Article

What Are the Reasons Behind the Economic Performance of the Hungarian Beer Industry? The Case of the Hungarian Microbreweries

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Abstract: In terms of absolute alcohol consumption and total quantity consumed, beer is the most consumed alcoholic beverage in Hungary. The Hungarian beer industry is highly concentrated, the three largest, foreign-owned companies ruled the market for almost 90% of total turnover in 2009–2017. The study investigates the factors influencing the Hungarian beer industry's economic performance, special attention given to the microbreweries. The analysis applied panel-data linear models for the period of 2009–2017. The financial performance of breweries is represented by companies' turnover, Earnings Before Interest and Taxes (EBIT) and profit along with explanatory variables of the age of brewery, Social Media activity, geographical location, direct sales, and impact of tax reduction. Breweries with direct sales channels reached significantly higher sales, EBIT and profit. Breweries situated in or close to the capital are the most profitable due to the higher demand for high-quality beer, in contrast, the distance from the capital had a negative impact on the firms' performance. The Social Media activity–often used as the only promotion channel for the microbrewery–positively impacts the brewery's profitability. Finally, tax reduction for small breweries introduced in 2012 had the most significant positive influence on the industry.

1. Introduction

1.1. Introduction

As the most popular alcoholic beverage globally, the beer industry is significant to many countries' economies. Breweries are producing worldwide, and beer is the most popular alcoholic beverage for consumption in numerous countries. The beer industry has in annual revenues of 294.5 billion USD globally [1]. The top beer exporting country in the world is Mexico, which accounted for 18% of the global export share, followed by the Netherlands, Germany and Belgium. China and the United States lead global beer production with more than 35% share of the total output, followed by Brazil, Russia, and Germany in the row. Globally, the biggest importers are the USA (with more than 34% share of the total import), United Kingdom (5.82%), France (5.34%), Italy (5.13%) and Canada (4.74%). Between 2008 and 2017, Namibia had the best comparative advantages in beer trade, followed by Jamaica, Mexico, Kenya, Serbia, Portugal and the Netherlands. The biggest beer exporters (Mexico and Netherlands in particular) also had comparative advantages [1,2]. In 2018, the Czech Republic, Austria, Germany, Romania and Poland had the highest per capita beer consumption rate globally [3].

Microbreweries have their new renaissance worldwide in recent decades. As defined by the Brewers Association [4], microbreweries produce less than 15,000 barrels of beer per year and sell 75 per cent or more of their beer off-site. The craft beer revolution began in the United States, after the strict alcohol ban and, since 1978, the Federal Law has allowed

home brewing. McCullough et al. [5] examined the relationship between home brewing legislation and the beer industry in the United States and found that the new legislation significantly impacted the industry's structure and growth. Previous studies suggested that craft beers have spread around the world for very different reasons. More and more conscious consumers are looking for a special taste or a solution for ethical issues, including sustainability. Such phenomena may have led to the emergence of breweries that favour the long-term economic, environmental and social benefits associated with sustainability [6]. In a certain way, microbreweries might be considered social innovations as their development is heavily determined by the local conditions. Therefore, instead of the scaling up mechanism, these start-up enterprises have to focus on the adaption to the local context [7]. Microbreweries are low-volume, high-margin businesses that contribute to local communities through job opportunities and skilled employment, however, some critical issues may be the microbreweries' longevity and stability, as well as their dependence on customers' preferences in terms of localism. Compared to large breweries, in terms of environmental aspects, microbreweries may be more environmentally friendly in transport, at least in the case of beer produced with local ingredients and delivered to local markets. On the other hand, microbreweries might be less efficient in terms of production [8]. US examples also showed that close cooperation among nascent craft breweries is typical, mainly in the field of process technology development, procurement, inbound logistics and marketing. This also reinforces that these start-ups should consider each other not only as competitors [9].

Hart [10] used an experimental approach to measure consumers' willingness to pay for locally produced beer produced by an independent brewery. Results confirmed that consumers prefer these beers and are willing to pay more for these products.

The book by Garavaglia and Swinnen [11] gave a comprehensive overview of the economic perspectives of the craft beer inside the global beer industry and explored the craft beer market in different countries. Depenbusch et al. [12] found that the trend of craft beers in Germany is less dynamic than in other countries. They argued that the German beer market's low concentration might explain why new entrants are less common than in other countries. Weersink et al. [13] came to that conclusion that the beer sector has changed dramatically in Canada, over the last 30 years per capita beer consumption has fallen by about a third, and market share has shifted from light-bodied lager beer to craft beers differentiated by several taste and process attributes. Sales of craft beer have increased decuple in the last decade and now account for 6% of the market. The total number of breweries now exceeds 640, and a clear majority of them are considered microbreweries.

Other country-specific studies analyse the craft beer industry from different perspectives. Fastigi et al. [14] focused on a particular group of agricultural breweries in Italy, Corsini et al. [15] examined environmental performance in the craft beer industry, also in Italy. The findings of Alfeo et al. [16] showed that the Sicilian craft beer industry is characterised by an essential dependence on the imported malts, hops and yeasts and the examined breweries use just limited amount of local raw materials. Furthermore, the characteristics of the processing plants and the sales channels seem to influence the products' diversification and the Sicilian craft breweries' turnover levels. Koch and Sauerbronn [17] analysed the craft beer consumption in Brazil and realised that "Drink less, drink better" is the main motto of the Brazilian craft beer consumers, who show commitment to enjoyment and responsibility while rejecting mass-produced beer and antisocial behaviours. Meyerding et al. [18] focused on consumer preferences for beer attributes in the German market. The attributes "type," "price," and "origin" had the highest importance for the majority of consumers.

The beer revolution reached Hungary in the 2010s, with an increasing number of breweries starting to brew new beer types (IPA, APA, stout, wild ale, session, gose). In 2017, according to Molnár and Tátrai [19], 56 microbreweries operated in Hungary. According to Hajdók et al. [20], the market for small-scale breweries in Hungary may seem saturated. However, new entrants still represent a moderate threat for the existing companies,

which may be capital-intensive newly established innovative companies, subsidiaries of domestic companies, or even foreign expanding breweries. This threat for older breweries can be reduced if a brewery in a market already has a sufficient market share, and its brand is one of the more well-known ones.

The econometric analyses of the Hungarian market showed that the company's size has no linear effect on the chances of survival among microbreweries. In contrast, other company-specific feature, such as export, the age of the company does not affect the likelihood of survival. Among the characteristics of the industry, the level of growth, concentration, and intensity of entry play a significant role in the survival chances of small-scale breweries [21,22].

Therefore, this paper aims to analyse the factors influencing the Hungarian beer industry's economic performance based on unbalanced panel data on active Hungarian breweries between 2009 and 2017. The study applies panel data econometrics.

1.2. Global Beer Industry

The global beer industry has undergone a steady process of consolidation. Fifteen years ago, the international beer industry was still fragmented but since then, various companies have merged through acquisitions (e.g., the 60 billion U.S. dollar merger between Anheuser-Busch (St. Louis, MO, USA) and InBev (Leuven, Belgium) in 2008; Heineken's (Amsterdam, The Netherlands) 24 billion U.S. dollar acquisition of Asia Pacific Breweries (Singapore) in 2012). In 2016, Anheuser-Busch InBev (AB InBev (Leuven, Belgium)) controlled almost 30% of the global beer market. This international brewing company with headquarters in Belgium and the USA was responsible for producing, importing, and distributing many global brands such as Budweiser, Stella Artois, Beck's, Corona, Leffe and Hoegaarden. These statistics show that in 2019 AB InBev (Leuven, Belgium) was the largest beer company globally, with sales amounting to approximately 54.6 billion U.S. dollars [23].

Figure 1 shows how concentrated the world beer market is. The top 5 companies own 59% of the beer market. AB Inbev (Leuven, Belgium) represents 29% of the total beer market, while the second biggest company Heineken (Amsterdam, The Netherlands) has a 13% market share. They are followed by the China Resources Snow Breweries (Beijing, China) (6%), Carlsberg (Amsterdam, The Netherlands) (6%) and the Molson Coors group (Chicago, IL, USA) (5%).
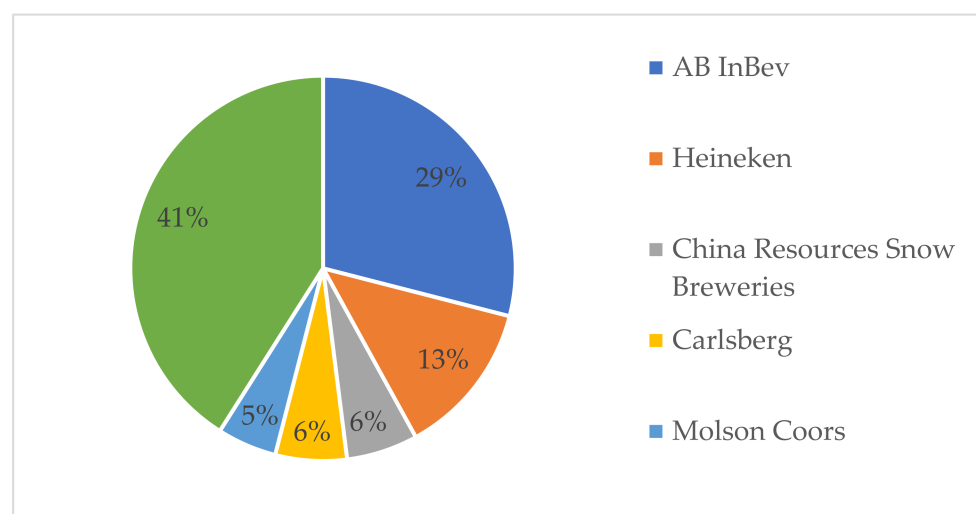

Figure 1. Global market shares of the leading beer companies (2019, based on value sales) [23].

2. Materials and Methods

In our research, we attempt to identify the factors influencing the profitability of the Hungarian microbreweries. We have analysed all the active players of the Hungarian beer

industry, using the financial data of the companies available in the M and A Research Catalyst database (2018), from 2009 through 2017. We selected the companies according to their NACE (Nomenclature of Economic Activities of the European statistical classification) codes (1105-Manufacture of beer). We restricted our data to breweries with the main activity of beer production and with an average turnover of less than 1 million EUR for 2009–2017. We excluded from our calculation the four biggest breweries of Hungary and focused on the microbreweries with this approach. The breweries' economic performance was measured on three levels—turnover, Earnings Before Interest and Taxes (EBIT), and profit are used as dependent variables. The study examines five hypotheses, which are listed below in addition to the previous related literature.

Hypothesis 1 (H1): *Social Media activity has a positive impact on the microbrewery's profitability.*

The marketing budgets of small craft breweries are far behind those of large industrial breweries. They are usually unable to do commercial campaigns, but still, need to specifically target potential consumers with their products. In the USA, primary consumers of craft brewers are millennials, who follow social media, and they are five times more likely to be influenced by word-of-mouth than advertising [24]. Therefore, these companies are mostly adverting on websites, social media, and the place of consumption. The result of Rishika et al. [25] showed that customer engagement through social media increases customers' shopping visits. This effect is more significant in the case of a higher level of activity on the firm's social sites. Moreover, they found that the impact is more remarkable for customers who have higher levels of spending and share of the premium and that these results retain per customer profitability as well. Social media's usefulness as a marketing tool in the craft beer industry has already been explained in previous studies [26,27]. Kleban and Nickerson [27] also highlighted that in the past, the financial resources used to be a key factor for a company to be superior in its marketing efforts, but today the importance of the social media has brought all kinds of breweries to a common battlefield.

Therefore, based on previous studies' findings, we suggest that Social Media activity positively influences Hungarian microbreweries' economic performance.

Hypothesis 2 (H2): *Participating in short food supply chains might increase breweries' profitability.*

In the literature, numerous studies exist (e.g., [28–30]) with a final understanding of positive impacts of the short supply chains in the food industry. Among others, the paper of Givens and Dunning [31], in which the authors examined short food supply chains, where farmers deliver fresh produce directly to restaurants for potentially higher returns, omitting the costs of intermediary distributors and it also gives a lower barrier to entry for small and beginner farmers. However, fewer studies are examining the relationship between the concept of short food supply chain and breweries. Alfeo, Todaro, Migliore, Borsellino and Schimmenti [16] found that sales channels appear to influence the beers' diversification and the turnover levels of the Sicilian craft beer producers. Carter [32] examined the producer dynamics and consumer politics in quality agricultural supply chains and several product categories, including quality beers. She found that the emergence of primary food quality is connected to local political organisation's strength, and consumers have a greater role in shaping quality in these markets. Relying on evidence from the United Kingdom (UK) brewing industry, Mason and McNally [33] highlight distribution channels' role as a major barrier to growth in the small business sector. As in the food industry in general, compared to traditional farm sale channels that sell products through wholesalers, direct-to-consumer marketing channels have become increasingly outstanding, such as farmer's markets or community-supported agriculture [34]. Lee et al. [35] lists the reasons why direct marketing and sales are better for both sides. The consumer's benefits are that farm products sold in the local food market are likely healthier and more fresh [36] [37]. Several buyers support the local market for fairness, equity and food safety [38,39]. On the other hand, farmers who sell their products directly can generate higher sales and income [40].

Relying on these previous results, we suggest that breweries participating in short food supply chains with direct sales channels—in our case, owning a pub—provide higher profitability than those who sell their products only by third parties.

Hypothesis 3 (H3): *Breweries situated in the capital (Budapest) are more profitable because it provides a higher demand for craft beer.*

The location of craft breweries is usually related to several factors. Wojtyra et al. [41] summarise them, suggesting that these factors are different for large industrial breweries and microbreweries. In both cases, the raw material base can be an essential question, such as good-quality water, hops, or malt. However, small breweries are less dependent on individual raw materials, because of the diversity of beer produced, the smaller scale, and the limited time they are available. According to this study, other factors can be the market cost; or in case of the craft breweries—which follows the socioeconomic development and rising income—the proximity of urban centres. Beer, similar to other beverages, is a heavy product, and production facilities are trying to be located as close to the final markets as possible to reduce transportation costs [42]. It follows that craft breweries are established in densely populated areas because demand is higher and transportation costs are lower when the units are based near a larger number of purchasers. [43]. According to Baginski and Bell [44], the number of craft breweries in the United States is strongly influenced by the size of the population and craft breweries are expanding better in areas with a higher cost of living, more health facilities, and greater social tolerance. The economic activity in an area positively affects the establishment of breweries.

In Hungary, the capital city Budapest and her suburb (altogether 2.54 million consumers of the total 10 million Hungarians [45]) matters in terms of sales and the size of the market. Also, young consumers opened to craft beers and a significant share of university students are also located in the capital. Nonetheless, most of the craft beer festivals are also take place in Budapest.

Therefore, like the previous studies, we expect that breweries situated in (or close to) Budapest are more profitable than breweries in other smaller settlements.

Hypothesis 4 (H4): *The age of the brewery has a positive impact on profitability.*

The connection between the age of the firm and its profitability had already been investigated. Among others, Akben-Selcuk [46] found a negative and convex relationship between firm age and profitability measured by return on assets, return on equity or gross profit margin. It means that younger businesses experience a decline in their profitability from the beginning, but they may become profitable again at an old age. Hopenhayn [47] also concluded that older firms enjoy higher profits and value. In the Hungarian beer industry, a company survives an average of 4 years, while the median value is 5.9 years; however, the mean and median lifetimes of microbreweries are less than half that of non-microbreweries [48].

From these results, we predict that the age of the brewery has a positive impact on profitability.

Hypothesis 5 (H5): *Tax reduction for small breweries introduced in 2012 by the Hungarian government has a positive impact on industrial profitability.*

From 2012 remarkable changes occurred in the excise duties in Hungary. First of all, the new law made a distinction between breweries (independent producers with an annual production of fewer than 8000 hectolitres) and beer factories (all the other, bigger producers). Beside significantly lightened bureaucratic obligations, for the small-scale producers (breweries) excise duty was reduced by 50 percent. These reductions in entry barriers had a positive impact on companies and employment [48]. Also, home brewing up to 1000 litres became tax-free, which could be a competition for craft breweries. In 2016,

the regulation changed again, and the official term of microbreweries was introduced for independent producers with an annual production of fewer than 20,000 hectolitres. These companies still have to pay only half of the excise duty paid by the big beer factories.

According to these facts, we suspect that in our results, this tax reduction for small breweries available from 2012 has a positive impact on the industry's profitability.

Based on the hypotheses above, the following equations were estimated for the Hungarian microbreweries:

$$\text{lnturn} = \beta_0 + \beta_1 \text{FBlike}_{ij} + \beta_2 \text{OwnPub}_{ij} + \beta_3 \text{lnDistanceBP}_{ij} + \beta_4 \text{BreweryAge}_{ij} + \beta_5 \text{TaxReduction}_{ij} + \varepsilon_{ij} \quad (1)$$

$$\text{lnEBIT} = \beta_0 + \beta_1 \text{FBlike}_{ij} + \beta_2 \text{OwnPub}_{ij} + \beta_3 \text{lnDistanceBP}_{ij} + \beta_4 \text{BreweryAge}_{ij} + \beta_5 \text{TaxReduction}_{ij} + \varepsilon_{ij} \quad (2)$$

$$\text{lnProfit} = \beta_0 + \beta_1 \text{FBlike}_{ij} + \beta_2 \text{OwnPub}_{ij} + \beta_3 \text{lnDistanceBP}_{ij} + \beta_4 \text{BreweryAge}_{ij} + \beta_5 \text{TaxReduction}_{ij} + \varepsilon_{ij} \quad (3)$$

where

β denotes the estimated coefficients,
β_0 captures the constant term,
ε_{ij} represents the error term.

We pretested the database for Wooldridge [49] autocorrelation and Fisher-type [50] panel-data unit-root tests. We applied linear panel models using simple OLS, panel-corrected standard error (xtpcse) and Driscoll and Kraay [46] standard errors estimations to measure the beer industry's performance.

To compute the estimates of the standard errors, panel-corrected standard error model assumes that the disturbances are heteroskedastic and contemporaneously correlated across panels. In the case of Driscoll and Kraay [51] estimation, the error structure is assumed to be heteroskedastic, autocorrelated, and correlated between the panels.

The detailed explanation of the data and variables included in the model is summarised in Table 1.

**Table 1.** Variables included in the panel regression.

Variable	Description	Data Source	Expected Sign
Dependent			
lnturn	the logarithm of the brewery's turn-over, expressed in Euro	M and A Research Catalyst (2018)	
lnEBIT	the logarithm of the brewery's EBIT, expressed in Euro	M and A Research Catalyst (2018)	
lnProfit	the logarithm of the brewery's EBIT, expressed in Euro	M and A Research Catalyst (2018)	
Independent			
FBlike	number of the brewery's Facebook likes (30 June 2020)	own data collection from the companies site	+
OwnPub	dummy variable, =1 if the brewery has its own pub, 0 otherwise	own data collection	+
lnDistanceBP	the distance of the brewery head-quarters from Budapest in kilometre	own data collection	-
BreweryAge	the number of closed business years	M and A Research Catalyst (2018)	+
TaxReduction	dummy variable, =1 if a reduced tax applied for microbreweries in the given year, 0 otherwise	own data collection	+

3. Results

### 3.1. Performance of the Hungarian Brewing Industry

According to a report of the Brewers of Europe [52], in 2018, Hungary ranked 14th in the European beer production list. Beer consumption has been on a declining trend in recent decades. The last year when the country's annual beer consumption was over 1 billion litres was 1991, while in 2018, Hungarians consumed only 688.9 million litres of beer [53].

Figure 2 shows the average turnover of the Hungarians breweries between 2009 and 2017. To provide an overall view on the sector, here we also included the non-microbreweries. On average, Heineken Hungária PLC. (Budapest, Hungary) represented 35% of the total turnover of the industry, followed by Dreher Breweries PLC ((Budapest, Hungary) (32%) and the Borsodi Brewery Ltd. (Bőcs, Hungary) (21%)). The four biggest companies together represented 93% of the total turnover. All the other breweries (98 firms) had only a 7% share, indicating that the Hungarian beer market is as concentrated as the global beer market. Though the world biggest beer company, the AB Inbev (Leuven, Belgium) currently has no share in the Hungarian market, the other three dominant international market players (Heineken Group (Amsterdam, The Netherlands), Asahi Group (Tokyo, Japan) and the Molson Coors (Chicago, IL, USA)) own the biggest Hungarian beer-producing capacities. The fourth biggest brewery in Hungary (Brewery Co. Pécs (Pécs, Hungary)) has been owned by Hungarian investors since the change of ownership in 2017 [54]. These top four brewing companies accounted for an average turnover of more than 2 million EUR (per company) for the analysed period. The three largest industrial beer companies are foreign-owned (Heineken—Heineken Group (Amsterdam, The Netherlands), Dreher—Asahi Group (Tokyo, Japan), and Borsodi—Molson Coors Group (Chicago, IL, USA)) and produced nearly 90% of total turnover in 2009–2017.
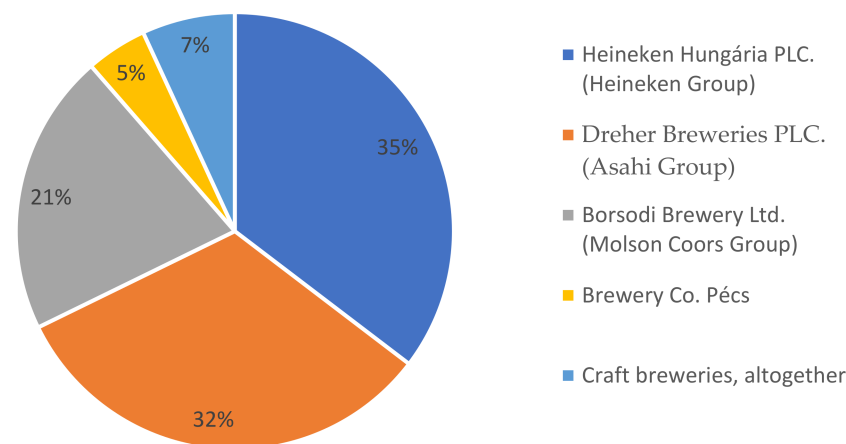
Figure 2. Share of the average turnover of the Hungarian breweries, 2009–2017, own composition based on sample data.

Through investigating the economic and profitability indicators of the Hungarian breweries, different tendencies are observed. The average turnover was decreasing after 2011. However, after 2012, the average EBIT and profit levels have been slightly increasing since 2015 and turned out to be positive only after 2016. While the total average turnover was high (7,285,339 EUR) in the industry, the EBIT (−43,510 EUR) and the Profit (−144,861 EUR) rates were negative for the analysed period. These statistics indicate a low economic performance of Hungarian brewing industry (Figure 3).
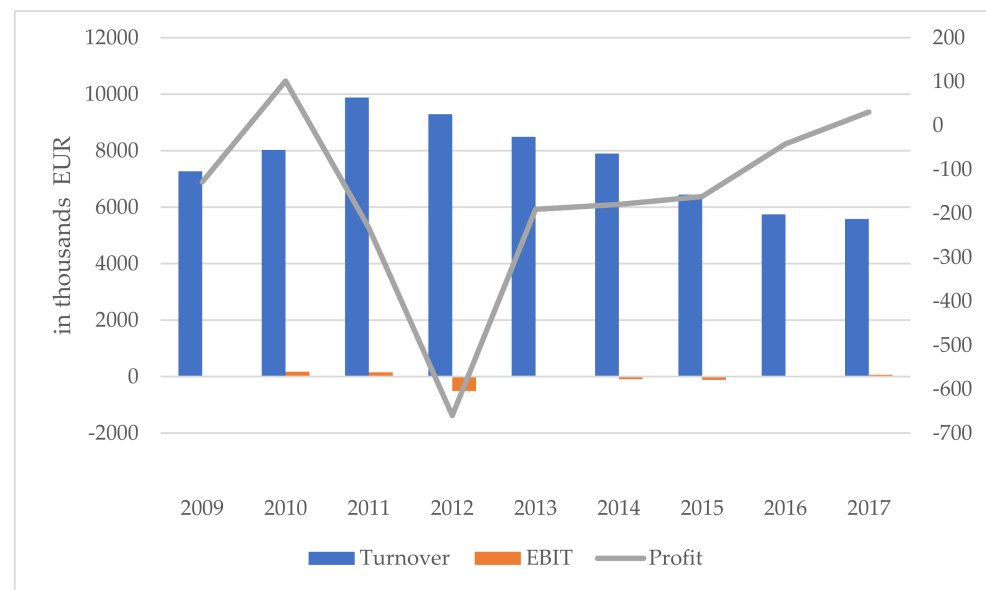
Figure 3. Economic indicators of Hungarian breweries, mean, in thousands of Euro 2009–2017, own composition based on sample data. Note: Turnover, Earnings Before Interest and Taxes (EBIT) illustrated on the left axis, Profit on the right axis.

From 2011, the beer industry in Hungary was characterized by below-average growth, and from 2014 the statistics shown a decline in average prices. The beer has become cheaper overall compared to non-beer products. After 2008, the sector experienced a decline in the years of the crisis, which reached its minimum in 2009, and by 2011 sales remained at this level. After 2011, breweries were still operating at a loss due to the crises.

3.2. Factors Influencing Breweries' Turnover

Regression results have confirmed possible determinants of Hungarian microbreweries' economic performance and the estimations are valid for most of the profitability indicators included (turnover, EBIT and profit). To ensure the robustness of the estimations, three different estimation procedures were performed—ordinary least squares (OLS) with robust standard error (1), linear regression with panel-corrected standard errors (2) and regression with Driscoll-Kraay standard errors; and in most cases, the same results were obtained. Wooldridge [49] test confirmed the existence of first-order autocorrelation; therefore, panel-corrected and Driscoll-Kraay standard errors are more appropriate. Fisher-type panel-data unit-root tests with augmented Dickey-Fuller tests reject the hypothesis of all panels contain unit roots for one or two lags.

Regression results are summarised in Tables 2–4 for the three profitability indicators applied in logarithm form.

Table 2. Results for brewery's turnover.

Variables	(1)	(2)	(3)
	Simple OLS	xtpcse	xtscc
	lnturn	lnturn	lnturn
FBlike	0.000112 **	0.000112 ***	0.000112 *
	(4.85×10^{-5})	(3.92×10^{-5})	(5.04×10^{-5})
OwnPub	0.796 ***	0.796 ***	0.796 ***
	(0.263)	(0.220)	(0.225)
lnDistanceBP	−0.0219	−0.0219	−0.0219
	(0.105)	(0.0833)	(0.115)
BreweryAge	0.0428 ***	0.0428 ***	0.0428 ***
	(0.0150)	(0.00892)	(0.0104)
TaxReduction	0.713 **	0.713 **	0.713 **
	(0.301)	(0.296)	(0.236)
Constant	8.483 ***	8.483 ***	8.483 ***
	(0.566)	(0.395)	(0.342)
Observations	421	421	421
R-squared	0.070	0.070	0.070
Number of groups		79	79

Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3. Results for brewery's EBIT.

Variables	(1)	(2)	(3)
	Robust OLS	xtpcse	xtscc
	lnEBIT	lnEBIT	lnEBIT
FBlike	0.000154 ***	0.000154 ***	0.000154 ***
	(0.000)	(0.000)	(0.000)
OwnPub	0.527 **	0.527 ***	0.527 ***
	(0.255)	(0.162)	(0.162)
lnDistanceBP	−0.170 *	−0.170 **	−0.170 **
	(0.0917)	(0.0685)	(0.0685)
BreweryAge	0.0256 *	0.0256 ***	0.0256 ***
	(0.0149)	(0.00765)	(0.00765)
TaxReduction	0.758 **	0.758 ***	0.758 ***
	(0.365)	(0.266)	(0.266)
Constant	7.658 ***	7.658 ***	7.658 ***
	(0.564)	(0.344)	(0.344)
Observations	259	259	259
R-squared	0.115	0.115	0.115
Number of TaxID		65	65

Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4. Results for brewery's profit.

xtpcse	(1)	(2)	(3)
	simple OLS	xtpcse	xtscc
Variables			
	lnProfit	**lnProfit**	**lnProfit**
FBlike	0.000177 ***	0.000177 ***	0.000177 ***
	(0.000)	(0.000)	(0.000)
OwnPub	0.439	0.439 **	0.439
	(0.284)	(0.210)	(0.252)
lnDistanceBP	−0.162	−0.162 *	−0.162
	(0.110)	(0.0897)	(0.0914)
BreweryAge	0.0110	0.0110	0.0110
	(0.0159)	(0.0141)	(0.0166)
TaxReduction	0.931 ***	0.931 ***	0.931 ***
	(0.342)	(0.228)	(0.193)
Constant	7.394 ***	7.394 ***	7.394 ***
	(0.599)	(0.312)	(0.265)
Observations	254	254	254
R-squared	0.124	0.124	0.124
Number of TaxID		65	65

Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Comparing the results, the estimation is the most robust for EBIT, followed by turnover and profit.

Table 2 shows the factors that have an impact on the turnover of the examined breweries. The direct sales channel and tax reduction have the most positive effect on turnover. The distance from Budapest has a negative impact, although this result is not significant in the case of the turnover. The number of Facebook likes, and the breweries' age have a mild effect on the turnover.

3.3. Factors Influencing Breweries' EBIT

Table 3 indicates the factors that have an impact on the EBIT of the examined companies. The direct sales channel and the tax reduction have the most positive effect also on the firm's EBIT. The distance from Budapest has a significant adverse effect. The number of Facebook likes and the age of the breweries have a mild impact on the EBIT as well.

3.4. Factors Influencing Breweries' Profit

Table 4 highlights the factors that have an impact on the profit of the examined companies. The direct sales channel (only significant with the linear regression model with panel-corrected standard errors method) and the tax reduction, in particular, have the most positive effect on breweries' profit level. The distance from Budapest again harms the profit. Facebook (FB) likes also have a small but positive outcome.

4. Discussion

Regression results have justified the selected determinants of the economic performance for Hungarian breweries, and the estimations were valid for all profitability indicators included.

Our result suggests the benefits of short food supply chains (H2) are prevalent in the beer industry, likewise the study of Givens and Dunning (2017). Breweries with direct sales channels (such as own pubs) showed significantly higher sales, EBIT, and profit than those selling their beer products by marketing channels. Lee, Liu and Chang [35] highlighted several reasons why it is worth doing direct sales, such as the breweries can generate higher sales and income in this way.

Breweries situated in Budapest (H3) are the most profitable since the capital city provides a higher demand for high-quality beer; by contrast, the distance from the capital

city hurts the company's performance. Gatrell et al. (2014) explain it by the fact the beer is a heavy product and production facilities are trying to locate as close to the final market as possible to reduce costs. The Social Media activity (FB likes) (H1) and the age of the breweries (H4) had a modest but positive impact on the industrial and micro brewery's profitability and turnover. Besides the Social Media platforms, cooperative marketing (e.g., organizing and participating at beer festivals) among start-up breweries might also result in cost-effective and targeted marketing activities [9] and can contribute to the general start-up culture in the national food and beverage industry.

Finally, tax reduction (H5) for small breweries introduced in 2012 by the Hungarian government had the most significant positive impact on industrial profitability. In conclusion, the government's aim to support small scale beer production has been successful because it helped the survival of the Hungarian microbreweries. In general, Hungarian results also underline the importance of supportive governmental attitude, because similar to other countries (e.g., in the USA [5]), microbreweries are highly dependent on regulation, and on taxation in particular.

As the business environment for the food and beverage industry in Central and Eastern-Europe is very similar [55], our results (except the country-specific taxation environment) might be valid not only in Hungary but also in the wider region.

5. Conclusions

Breweries can be found worldwide, and beer is the most popular alcoholic beverage in several countries in the world. Beer is the most consumed alcoholic drink in Hungary. Nowadays, drinking craft beers has become more popular among Hungarian customers than industrial beers, which is why their market analysis is also gradually becoming a relevant research topic.

In this paper, we analysed the factors influencing the Hungarian craft beer market's economic performance for the period of 2009–2017. Although the craft breweries represent only 7% of the Hungarian beer market, they are continually growing and several consumer segments have heavily affected by this trend. To measure the industry's performance, linear panel models were applied by employing OLS, panel-corrected standard error and Driscoll and Kraay standard errors estimations. The economic performance of the Hungarian breweries was captured by companies' turnover, EBIT and profit. Our hypothesis tested the role of the age, Social Media activity, geographical location, direct sales and impact of brewery's tax reduction as the explanatory variables. The descriptive statistics indicate a low economic performance of the Hungarian brewing industry associated with moderate profitability, especially before introducing the tax allowance in 2012.

We concluded that, although social media has, right now, a minor impact on the economic performance of microbreweries, by contrast, it is the cheapest way for microbreweries to promote their products and keep in contact with their consumers, which was especially true during the lockdown caused by the COVID-19 pandemic. Therefore, using the opportunities provided by social media is key for marketing strategies among the Hungarian microbreweries as it might stimulate sales and popularity.

Short food supply chains, direct sales channels and the proximity to the capital city (Budapest) have been proved to be essential factors in achieving higher profits in this industry. Besides reducing their costs by eliminating shipping or intermediate traders, keeping continuous personal contact with their consumers is also needed for Hungarian brewery.

Tax reduction for small breweries introduced in 2012 by the Hungarian government had the most significant positive impact on industrial profitability. Following the measure, profitably curve of craft breweries started to rise significantly.

The results show that the personal relationship between companies and their customers is significant in the craft beer industry. Furthermore, the supportive government provisions also provided a stimulative effect on the market. The profitability of craft breweries is heavily exposed to the legal environment and tax regulation.

The study modelled the economic performance of Hungarian microbreweries, focusing on external factors (tax reduction, distance from the capital, age, social media); however, firm-related, operational factors (number of employees, assets, investments, innovation and technology etc.) are also influencing the profitability of the Hungarian breweries that are not considered by this study. This is certainly one of the limitations of the study, and those factors not covered by our research might serve as the basis for another investigation.

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