicated that firms in more concentrated industries earn lower returns adjusting for market size, and book-to-market and momentum factors.

Market concentration also influences promotional expenditures. Firms in less concentrated and thus in highly competitive markets tries to increase or maintain their market performance by the

use of promotional activities. The study (Hasan et al., 2000) conducted on 2354 companies operating in Southeastern market indicated the negative association between market concentration and promotional expenditures.

With regard to the influence of market concentration on firms' returns and promotional expenditures, it may be expected that concentration has a role on the relationship between promotional activities and stock returns. Accordingly, the effect of sponsorship announcements and stock returns may vary in different concentration structures. Such that in concentrated (non-concentrated) markets investors may perceive sponsorship as a redundant (crucial) investment and thus sponsorship decrease (increase) stock prices. From this points, this study aimed to examine whether the effect of sponsorship announcements on stock returns differs based on market concentration level. More specifically, the following hypotheses are tested;

H1: Announcements of sponsorships are associated with stock returns of sponsors

H2: There is significant difference in abnormal returns between firms operating in non-concentrated industries and those operating in concentrated industries.

H3: There is significant difference in cumulative abnormal returns between firms operating in non-concentrated industries and those operating in concentrated industries.

3. Methodology

3.1 Event Study

This study used event study methodology to examine the effects of sponsorship announcements on stock returns of sponsoring company. The primary step in event study is to define the events and the event window. Defining event window regards to identification of the time period over which the security prices of the firms involved in this event (MacKinlay, 1997). Time period can be presented graphically as shown in Figure 1.

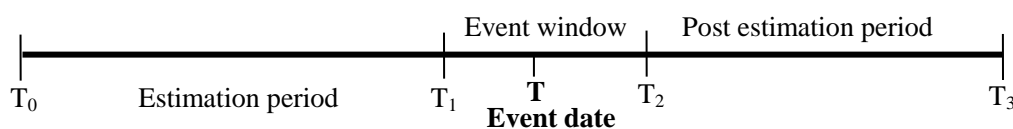


Figure 1: Time Period in Event Study

Estimation period of T₀-T₁ is the period that abnormal returns and cumulative abnormal returns in T₁-T₂ are estimated. Although the estimation period can be 100-300 days for daily data, there have been no agreements on the length of estimation period and event window period (Peterson, 1989). In order to calculate abnormal return (AR) and cumulative abnormal return

(CAR), at first, normal return is calculated. Normal return of an asset may be calculated with the following formula:

$$R_{i,t} = \left(\frac{P_{i,t} - P_{i,t-1} + D_{i,t}}{P_{i,t-1}} \right) \times 100 \quad \dots(1)$$

or

$$R_{i,t} = (\ln(P_{i,t}) - \ln(P_{i,t-1})) \times 100 \quad \dots(2)$$

$R_{i,t}$; return on asset i at time t , $P_{i,t}$; price of asset i at time t $P_{i,t-1}$; price of asset i at $t-1$, $D_{i,t}$, dividend on asset i at time t .

The most widely acknowledged methods for calculating abnormal returns are Constant Return Model and Market Return Model. Besides these, Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Model are employed to calculate abnormal return. The most widely used among these models have been Market Return Model which assumes a linear relationship between market return and stock return.

Market Return Model assumes linear relationship between market return and individual asset return and constant variance. According to Market Return Model, return on asset is based not only on market portfolio return but also firms' specific risk.

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t} \text{ for each } \forall_i \quad \dots(3)$$

Where $R_{m,t}$ reflects to return on market portfolio (BIST100) at time t ; α_i and β_i , reflects parameters of market model; $\varepsilon_{i,t} \sim N(0, \sigma^2)$ is the error term.

Parameters can be estimated using Ordinary Least squares (OLS) or Sholes/Williams approach. OLS estimations are used to estimate parameters via Sholes/Williams approach. With the use of estimation period data for firm i , parameters of Market Return Model can be estimated via OLS method using the following formulas (MacKinlay, 1997);

$$\hat{\beta}_i = \frac{\sum_{\tau=T_0+1}^{T_1} (R_{i,\tau} - \bar{R}_i)(R_{m,\tau} - \bar{R}_m)}{\sum_{\tau=T_0+1}^{T_1} (R_{m,\tau} - \bar{R}_m)^2} \quad \dots(4)$$

$$\hat{\alpha}_i = \bar{R}_i - \hat{\beta}_i \bar{R}_m \quad \dots(5)$$

$$\hat{\sigma}_{\varepsilon_i}^2 = \frac{1}{L_1 - 1} \sum_{\tau=T_0+1}^{T_1} (R_{i,\tau} - \hat{\alpha}_i - \hat{\beta}_i R_{m,\tau})^2 \quad \dots(6)$$

Where \bar{R}_i is the mean value of i^{th} asset and \bar{R}_m is the mean value of market index in estimation period, and L_1 is the length of estimation period. Conditional variance has two aspects; error variance (σ_{ε}^2), and additional variance occurred due to sampling error at α_i and β_i . Sampling error

is common for all event window observations. Real error variance is independent over time yet causes serial correlation for abnormal returns. In practice, “normal” parameters of equation (3) are computed within the estimation period ($T_0 - T_1$) and used in event window ($T_1 - T_2$) to calculate the abnormal returns. Abnormal return of a security can be calculated using the following formula.

$$AR_{i,t} = R_{i,t} - \hat{\alpha}_i - \hat{\beta}_i R_{m,t} \dots(7)$$

The parameters (α_i and β_i) are estimated from the estimation period which is 150 days . The cumulative abnormal return (CAR) for stock i over the event windows fro day T1 through T2 is calculated as follow.

$$CAR_{i,(T_1,T_2)} = \sum_{t=T_1}^{T_2} AR_{it} \dots(8)$$

The t-test for the abnormal return (equation 7) and cumulative abnormal return (equation 8) is calculated as follows.

$$t_{AR_{it}} = \frac{AR_{it}}{s(AR_i)} \dots(9)$$

$$t_{CAR_{i,(T_1,T_2)}} = \frac{CAR_{i,(T_1,T_2)}}{S(CAR)} \dots(10)$$

where $S(AR_i)$ is the standard deviation which can be calculated as follows.

$$s(AR_i) = \sqrt{\frac{1}{M_i - 2} \sum_{t=T_0}^{T_1} AR_{it}^2} \dots(11)$$

$$s(CAR_{i,(T_1,T_2)}) = \sqrt{L_2} s(AR_i) \dots(12)$$

where M is the number of non-missing returns on estimation period, L is the length of event window between T_0 and T_1 which are the beginning and last day of the estimation period.

3.2 Measurement of Market Concentration

Market concentration is measured using Herfindahl-Hirschman Index (HHI). The HHI is calculated using the following formula (Naldi, 2016);

$$HHI = \sum_{i=1}^n S_i^2$$

where S_i is the market share of the i^{th} largest company

This calculation requires the market shares of all the companies in the market. Hence we don't have this information, we compute bounds for the HHI. For this purpose, we adopted the methodology presented in Table 1. HHI below 0.15 indicate non-concentrated, between 0.15 and

0.25 moderately concentrated and indices above 0.25 imply highly concentrated markets (Naldi, 2016).

Table 1: Bounds of HHI

Type	Bound
Lower	$\sum_{i=1}^M S_i^2$
Upper ($R \leq S_M$)	$\sum_{i=1}^M S_i^2 + (1 - \sum_{i=1}^M S_i)^2$
Upper ($R > S_M$)	$\sum_{i=1}^M S_i^2 + S_M^2 Q + (1 - \sum_{i=1}^M S_i - S_M Q)^2$

Where M is the number of firms whose whose market share are known,
 R is the unknown market share
 $Q=R/S_M$, S_M is the market share of smallest firm whose market share is known

Source: (Naldi, 2016)

3.3 Data

This study analyzed sponsorship announcements of firms listed in Borsa Istanbul. Sponsorship announcements for the period between 2011 and 2016 were regarded as events. Events were collected through a review of web sites of Ihlas News Agency, Doğan News Agency, and Public Disclosure Platform. Announcement dates on these web sites were taken as the event dates. This review of the web sites led to 17 events of 10 firms.

To calculate the bounds of HHI we need sales data at firms level and industry level. We gathered data of firm sales from balance sheets published in Public Disclosure Platform. Total industry sales were gathered from Turkish Statistical Institute. We defined industry membership of the firms in the sample using NACE Rev.2 Statistical classification of economic activities in the European Community. Sponsors, types of event, and industry membership were presented in Table2.

Table 2: The Sample of Sponsorship Agreements

Sponsor	Type of event	Industry membership (NACE Rev. 2)
AEFES	Cultural	Manufacture of beverages
ALYAG	Sporting	Manufacture of oils and fats
ARCLK	Sporting	Manufacture of electric domestic appliances
BMEKS	Sporting	Wholesale of computers, computer peripheral equipment and software
BMEKS	Sporting	Wholesale of computers, computer peripheral equipment and software
COLLA	Sporting	Manufacture of soft drinks; production of mineral waters and other bottled waters

CCOLA	Sporting	Manufacture of soft drinks; production of mineral waters and other bottled waters
KUTPO	Sporting	Manufacture of ceramic tiles and flags
TCELL	Sporting	Satellite telecommunications activities
TCELL	Sporting	Satellite telecommunications activities
THYAO	Sporting	Passenger air transport
THYAO	Sporting	Passenger air transport
THYAO	Sporting	Passenger air transport
THYAO	Cultural	Passenger air transport
THYAO	Sporting	Passenger air transport
TKNSA	Sporting	Wholesale of computers, computer peripheral equipment and software
TTKOM	Sporting	Satellite telecommunications activities

4. Analysis and Results

In order to test the hypothesis, at first market concentration was calculated via HHI. Afterwards, abnormal returns (AR) and cumulative abnormal returns (CAR) were tested by using t-tests. Lastly, we compared the AR and CAR of firms operating in non- concentrated and concentrated industries

In order to define the bounds of HHI we applied the formulas presented in Table 1. The lower and upper bounds of HHI for the study sample is presented in Table 3. Most of the markets in the sample (53%) had HHI above 0.25 implying highly concentrated market. 29.4% of the sample represented low concentrated markets with HHI below 0.15. As for 17.6% of the sample lower bound indicates moderately concentrated whereas upper bound indicate highly concentrated markets. Thus, we divided the sample into two as non-concentrated (HHI below 0.15) and concentrated (HHI above 0.15). Accordingly, 29.4% of our sample was in non-concentrated market and 70.6 % was in concentrated market.

Table 3: HHI Values

Type	Industry	Bound	(%)
Low concentrated / non-concentrated			29.4
	Manufacture of oils and fats	$0 < HHI < 0.0025$	
	Manufacture of ceramic tiles and flags	$0.01 < HHI < 0.04$	
	Wholesale of computers, computer peripheral equipment and software	$0.02 < HHI < 0.12$	
Moderately & highly concentrated/ concentrated			17.6
	Satellite telecommunications activities	$0.19 < HHI < 0.37$	
Highly concentrated / concentrated			53
	Manufacture of electric domestic appliances	$0.31 < HHI < 0.49$	
	Passenger air transport	$0.52 < HHI < 0.54$	
	Manufacture of soft drinks; production of mineral waters and other bottled waters	$0.53 < HHI < 0.53$	
Total			100

In order to test whether stock return is affected by announcement of sponsorship agreements, abnormal return (AR) and cumulative abnormal return (CAR) were tested by using t-tests for event window [-5, +5]. There is no widely accepted length of the window we chose a period that is long enough for the stocks to display the possible effects of the events.

Table 4 presents abnormal returns, cumulative abnormal returns and related t-tests. According to the results, in the event window [-5, +5] 13 events have significant AR and CAR before or after the event date. Among these events 6 of them indicated significant positive ARs whereas 7 of them revealed significant negative ARs. These findings showed that most of the sponsorship announcements are associated with stock returns of sponsoring firms. Therefore H1 is supported.

Table 4: The Results of AR values and CAR Values for [-5,+5] Event Window

<i>Date</i>	<i>Event Day</i>	<i>AR (%)</i>	<i>t statistics for AR</i>	<i>CAR (%)</i>	<i>t statistics for CAR</i>
12.15.14	5	-4.444099**	-2.370464	-7.845581	-1.261765
12.20.13	-5	-5.375986**	-2.484347	-5.375986	-0.7490587
1.2.2014	3	3.892552*	1.798823	4.921408	0.6857205
03.20.15	-1	-3.007796*	-1.808851	-6.751285	-1.224178
03.24.16	1	-3.557436***	-2.92436	-2.900582	-0.7189234
03.29.16	4	-2.036127*	-1.673781	-5.719912	-1.417708
9.8.2015	-5	2.182043*	1.795664	2.182043	0.5414132
09.14.15	-1	2.349487*	1.933459	1.930338	0.4789595
01.21.16	-2	2.058641*	1.826572	4.06347	1.087069
01.22.16	-1	-2.140931*	-1.899585	1.922539	0.514322
3.12.13	-3	2.107887*	1.695865	1.671611	0.4054926
03.14.13	-1	5.507381***	4.430871	7.538952*	1.828768
8.8.2014	-5	-2.383278*	-1.892394	-2.383278	-0.5705782

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

After the determination of the AR and CAR, a Mann-Whitney *U* test was conducted to compare the AR and CAR of firms operating in non-concentrated and concentrated industries. The Mann-Whitney *U* test revealed a statistically significant concentration difference in ARs ($U = 6.00$, $p = .009$, $r = 0,61$). On the other hand, there is no statistically significant difference in CARs ($U = 25.00$, $p = 0.646$, $r = 0.13$). Therefore H2 is supported whereas H3 is rejected. Significant abnormal returns are greater for firms in non-concentrated industries (Mdn = .957) than for firms in concentrated industries (Mdn = -.565). Accordingly, in concentrated markets sponsorship announcements created negative abnormal returns. On the other hand, sponsorship announcements created positive abnormal returns in non-concentrated industries.

5. Conclusion

This study investigated the influence of sponsorship announcements on stock returns of sponsoring companies that are listed in Borsa Istanbul and the role of market concentration on this relationship. Using event study methodology, 17 sponsorship announcements for the period of 2011 and 2016 were examined. Our study reveals that sponsorship announcements are associated with stock returns of sponsors. Specifically, announcements of sponsorships created both positive and negative significant abnormal returns. Therefore, we may conclude that investors consider sponsorship announcements. These findings are consistent with the previous studies (Raassens, Wuyts, & Geyskens, 2012; Stephen & Galak, 2012) indicating that financial markets consider marketing related factors.

However, investors' evaluations vary such that they evaluate some sponsorships favorably while evaluate some others negatively. This is consistent with the knowledge that stock returns reflect investors' perceptions of whether the sponsorship can provide future cash flows (Mazodier & Rezaee, 2013). Our study indicated that sponsorship announcements created negative (positive) abnormal returns in concentrated (non-concentrated) markets. Hence investors consider efficiency of a sponsorship in accordance with market concentration. We provide evidence that in non-concentrated markets sponsorship investments are valuable to investors and add value to shareholders by increasing stock prices. This study demonstrates the importance of market structure in the examination of the effect of sponsorship on stock returns.

References

- Baim, D. V., Goukasian, L., & Misch, M. B. (2015). Olympic sponsorships, stock prices, and trading activity. *International Journal of Sport Finance*, 10(2), 175.
- Bharadwaj, S. G., Tuli, K. R., & Bonfrer, A. (2011). The impact of brand quality on shareholder wealth. *Journal of Marketing*, 75(5), 88-104. <https://doi.org/10.1509/jmkg.75.5.88>
- Cho, H., & Hwang, L.-S. (2016). Industry Concentration and Investment Funding: The Importance of Understanding the Market Structure. 4th Paris Financial Management Conference (PFMC 2016), Paris, France.
- Clark, J. M., Cornwell, T. B., & Pruitt, S. W. (2009). The impact of title event sponsorship announcements on shareholder wealth. *Marketing Letters*, 20(2), 169-182. <https://doi.org/10.1007/s11002-008-9064-z>

- Cornwell, T. B., Pruitt, S. W., & Clark, J. M. (2005). The relationship between major-league sports' official sponsorship announcements and the stock prices of sponsoring firms. *Journal of the Academy of Marketing Science*, 33(4), 401-412. <https://doi.org/10.1177/0092070305277385>
- Cornwell, T. B., Roy, D. P., & Steinard, E. A. (2001). Exploring managers' perceptions of the impact of sponsorship on brand equity. *Journal of Advertising*, 30(2), 41-51. <https://doi.org/10.1080/00913367.2001.10673636>
- Fama, E. F. (1991). Efficient capital markets: II. *The Journal of Finance*, 46(5), 1575-1617. <https://doi.org/10.1111/j.1540-6261.1991.tb04636.x>
- Filis, G. N., & Spais, G. S. (2012). The effect of sport sponsorship programs of various sport events on stock price behavior during a sport event. *Journal of Promotion Management*, 18(1), 3-41. <https://doi.org/10.1080/10496491.2012.642769>
- Hasan, I., Hunter, W. C., & Mathis, R. E. (2000). Promotional expenditures, market competition, and thrift behavior. *Journal of Business Research*, 50(2), 177-184. [https://doi.org/10.1016/S0148-2963\(99\)00030-2](https://doi.org/10.1016/S0148-2963(99)00030-2)
- Hou, K., & Robinson, D. T. (2006). Industry concentration and average stock returns. *The Journal of Finance*, 61(4), 1927-1956. <https://doi.org/10.1111/j.1540-6261.2006.00893.x>
- Jacquemin, A., De Ghellinck, E., & Huveneers, C. (1980). Concentration and profitability in a small open economy. *The Journal of Industrial Economics*, 131-144. <https://doi.org/10.2307/2098166>
- Karuna, C. (2007). Industry product market competition and managerial incentives. *Journal of Accounting and Economics*, 43(2), 275-297. <https://doi.org/10.1016/j.jacceco.2007.02.004>
- Khvastunov, O. (2011). *The Impact of Sponsorship on Stock Value*. (Master of Arts), Kyiv School of Economics.

- Kudo, M., Jae Ko, Y., Walker, M., & Connaughton, D. P. (2015). The influence of title sponsorships in sports events on stock price returns. *International Journal of Sports Marketing and Sponsorship*, 16(2), 37-56. <https://doi.org/10.1108/IJSMS-16-02-2015-B004>
- MacKinlay, A. C. (1997). Event Studies in Economics and Finance. *Journal of Economic Literature*, 35(1), 13-39.
- Mazodier, M., & Rezaee, A. (2013). Are sponsorship announcements good news for the shareholders? Evidence from international stock exchanges. *Journal of the Academy of Marketing Science*, 41(5), 586-600. <https://doi.org/10.1007/s11747-013-0325-x>
- Naldi, M. (2016). Concentration in the mobile operating systems market. arXiv preprint arXiv:1605.04761.
- Naldi, M., & Flamini, M. (2014). Interval estimation of the Herfindahl-Hirschman index under incomplete market information. Paper presented at the Computer Modelling and Simulation (UKSim), 2014 UKSim-AMSS 16th International Conference on. <https://doi.org/10.1109/UKSim.2014.66>
- Peterson, P. P. (1989). Event studies: A review of issues and methodology. *Quarterly Journal of Business and Economics*, 28(3), 36-66.
- Pruitt, S. W., Cornwell, T. B., & Clark, J. M. (2004). The NASCAR phenomenon: auto racing sponsorships and shareholder wealth. *Journal of Advertising Research*, 44(3), 281-296. <https://doi.org/10.1017/S0021849904040279>
- Raassens, N., Wuyts, S., & Geyskens, I. (2012). The market valuation of outsourcing new product development. *Journal of Marketing Research*, 49(5), 682-695. <https://doi.org/10.1509/jmr.09.0317>
- Reiser, M. (2012). The sponsorship effect: Do sport sponsorship announcements impact the firm value of sponsoring firms?, Dissertation Thesis, Deutsche Sporthochschule Köln.

- Sharma, V. (2011). Stock returns and product market competition: Beyond industry concentration. *Review of Quantitative Finance and Accounting*, 37(3), 283-299. <https://doi.org/10.1007/s11156-010-0205-0>
- Spais, G. S., & Filis, G. N. (2008). Measuring stock market reaction to sponsorship announcements: The case of Fiat and Juventus. *Journal of Targeting, Measurement and Analysis for Marketing*, 16(3), 169-180. <https://doi.org/10.1057/jt.2008.13>
- Spais, G. S., & Johnston, M. A. (2014). The Evolution of Scholarly Research on Sponsorship: Expectations About the Future of This Research Domain. *Journal of Promotion Management*, 20(3), 267-290. <https://doi.org/10.1080/10496491.2014.908800>
- Stephen, A. T., & Galak, J. (2012). The effects of traditional and social earned media on sales: A study of a microlending marketplace. *Journal of Marketing Research*, 49(5), 624-639. <https://doi.org/10.1509/jmr.09.0401>
- Tripodi, J. A., & Hiron, M. (2009). Sponsorship Leveraging Case Studies—Sydney 2000 Olympic Games. *Journal of Promotion Management*, 15(1-2), 118-136. <https://doi.org/10.1080/10496490902907966>
- Tsiotsou, R. (2011). A stakeholder approach to international and national sport sponsorship. *Journal of Business and Industrial Marketing*, 26(8), 557-565. <https://doi.org/10.1108/08858621111179831>
- Varan, S., & Cerit, A. G. (2014). Concentration and competition of container ports in Turkey: A statistical analysis. *Dokuz Eylül Üniversitesi Denizcilik Fakültesi Dergisi*, 6(1), 91-109. <https://doi.org/10.18613/deudfd.91502>
- Zhang, A., Zhang, Y., & Zhao, R. (2001). Impact of ownership and competition on the productivity of Chinese enterprises. *Journal of Comparative Economics*, 29(2), 327-346. <https://doi.org/10.1006/jcec.2001.1714>