

# Divestiture and Its Market Reaction in a Consolidating Industry: The Global Brewing Industry

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## Abstract

This study provides a perspective on the market performance of divestitures in the global brewing industry. In 2018, the five largest players accounted for 60% of the global beer volume. We analyze to what extent the capital market values divestitures in an industry where players usually seek efficiency gains and growth through mergers and acquisitions. Based on a sample of 61 divestiture intent announcements in the period from 1999–2018, this study shows that publicly listed brewing groups experience significant positive abnormal returns of about 1.4%. We measure the influential effect of success determinants concerning the underlying industry, the divested business, the divestiture structure, and the divestor itself. (JEL Classifications: G14, G34, L25, Q14)

**Keywords:** brewing industry, divestiture, event study, industry consolidation.

## I. Introduction

In 2016, when the world's two largest brewing groups, Anheuser-Busch InBev and SABMiller, merged to form AB InBev, the consolidation of the global brewing industry reached its preliminary peak.<sup>1</sup> It was primarily these two groups and their predecessors that pushed consolidation over the previous decades. Their efforts to gain in scale and profit from synergies led to today's highly consolidated

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<sup>1</sup> Please note that Anheuser-Busch InBev and SAB Miller merged to AB InBev, but Anheuser-Busch beers (such as Budweiser) and Miller beers (such as Miller Lite) are not the same company. The U.S. operations of SABMiller were divested to MolsonCoors as part of the merger.

and globalized brewing industry (Howard, 2014; Mehta and Schiereck, 2012). While the top five players in 1998 accounted for only a quarter of global beer volume, the top five players in 2018 already added up to 60% of global volume. Today's largest player, AB InBev, holds a volume share of more than 30%. Previous research has described in detail the economics of the brewing industry (Poelmans and Swinnen, 2011; Swinnen and Vandemoortele, 2011). With regards to the industrial organization of the industry, it has described the internationalization and consolidation of the brewing industry (Adams, 2006; Elzinga and Swisher, 2011; Howard, 2014; Karrenbrock, 1990), its drivers (Kerkvliet et al., 1998; George, 2011), and its effects (Ashenfelter, Hosken, and Weinberg, 2015; Chalk, 1988; Iwasaki, Seldon, and Tremblay, 2008; Lynk, 1985; Pinkse and Slade, 2004). Research has also examined the market reaction to mergers and acquisitions (M&A) in the brewing industry and found it to be positive (Ebneith and Theuvsen, 2007; Mehta and Schiereck, 2012). Concerning divestitures in the brewing industry, prior literature has only considered the effect of the divestiture of brewer-owned public houses on beer prices (Slade, 1998).

In a consolidating industry, with fewer opportunities and increased antitrust hurdles for M&A, divestitures constitute one of the few options to restructure (Powell and Yawson, 2005). Indeed, the example of AB InBev shows that divestitures are a frequently exercised option in a consolidating industry (Markides, 1992; Powell and Yawson, 2005). Following their announcement to merge, Anheuser-Busch InBev and SABMiller announced the sale of SABMiller's U.S. business and well-known international brands to address potential antitrust concerns proactively. In 2017, AB InBev announced but later canceled the divestiture of two German brands. In 2019, to reduce its debt, AB InBev carved out its Asian-Pacific business and eventually sold its Australian business.

A large body of literature has explored the causes and effects of divestitures (e.g., Brauer, 2006; Kolev, 2016; Lee and Madhavan, 2010). The stock market reaction to the announcement of divestitures has mostly been found to be positive for shareholders of the divesting company, thus, increasing shareholder wealth (cf. Brauer and Schimmer, 2010; Lee and Madhavan, 2010; Vidal and Mitchell, 2018). Further, industry concentration is found to increase the likelihood of large players refocusing on that industry (Markides, 1992; Powell and Yawson, 2005).

The aim of this article is to analyze to which extent capital markets value divestitures in an industry where players usually seek efficiency gains and growth through M&A. To answer this question, we first describe the consolidation of the brewing industry and the divestiture activity of publicly listed brewing groups. We then study the market reaction around divestment announcements and identify success determinants based on a sample of 61 divestiture announcements in the period from 1999–2018.

The results indicate that capital markets react on average positively to divestitures by publicly listed breweries. When examining the drivers of the market reaction to

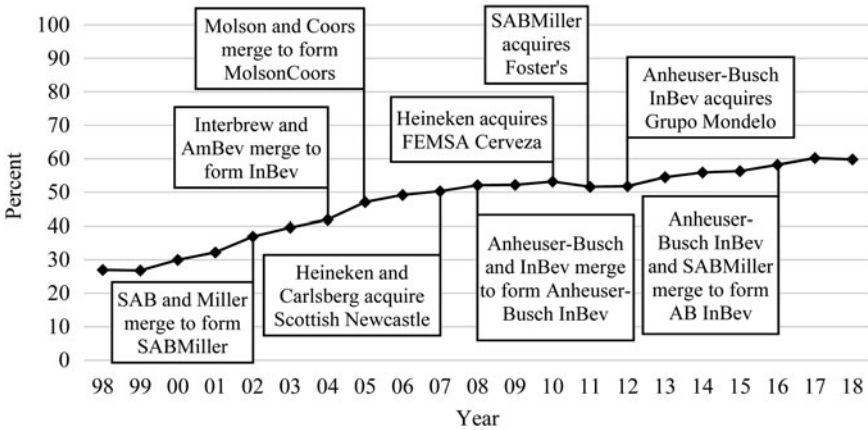
divestiture announcements, we do not indicate a direct effect of consolidation over time. However, the market share of a divestor is found to relate negatively to market reaction, indicating that investors seem to find little additional value creation potential in divestitures of firms that hold a competitive position in a concentrated industry. Further, the results show that within the core brewing operations, the sale of brand licenses for specific countries or regions relates positively to the market reaction. In line with prior literature (Brauer and Schimmer, 2010), we find divestitures that are part of a program consisting of multiple divestitures undertaken for a shared rationale to be rewarded with a superior market reaction. In contrast to stand-alone divestitures, such transactions are strategic rather than tactical (Brauer and Schimmer, 2010). Contrary to expectations, a firm's share of non-beer sales relates negatively to the market reaction. This suggests that the market rewards firms that are more invested in their core brewing operations and naturally more likely to reinvest in their concentrated core industry. It is also supportive of prior literature's consensus that firms earn above-average returns in concentrated industries, and thus are more likely to divest and refocus on their concentrated core industry (Markides, 1992, 1995; Powell and Yawson, 2005).

## II. Consolidation of the Global Brewing Industry

Over the past decades, the brewing industry has experienced a massive consolidation and globalization of operations, at the end of which the largest players have assumed dominant positions across all continents (Howard, 2014; Madsen, Pedersen, and Lund-Thomsen, 2012). The trend in consumer preference towards local products (e.g., Farris et al., 2019) and the rise of "craft beers" in many markets (e.g., Elzinga, Tremblay, and Tremblay, 2015) has not halted this consolidation process. Consolidation was driven through mergers between brewing groups, acquisitions of previously independent brewers, and acquisitions of divested brewing assets. The most recent consolidating event was the merger between Anheuser-Busch InBev and SABMiller in 2016 (see Figure 1). Divestors of brewing assets included brewing groups consolidating their operations, former brewing groups that exited the industry in light of more attractive alternatives (e.g., FEMSA, Whitbread, Bass), and firms not primarily engaged in the brewing industry, such as conglomerates refocusing on their core (e.g., Danone, Philip Morris, Fraser & Neave), and financial firms (e.g., HypoVereinsbank, Nomura). In addition, divestitures were imposed by regulators following consolidating moves. While global brands are rarely divested, such forced divestitures opened opportunities for less globalized players. For example, Asahi seized the chance of the AB InBev merger to increase global reach and acquired the European brands of Pilsner Urquell, Peroni, and Grolsch. Also, as a consequence of decades of M&A, divestitures, and the tendency to internationalize in part through licensing agreements (Karrenbrock, 1990), it is not always the eponymous brewing group that owns a brand in a specific country. For example, the brands of Miller and Anheuser-Busch remain competing brands even after the AB InBev merger. While it is still AB InBev that owns the

Figure 1

## Development of Five-Firm CR over Time and Major Consolidation Events



Note: Decrease of the five-firm concentration ratio (CR) in 2011 was driven by a change in Carlsberg's volume reporting to include the sales of proportionally consolidated entities pro-rata going forward.

Anheuser-Busch brands, the Miller brands were divested as part of the merger along with SABMiller's other U.S. business and are now owned by MolsonCoors.

The result of decades of consolidation is a five-firm concentration ratio (CR) of 60% and a Herfindahl-Hirschman Index (HHI) of 0.12 in 2018 (see Table 1). The CR has more than doubled from 1998 to 2018, and the HHI has increased sixfold (see Table 2). Out of the five largest firms in 1998, four have since then merged to form today's largest player, AB InBev. Their cumulated market share of 20.9% in 1998 increased through both organic growth and further acquisitions to 29.8% in 2018. AB InBev's relative market share is at 2.27, thus, more than double as high as the market share of the second-largest player, Heineken. Heineken has held its position and was able to double its global market share to 13.1% in 2018 compared to 6.1% in 1998.

Over the past decade, the market has also seen the rise of Chinese players. By 2018, three of the ten largest players were headquartered in China and held an overall market share of 10% (see Table 1). The largest of which, China Resources Breweries, gained full independence only after the AB InBev merger when SABMiller's 49% stake in the joint venture with China Resources Enterprises was sold.

### III. Theoretical Background

Most studies show that the market reaction to divestiture announcements are positive (see, e.g., Brauer and Schimmer, 2010; Feldman, Amit, and Villalonga, 2016; Lee and Madhavan, 2010; Owen, Shi, and Yawson, 2010; Vidal and Mitchell, 2018). Nevertheless, a disparity exists regarding the magnitude of the market reaction, and an array of potential drivers have been identified and discussed (cf.

*Table 1*  
**Top Ten Breweries by Beer Volume in 2018**

<i>Rank</i>	<i>Name</i>	<i>Country</i>	<i>Beer Volume (mhl)</i>	<i>Market Share (in %)</i>	<i>Relative Market Share</i>
1	AB InBev	Belgium	567.1	29.8	2.27
2	Heineken	Netherlands	249.5	13.1	0.44
3	China Resources Breweries	China	112.9	5.9	0.20
4	Carlsberg	Denmark	112.3	5.9	0.20
5	MolsonCoors	USA/Canada	96.6	5.1	0.17
6	Tsingtao Brewery	China	80.3	4.2	0.14
7	Asahi	Japan	57.9	3.0	0.10
8	BGI/Castel	France	40.0	2.1	0.07
9	Yanjing	China	38.0	2.0	0.07
10	Anadolu Efes	Turkey	31.8	2.0	0.06
Total market size			1905.0	100.0	
Five-firm CR				59.8	
Five-firm HHI				0.12	
Ten-firm CR				72.8	
Ten-firm HHI				0.12	

*Notes:* Total market size and Yanjing volume obtained from the *Barth Report 2018/2019*, volumes for other breweries gathered manually from annual reports and other reportings. Shown values include pro-rata volumes from joint ventures and associated firms.

Brauer and Schimmer, 2010; Vidal and Mitchell, 2018). Next, we provide the theoretical background for potential success determinants of divestitures in the global brewing industry concerning industry characteristics, divested business characteristics, divestiture structure, and firm characteristics.

### *A. Industry Characteristics*

Concentrated industries have special characteristics and provide a unique competitive landscape for the involved firms (see, e.g., Chang and Singh, 1999; Markides, 1995). Firms in such industries are likely to refocus on their attractive core industry to increase exposure to such benefits (Markides, 1992). Firms may also divest from concentrated industries when they are unsatisfied with their market position and have little hope to improve that position (Hopkins, 1991). In both cases, divestitures driven by the consolidation of an industry should be valued positively by investors and increase the market reaction over time.

Divestiture research has relied on market share to capture a firm's commercial position and competitive performance (Chang and Singh, 1999; Çolak and Whited, 2007; Haynes, Thompson, and Wright, 2002). Market leaders benefit from their market position in their core industry and have little reason to divest from that industry (Hopkins, 1991). When a divestiture threatens the competitive position of a market leader, it should result in an adverse market reaction. In contrast, a firm should benefit more from exiting peripheral and less strategic businesses (Haynes, Thompson, and Wright, 2003; Markides, 1992).

*Table 2*  
**Top Five Breweries by Share of Beer Volume in 1998, 2003, 2008, 2013, and 2018**

<i>1998</i>	<i>%</i>	<i>2003</i>	<i>%</i>	<i>2008</i>	<i>%</i>	<i>2013</i>	<i>%</i>	<i>2018</i>	<i>%</i>
Anheuser-Busch	10.0	Anheuser-Busch	10.3	Anheuser-Busch InBev	20.3	Anheuser-Busch InBev	20.2	AB InBev	29.8
Heineken	6.1	SABMiller	8.9	SABMiller	12.0	SABMiller	12.4	Heineken	13.1
Miller	3.8	Interbrew	8.1	Heineken	8.9	Heineken	9.9	China Resources	5.9
South African Breweries	3.6	Heineken	6.7	Carlsberg	7.0	Carlsberg	6.1	Carlsberg	5.9
Interbrew	3.5	Carlsberg	5.5	Tsingtao Brewery*	3.0	Tsingtao Brewery*	4.4	Molson Coors	5.1
Five-firm CR	27.0		39.6		51.0		53.0		59.8
Five-firm HHI	0.02		0.04		0.07		0.08		0.12

*Notes:* Market share calculated based on total market size obtained from *Barth Reports*, volumes for breweries gathered manually from annual reports and other reportings; underlying beer volume includes pro-rata volumes from joint ventures and associated firms.

\* China Resources would assume fifth place already both in 2008 and 2013; however, part of its volume was already included on a pro-rata basis in SABMiller's volume, which held a 49% stake until 2016.

M&A activity by alcoholic beverage producers and especially the brewing industry has been under intensive scrutiny by competition authorities (e.g., Slade, 2011; Rizzo, 2019). Divestitures are also a popular instrument to regulate industries and execute antitrust policy in response to M&A (Brauer, 2006; Shleifer and Vishny, 1991). Such involuntary divestitures have been linked to adverse capital market reactions (e.g., Wright and Ferris, 1997). To account for this, we consider whether divestitures were announced to comply with direct antitrust pressure (or in anticipation of obedience to such) and expect such divestitures to result in less favorable market reactions.

### ***B. Divested Business Characteristics***

Brewers have grown, either from legacy or acquisitions, a portfolio of businesses not limited to core brewing operations and attractive geographies. They likely hold brewing assets of little geographic relevance, as well as businesses that are not or only distantly related to brewing. Thus, we consider the divested business relatedness to the core and their geographic scope.

Firms diversify their business to benefit from, for example, putting excess resources to use, greater operating efficiency, a more efficient debt capacity, or reducing their taxes (Berger and Ofek, 1995; Markides, 1992). However, marginal benefits decline as diversification increases, while marginal costs from inefficiencies increase (Hoskisson and Hitt, 1994; Markides, 1992). The more related a firm's diversification is to its core, the easier is the exploitation of synergies (Bergh, 1995, 1998; Chang and Singh, 1999). The sale of unrelated businesses has been linked to higher performance than that of related businesses (Bergh, 1995, 1998; Depecik, van Everdingen, and van Bruggen, 2014). We differentiate between core beer/brewing operations, beer-related operations, and unrelated operations.<sup>2</sup>

Firms diversify geographically to overcome home-market disadvantages, tap opportunities for higher returns, and ultimately reduce their risk of failure (Hoskisson and Hitt, 1994). However, costs of complexity eventually exceed benefits (see, e.g., Hitt et al., 2006; Hoskisson and Hitt, 1994). While firms refrain from divesting units in their home market, they are more willing to shed distant foreign units (Landier, Nair, and Wulf, 2009). The market reaction to both foreign and domestic divestitures is positive (Sicherman and Pettway, 1992). Given the difficulty of differentiating between domestic and foreign markets in a globally operating industry, we distinguish between global brands, their brand licenses for specific countries or regions, and local/other assets. Firms will likely divest global and often strategic brands only if forced to do so, likely provoking an adverse market reaction. Brand licenses or local/other assets are less relevant and easier to disentangle. Consistently, in a study on brand divestments, Depecik, van Everdingen, and van

<sup>2</sup>Beer-related operations include distribution, pubs, or retailers, all of which historically was part of a brewery's core. In line with prior research, we expect that the divestiture of unrelated units should be received more positively than the divestiture of core or beer-related units.

Bruggen (2014) find only the divestiture of local or regional brands to have a positive effect on firm value. The divestment of such distant assets unlocks resources to be reinvested in core businesses. Further, the divestiture of brand licenses should be more likely to spark capital market interest compared to local/other assets. Thus, we expect it to be valued positively.

### ***C. Divestiture Structure***

Divestitures do often occur as part of a series of multiple transactions (Berger and Ofek, 1999; Haynes, Thompson, and Wright, 2002; Hoskisson and Johnson, 1992; Markides, 1995). A structured series of strategically consistent divestitures that extends over a prolonged period—a divestiture program—signals commitment and might be therefore significantly different than stand-alone/single divestitures. Such commitments suggest a strategic rather than a tactical rationale (Brauer and Schimmer, 2010). Both strategic divestitures (Montgomery, Thomas, and Kamath, 1984) and strategically consistent decisions have been linked to superior performance compared to their respective opposites (Robinson and Pearce, 1988). Research has also found that experienced divestors earn higher announcements returns (Humphery-Jenner, Powell, and Zhang, 2019) and argued that divestiture programs facilitate learning and its application in future divestitures (Brauer and Schimmer, 2010). In line with prior literature, we expect program divestitures to be superior compared to non-program divestitures.

### ***D. Firm Characteristics***

We also control at the firm-level of the divestor: firm current ratio, firm size, firm leverage, and firm diversification.

The higher the current ratio, the level of slack resources, the lower should be the financial constraints a firm faces, and thus also the necessity to divest (Feldman, Amit, and Villalonga, 2016; Kolev, 2016; Montgomery and Thomas, 1988; Owen, Shi, and Yawson, 2010). If a firm divests despite a high current ratio, the divestiture is likely driven by a strategic motive. Such divestitures have been found to result in superior performance (Montgomery, Thomas, and Kamath, 1984).

Research shows that firm size increases a firm's likelihood to divest (Feldman, Amit, and Villalonga, 2016; Kolev, 2016; Owen, Shi, and Yawson, 2010; Shleifer and Vishny, 1992). Large firms have a large asset base, and thus more flexibility to choose which assets to divest (Shleifer and Vishny, 1992). However, size also creates complexity and inefficiencies, eventually undermining corporate control (Kolev, 2016).<sup>3</sup>

Leverage has been shown to increase the likelihood to divest (Feldman, Amit, and Villalonga, 2016; Haynes, Thompson, and Wright, 2003; Owen, Shi, and Yawson,

<sup>3</sup>Literature has also employed firm size as a control variable when examining the wealth effects of divestiture, but the results do not show a significant effect (e.g., Brauer and Schimmer, 2010).



2010). For financially constrained firms, divestitures are an attractive financing source (Lang, Poulsen, and Stulz, 1995). Studies have linked firms that divest to repay a debt to a more favorable market reaction (Lang, Poulsen, and Stulz, 1995). The positive effect of effective lender monitoring has been highlighted (Lasfer, Sudarsanam, and Taffler, 1996). However, research has also argued that high leverage firms have less negotiating power when selling assets and found returns to be lower for those firms (Hearth and Zaima, 1984; Sicherman and Pettway, 1992).

Divestiture research has associated a firm's diversification level with the likelihood to divest and wealth effects gained from its announcement (e.g., Berger and Ofek, 1999; Dittmar and Shivdasani, 2003; Haynes, Thompson, and Wright, 2003; Kolev, 2016). Similar to firm size, high diversification may indicate the complexity and potential control issues (Ravenscraft and Scherer, 1987). Further, a highly diversified firm is less dependent on a single division facilitating the divestiture of such units (Kolev, 2016).

#### IV. Sample and Methodology

In the following, we describe our dataset, the variables, and the applied methodology.

##### A. Sample

Divestitures are obtained from Thomson Reuters' SDC database and needed to fulfill the following criteria to be included in the dataset:

1. The transaction was flagged as a divestiture deal.
2. The divestiture actually took place and thus showed a "completed" deal status.
3. The divestiture was announced between January 1, 1999 and December 31, 2018.
4. The divestiture reduced the holding to below 50% from a previous majority holding or a 50% stake.<sup>4</sup>
5. The ultimate parent's primary standard industrial classification (SIC) needed to be 2082, "Manufacturing of malt beverages." Non-beer ultimate parents within that industry, for example, distillers or falsely-classified transactions, were excluded manually.<sup>5</sup>
6. The ultimate parent was a publicly listed company at the time of the divestiture.

<sup>4</sup>The latter was included to account for the fact that the large breweries frequently engage in joint ventures as part of their brand and licensing strategy.

<sup>5</sup>Exceptions were made in two cases. The sample includes Heineken, whose ultimate parent is the holding company L'Arche Green NV with the primary SIC of 6799, "Investors not elsewhere classified." Further, the sample includes transactions that mark the exit of a firm's beer engagement, for example, Whitbread and Bass. In addition, we relied on segment sales data from *Worldscope* to validate that beer constituted a firm's primary business as the segment with the most sales. As a consequence, Hitejinro (most sales: distilled beverages), the Swallow Group (most sales: hotels), and Wolverhampton & Dudley (most sales: retail outlets) were excluded.

The transaction value had to be at least USD 50M to avoid the inclusion of small and marginal transactions unlikely to attract sufficient shareholder attention. This is in line with prior literature (e.g., Owen, Shi, and Yawson, 2010). This left us a sample of 83 divestitures by 23 brewing groups.<sup>6</sup> Figure 2 shows the development of divestitures against the development of the industry's five-firm concentration.

Factiva was employed to verify the announcement dates. In line with prior research, we tracked for each divestiture the announcement of the intent to divest and of the transaction price (e.g., Afshar, Taffler, and Sudarsanam, 1992). Finally, we accounted for confounding effects in the five-day window around the announcement. After controlling for confounding events, 66 divestitures and 86 announcements of brewing groups remained in the sample. Out of these 86 announcements, 38 announced both intent and price, 23 only the intent to divest, and 25 the price following a previous intent announcement. The analysis of this study focuses on the 61 initial intent announcements.<sup>7</sup>

## B. Variables

The data was obtained from Thomson Reuters' Datastream, Worldscope, and SDC. The market share was computed based on the *Barth Report* and annual reports.

### (1) Dependent Variable

*Divestiture market returns.* We measure the cumulative abnormal returns (CAR) as a proxy for the success of a divestiture. A favorable market reaction in terms of a stock price increase reflects a positive change in investors' beliefs regarding the firm's future. To consider the sensitivity to outliers and avoid distortions of results, we also winsorized the CAR (-1, +1) at the 2.5% and 97.5% levels (e.g., Owen, Shi, and Yawson, 2010).

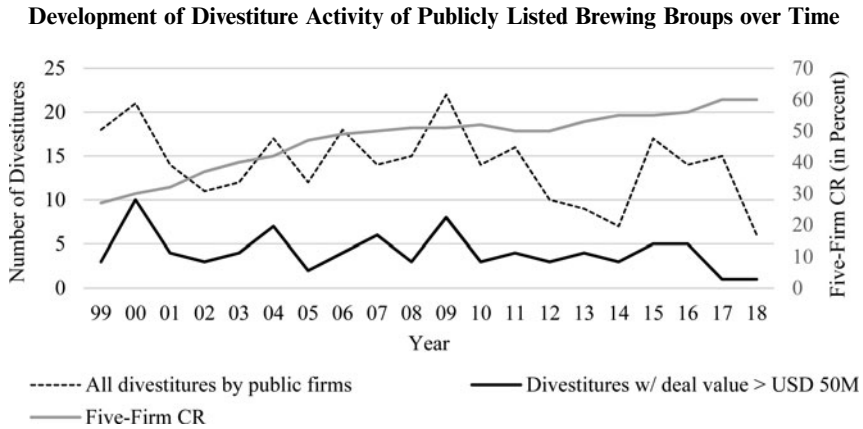
### (2) Independent Variables

*Industry—2009–2018.* We compared the first to the second half of the observation period to account for the consolidation of the brewing industry over the past two decades. This is in line with prior research on the brewing industry (Mehta and

<sup>6</sup>The number excludes divestitures that were duplicates or falsely labeled as divestitures by SDC; for example, both the divestor and acquirer were subsidiaries of the same parent company, the divestor held only a minority interest in the sold assets, or a transaction was falsely allocated to a parent. The full list of divestitures announcements is available on request.

<sup>7</sup>To portray divestiture activity in the brewing industry in its entirety, we also consider the divestiture of beer operations by parents not primarily engaged in brewing. We apply the criteria of the primary SIC to the divested unit and again require the deal value to be greater than USD 50M. This resulted in 12 divestitures by 10 firms. In total, 16 announcements were made regarding these divestitures. After controlling for confounding events, 14 announcements for 11 divestitures remained. The cumulative average abnormal returns for these announcements, while on average positive, is found to be insignificant.

Figure 2



*Note:* Decrease of five-firm CR in 2011 driven by a change in Carlsberg's volume reporting to include the sales of proportionally consolidated entities only pro-rata.

Schiereck, 2012). The variable takes a value of 1 if a divestiture was undertaken in the second half, the years 2009–2018, and 0 otherwise.

*Industry—Market share top 5.* The variable takes a value of 1 if the divestor was one of the five largest brewing groups by market share at the time of divestiture, and 0 otherwise.

*Industry—Antitrust pressure.* The variable takes a value of 1 if press releases and secondary press coverage stated that a divestiture, in many cases of acquired units, was undertaken to comply with direct antitrust pressure or in anticipation of obedience to such, and 0 otherwise.

*Relatedness.* To capture the relatedness of assets, we differentiated between core beer/brewing (brewing, beer brands, or licenses for specific regions), beer-related (pre-production, raw materials, distribution, wholesale, and retail operations), and unrelated assets using dummy variables.

*Geographic scope.* We used dummy variables to differentiate divested assets in *global brands*, their *brand licenses* for specific countries or regions, and *local/other assets*.

*Structure—Program.* The variable takes a value of 1 in case the divestiture could be related to a divestiture program, and 0 otherwise. A divestiture that is part of a program is a divestiture that is part of a series of multiple divestitures undertaken sharing a single rationale. This is in contrast to stand-alone/single divestitures. We assumed a two-fold approach and considered both the individual announcements and divestiture program announcements through press releases and secondary press coverage. We required programs to have been publicly known at the time of the announcement.

*Firm—Current ratio.* The level of slack resources was measured as the previous year's current assets over current liabilities (Feldman, Amit, and Villalonga, 2016).

*Firm—Size.* The size of a firm was calculated as the natural logarithm of the previous year's total assets (Bergh and Sharp, 2015; Brauer, Mammen, and Luger, 2017).

*Firm—Leverage.* A firm's indebtedness was operationalized as the previous year's debt scaled by total assets (Berger and Ofek, 1999; Dickerson, Gibson, and Tsakalotos, 1997; Haynes, Thompson, and Wright, 2002).

*Firm—Diversification.* The diversification of a firm was measured as the share of non-beer sales.<sup>8</sup>

### **C. Methodology**

In line with prior divestiture research (e.g., Dittmar and Shivdasani, 2003; Owen, Shi, and Yawson, 2010), we applied the standard market model event study methodology to measure the short-term market return of divestiture announcements. Event studies help to identify whether investors react positive or negative on average to divestiture announcements, but they do not show whether this effect is due to the capital received from the divestiture or the strategic use of the purpose.<sup>9</sup> The firm's market index has been used as the benchmark. The estimation window covered one trading year (255 days) prior to 30 days before the announcement date (e.g., Brauer and Wiersema, 2012; Depecikc, van Everdingen, and van Bruggen, 2014). The statistical significance of returns was tested applying the parametric Patell (1976) z-test and cross-sectional z-test as proposed by Boehmer, Musumeci, and Poulsen (1991), as well as the non-parametric generalized sign test according to Cowan (1992).

To identify the influential effects of the success determinants on the market reaction, we ran a multivariate ordinary least squares regression (OLS) with the CAR on the three days surrounding the announcement as the dependent variable.

## **V. Results**

This section presents the findings of the event study analysis and the OLS.

<sup>8</sup>For firms where sales per segment were not available through Worldscope, annual reports were consulted to approximate non-beer sales based on volume figures.

<sup>9</sup>A divestiture is the sale of future cashflows from this business unit. Positive announcements returns indicate that investors believe that selling this business unit has a higher benefit for the company than the future cashflows from this business unit. As we here compare two cashflows, it is not possible to completely differentiate where the increased performance finally comes from.

## A. Event Study Analysis

Table 3 shows the results of the event study. The 61 divestiture announcements that announced intent to divest are associated with a positive market reaction. In the  $[-1,+1]$  event window, the abnormal returns are 1.46% for the 61 divestiture announcements. The cumulative average abnormal return (CAAR)  $(-1,+1)$  after winzoring remains positive with an abnormal return of 1.37%, highly significant according to all test statistics. Splitting the sample in divestiture intent announcements, including the price and announcements showing the intent only, we find again positive abnormal returns of 1.66% and 1.12%, respectively. Both parametric and non-parametric tests show the significance of these returns. An unreported two-tailed test finds a significant difference between divestiture intent only and divestiture price only announcements.<sup>10</sup> The 25 announcements that only convey the transaction price were found to yield negative and insignificant returns.

## B. Cross-Sectional Regression Results

Next, we analyze the determinants on the market reaction to the divestiture intent announcements in OLS regressions with a winsorized CAR  $(-1,+1)$  as the dependent variable. The results are presented in Table 4.

Model 1 shows the effect of the control variables—the firm characteristics. Only firm diversification is found to have a significant effect. It relates negatively to the market reaction. This effect is persistent throughout the models.

Models 2 through 5 test the effect of industry characteristics. Industry consolidation itself is not found to affect the market reaction. Holding a top-five market position relates negatively to the realized abnormal returns. Antitrust pressure is not found to affect the market reaction. Model 5 tests all three industry variables concurrently; the significant negative effect of a top-five market position persists.

Characteristics of the divested business are tested in Models 6 through 8. Relatedness in terms of both core beer/brewing or unrelated assets is not found to have a determining effect. Concerning geographic scope, the divestiture of brand licenses for specific countries or regions is found to have a statistically significant and positive effect on the measured market reaction. The divestiture of global brands is not found to have an influential effect.<sup>11</sup> Model 8 tests all relatedness and geographic scope variables. The significant effect of the divestiture of brand licenses is robust in this setting. When including the geographic scope variables, relatedness

<sup>10</sup> While further analysis of this article focuses solely on divestiture intent announcements, we provide additional analyses of divestiture price announcements in the brewing industry in an extended version of this study.

<sup>11</sup> It should be noted that the final sample tested includes only three global brand divestitures, given that many of the few divestitures fulfilling that criteria were found to be announced near other confounding events.

Table 3  
AAR and CAAR of Divestiture Announcements

Sample	Event Window	AAR/ CAAR	Winsorized CAAR	Patell (1976) z-Test	Boehmer, Musumeci, and Poulsen (1991) z-Test	Positive	Cowan (1992) GenSign z-test
Divestiture intent announce- ments N = 61	Day -1	0.22	—	—	—	55.74	—
	Day 0	0.67	—	***	**	57.38	—
	Day +1	0.56	—	**	**	63.93	**
	-1 to +1	1.46	1.37	***	***	73.77	***
Divestiture intent and price announcements N = 38	Day -1	0.26	—	—	—	52.63	—
	Day 0	0.61	—	***	—	55.26	—
	Day +1	0.79	—	***	***	68.42	**
	-1 to +1	1.66	1.49	***	***	78.95	***
Divestiture intent only announcements N = 23	Day -1	0.15	—	—	—	60.87	—
	Day 0	0.78	—	***	*	60.87	—
	Day +1	0.18	—	—	—	56.52	—
	-1 to +1	1.12	1.18	***	**	65.22	—
Divestiture price announce- ments N = 63	Day -1	0.11	—	—	—	49.21	—
	Day 0	0.23	—	*	—	52.38	—
	Day +1	0.37	—	**	—	58.73	*
	-1 to +1	0.71	0.60	***	*	61.90	**
Divestiture intent and price announcements N = 38	Day -1	0.26	—	—	—	52.63	—
	Day 0	0.61	—	***	—	55.26	—
	Day +1	0.79	—	***	***	68.42	**
	-1 to +1	1.66	1.49	***	***	78.95	***
Divestiture price only announcements N = 25	Day -1	-0.11	—	—	—	44.00	—
	Day 0	-0.34	—	—	—	48.00	—
	Day +1	-0.28	—	—	—	44.00	—
	-1 to +1	-0.73	-0.74	—	—	36.00	—

Notes: The table shows abnormal returns in percent using the event study methodology. The estimation was based on a one-year window (255 days) prior to 30 days before the announcement. Positive denotes the share of events exhibiting positive AR and CAR. Statistical significance was tested using the Patell (1976) z-test, the cross-sectional z-test as proposed by Boehmer, Musumeci, and Poulsen (1991), and the generalized sign test, according to Cowan (1992).

\*p < 0.10, \*\*p < 0.05, \*\*\*p < 0.01

Table 4  
Results of OLS Regressions with CAR (−1,+1) as Dependent Variable

Model	1	2	3	4	5	6	7	8	9	10
Industry—2009–2018	—	0.00 (0.01)	—	—	0.00 (0.01)	—	—	—	—	—
Industry—Market share top 5	—	—	−0.02** (0.01)	—	−0.02** (0.01)	—	—	—	—	−0.01* (0.01)
Industry—Antitrust	—	—	—	0.01 (0.01)	0.01 (0.01)	—	—	—	—	—
Relatedness—Core	—	—	—	—	—	0.00 (0.01)	—	−0.02** (0.01)	—	−0.01 (0.01)
Relatedness—Unrelated	—	—	—	—	—	−0.01 (0.01)	—	−0.01 (0.01)	—	—
Geography—Global	—	—	—	—	—	—	0.01 (0.01)	0.02 (0.01)	—	—
Geography—Brand license	—	—	—	—	—	—	0.02** (0.01)	0.04*** (0.01)	—	0.03*** (0.01)
Structure—Program	—	—	—	—	—	—	—	—	0.01** (0.01)	0.02** (0.01)
Firm—Current ratio	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.02 (0.01)	0.01 (0.01)	0.02 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Firm—Size	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Firm—Leverage	−0.04 (0.03)	−0.04 (0.03)	−0.04 (0.03)	−0.04 (0.03)	−0.03 (0.03)	−0.05 (0.03)	−0.05* (0.03)	−0.05* (0.03)	−0.06* (0.03)	−0.07** (0.03)
Firm—Diversification	−0.05* (0.02)	−0.05* (0.02)	−0.07*** (0.03)	−0.05* (0.02)	−0.08*** (0.03)	−0.04 (0.03)	−0.04* (0.02)	−0.05** (0.02)	−0.05** (0.02)	−0.07*** (0.03)
Constant	0.04 (0.05)	0.04 (0.06)	0.01 (0.05)	0.04 (0.05)	0.01 (0.06)	0.04 (0.05)	0.06 (0.05)	0.06 (0.05)	0.06 (0.05)	0.05 (0.05)
N	61	61	61	61	61	61	61	61	61	61

Continued

Table 4  
Continued

<i>Model</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
R <sup>2</sup>	0.17	0.17	0.24	0.18	0.25	0.20	0.28	0.29	0.24	0.39
Adj. R <sup>2</sup>	0.11	0.10	0.17	0.10	0.15	0.11	0.20	0.18	0.17	0.29
F-value	3.26**	2.84**	3.59***	2.57**	2.68**	2.85**	3.72***	3.34***	3.42***	4.27***
Root MSE	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Ø VIF	1.23	1.27	1.77	1.21	1.67	1.50	1.25	1.72	1.26	1.86

*Notes:* The dependent variable is the CAR (-1,+1) based on a MM. The estimation window covered one year (255 days) prior to 30 days before the announcement. Announcements with confounding events were excluded, the top and bottom 2.5% based on the CAR (-1,1) were winsorized. Robust standard errors are reported in parentheses.

\*p < 0.10, \*\*p < 0.05, \*\*\*p < 0.01



to the core is found to have a diminishing effect on the market reaction to a divestiture announcement. Among the control variables, firm diversification and firm leverage are found to relate negatively to the market reaction in Models 7 and 8.<sup>12</sup> Leverage is a proxy to measure whether a firm is financially constrained. Firms that are financially constrained might use a divestiture as a fire sale opportunity. The negative effect of leverage indicates that investors do not consider such firms to benefit from the divestiture itself. Such high leveraged firms should rather benefit from the cash inflows of the sale.

The influential effect of the divestiture structure is tested in Model 9. The affiliation with a previously announced divestiture program is found to have a significantly positive effect on the market reaction. The negative relation of both firm diversification and firm leverage to the market reaction is robust.

Model 10 tests all those determinants concurrently, for which significance was established in the previous models. The negative effect of a top-five market position, the positive effect of divesting brand licenses, and the positive effect of an affiliation with a divestiture program persist. Relatedness to the core is not found to have a significant effect. The negative relation of both firm diversification and firm leverage to the market reaction is robust. Model 10 is also found to achieve the highest fit of Models 1 through 10.

To control for the robustness of the model, we varied the dependent variable from the winsorized CAR (-1, 1) to a non-winsorized CAR (-1,1) and CAR (-1,2). The results are robust. Further, we varied the variables to capture consolidation over time and re-ran Model 2 with four instead of two time segments. When including variables for 2004–2008, 2009–2013, and 2014–2018, neither of those is found to have a significant effect on the market reaction. In another variation of the analyses, we included a dummy to control for differences in announcements that included a transaction price in contrast to pure intent announcements. No significant effect on the market reaction was observed.

## VI. Conclusion

The primary purpose of this study is to examine the capital market reaction to divestiture announcements and its determinants in the consolidating brewing industry—an industry where players usually seek efficiency gains and growth through M&A. As such, it provides evidence from divestitures in the consolidating brewing industry and contributes to both extant research on divestitures and research on the brewing industry.

The results demonstrate that capital markets generally value divestitures in the brewing industry. Moreover, our findings show that investors seem to find little additional value

<sup>12</sup>The dummy variables *Relatedness—Related* and *Geography—Local/Other* were automatically omitted because of collinearity with the other respective relatedness and geographic scope dummy variables.

creation potential in divestitures of firms that already hold a competitive position in a concentrated industry. Prior literature has argued that firms with a high market share are likely to profit more from an increase in focus through divestiture (Haynes, Thompson, and Wright, 2003). In contrast, in this setting, the capital markets seem to consider divestitures by market leaders on average to be detrimental to future firm value and penalize such moves. Further, neither the consolidation of the industry over time nor antitrust pressure is found to relate significantly to the market reaction.

The study supports the understanding that capital markets value consistency and structure in divestitures. More specifically, the affiliation with a structured divestiture program is found to relate significantly positively to the market reaction. This corroborates the findings of Brauer and Schimmer (2010) and stresses the importance of considering structural characteristics when examining divestitures.

Unanticipatedly, the share of non-beer sales relates negatively to the market reaction. The market seems to reward firms that are more invested in their core brewing operations and thus are naturally more likely to reinvest in their concentrated core industry. This is supportive of prior literature's consensus that returns in concentrated industries are above-average and that firms in these industries are also more likely to divest and refocus on their attractive, concentrated core industry (Markides, 1992, 1995; Powell and Yawson, 2005). Concerning the other tested firm characteristics, we do not find evidence that it is related to the market reaction.

For managers in the brewing industry, this study highlights how capital markets perceive divestitures in their industry. The results show that they react more critically to divestitures by market leaders and diversified firms. This implies that market leaders and more diversified firms are well-advised to provide detailed reasoning of their motive, their reinvestment strategy, and the implications for their brewing business to avoid prejudgment. While divesting from the core is often rightly argued to entail negative implications for performance, the positive effect of divesting regional brand licenses shows that capital markets effectively differentiate based on the geographic scope of core operations. The positive effect of divestitures undertaken as part of a divestiture program stresses the importance of divesting in a structured and strategically consistent manner.

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