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IDENTIFICATION OF THE FACTORS INFLUENCING THE PROFITABILITY OF THE HUNGARIAN BEER INDUSTRY

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ABSTRACT
Beer consumption and beer industry is an important beverage sector in Hungary because the beer is the most consumed alcoholic beverage in the country according to WHO studies. During history, breweries developed in different size and different values. The Hungarian beer industry can be divided into three groups of breweries: old large scale breweries, old microbreweries and new wave microbreweries. In this paper, we examine the factors influencing the economic performance of the Hungarian beer industry based on panel data of all active Hungarian breweries in 2018 (121 breweries), for the period of 2009-2017. The study applied panel-data linear models by using feasible generalized least squares with error structure with no cross-sectional correlation option. The economic performance is measured by companies' turnover, EBIT and profit, which were used as dependent variables. The following explanatory variables were applied in the model: age of brewery (number of closed business years), Social Media activity (FB likes of company page), geographical location (distance from Budapest in km), direct sales (represent own pub/direct sales channel), impact of tax reduction (small beer companies pay 50% less tax since 2012). Regression results have shown a number of determinants of the economic performance of Hungarian breweries, and the estimations are valid for all profitability indicators included (turnover, EBIT and profit). As in previous research, we have come to the conclusion that if the company survives the early years of operation, we can expect profitable activity. Since the ratio of early bankruptcy among Hungarian brewers is still very high, the fluctuation between smaller breweries strongly determines the industry.The benefits of short food supply chains (both physical distance and number of intermediaries) are also prevalent in the beer industry. Breweries with direct sales channels (mostly their own pubs) showed significantly higher sales, EBIT and profits compared to those selling their products by third parties. Breweries situated in Budapest are the most profitable, because the capital city provides a higher demand for high-quality beer, in contrast, the distance from the capital city has a negative impact on the firm's success.The Social Media activity, often used as the only promotion channel for the microbreweries, has a positive impact on the brewery's profitability. Finally, tax reduction for small breweries introduced in 2012 by the Hungarian government had the most important positive impact on industrial profitability, especially in the case of microbreweries. It seems the government aim to support small scale beer production has been successful because it helped the survival of the Hungarian microbreweries.

Keywords: Hungarian breweries, profitability, short food supply chains

INTRODUCTION

The microbreweries appeared all over the world in the past years and although their market share is relatively small they are constantly growing. That's why many research focus on the development and reorganization of the beer markets. The craft beer revolution is a phenomenon which started in the United States. From 1978 the Federal Law allows the home production of beer at national level. The research of MCCULLOUGH ET AL. (2019) examines the relationship between homebrewing legislation and the growth of the beer industry across the United States, and finds that enacted legislation has had a significant effect on the structure and growth of the brewing industry. GARAVAGLIA AND SWINNEN (2018) analysed the economic perspectives of the craft beer inside the global beer industry. Their book takes a look at the situation of the craft beer market in different countries.

There are other country-specific studies which analyse the craft beer industry from different aspects. Among others, FASTIGI et. al. (2018) investigated this topic in Italy. They were focusing on a special group of agricultural breweries. The basic requirements for a microbrewery to be considered as an agricultural one is that more than half of the cereals used in its beer production must come from the brewery's own cultivation. In their studies agricultural breweries are themselves "revolutionising" the sector with their larger size, business orientation, creation of local supply chains, and also their realistic attitude towards the real evolutionary potential of the sector may represent a real opportunity for the longer-term success of the Italian craft brewing industry. In another Italian research, they examined the knowledge transfer in a start-up craft brewery. Authors found that the entrepreneur played a fundamental and crucial role in the start-up process, acting as a selective and passionate broker for the knowledge transfer process (CARDONI ET AL. 2019).
The econometric analyses of the Hungarian researchers show that the size of the company has no linear effect on the chances of survival of microbreweries, while 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 role in the survival chances of small-scale breweries. (FERTŐ ET AL. 2016)
KOCH AND SAUERBRONN (2019) examined the consumption of craft beer in Brazil. In the study, they found that "Drink less, drink better" is the main slogan of the Brazilian craft beer consumers. They show commitment to enjoyment and responsibility while reject mass-produced beer and antisocial behaviours, which usually associated with beer drinkers. So for the craft beer drinkers, the beer means much more than the mass-beer consumers. RIVAROLI ET AL. (2019) also examined the motivation and the attitude of the craft beer consumption on German and Italian sample. Their conclusion is that social norms and self-identity are both directly influences the consumers' behaviour to drink craft beers, so we can say this beverage is in the era of the "experiences economy", where goods and services sold are no longer just physical products.

MATERIAL AND METHOD

In our research, we attempt to identify the factors influencing the profitability of the Hungarian (micro)breweries. We have analysed all the active players of the Hungarian beer industry, using the financial data of the companies available in the M&A Research Catalyst database (2018), for the period of 2009-2017.
The profitability was measured on three levels, we used dependent variables for turnover, EBIT and profit. The detailed explanation of the data included in the model is summarized in Table 1.

We applied panel-data linear models by using feasible generalized least squares (FGLS) with error structure with no cross-sectional correlation option:

$$lnturn/lnEBIT/lnProfit = \alpha + \beta 1FBlike_{ij} + \beta_2 OwnPub_{ij} + \beta_3 lnDistanceBP_{ij} + \beta_4 BreweryAge_{ij} + \beta_5 TaxReduction_{ij} + \varepsilon_{ij}$$

Table 1 Variables included to the panel regression calculations

Variable	Remark	Source
lnturn	dependent variable, the logarithm of the brewery's turnover	M&A Research Catalyst
lnEBIT	dependent variable, the logarithm of the brewery's EBIT	M&A Research Catalyst
lnProfit	dependent variable, the logarithm of the brewery's Profit	M&A Research Catalyst
FBlike	number of likes of the brewery's Facebook profile	own data collection
OwnPub	dummy variable, =1 if the brewery has it's own pub	own data collection
lnDistanceBP	the distance of the brewery headquarters from Budapest, km	own data collection
BreweryAge	the number of closed business year	M&A Research Catalyst
TaxReduction	dummy variable, =1 if in the given year a reduced tax applied for microbreweries	own data collection

RESULTS

Results are summarized in *Table 2*.

Table 2 Results of the panel regression model

	(1)	(2)	(3)
VARIABLES	lnturn	lnEBIT	lnProfit
FBlike	2.36e-07***	2.16e-07***	2.48e-07***
	(7.58e-09)	(2.13e-08)	(2.29e-08)
OwnPub	0.259***	0.229*	0.201*
	(0.0817)	(0.133)	(0.121)
lnDistanceBP	-0.0588	-0.0837	-0.0776
	(0.0358)	(0.0529)	(0.0528)
BreweryAge	0.0791***	0.0348***	0.0199***
	(0.00475)	(0.00748)	(0.00675)
TaxReduction	0.498***	0.204	0.566***
	(0.0870)	(0.182)	(0.214)
Constant	9.298***	8.398***	7.963***
	(0.185)	(0.280)	(0.262)
Observations	559	353	346

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

The Social Media activity, often used as the only promotion channel for the microbreweries, has a positive impact on the brewery's profitability and turnover. The benefits of short food supply chains (both physical distance and number of intermediaries)

are also prevalent in the beer industry. Breweries with direct sales channels (mostly their own pubs) shown significantly higher sales, EBIT and profits compared to those selling their products by third parties. Breweries situated in Budapest are the most profitable, because the capital city provides higher demand for high-quality beer, in contrast, the distance from the capital city has a negative impact on the firm's success, however, these results are not statistically significant. Like in previous research (FERTŐ ET AL. 2016), we have come to the conclusion that if the company survives the early years of operation, we can expect profitable activity. Since the ratio of early bankruptcy among Hungarian brewers is still very high, the fluctuation between smaller breweries strongly determines the industry. Finally, tax reduction for small breweries introduced in 2012 by the Hungarian government had the most important positive impact on industrial profitability, especially in the case of microbreweries. It seems the government aim to support small scale beer production has been successful because it has significantly contributed to the profitability of the Hungarian microbreweries.

CONCLUSIONS

Breweries can be found all over the world, and beer is a major beverage for consumption in almost all countries in the world. Beer is the most consumed alcoholic drink in Hungary. The paper examined the factors influencing the economic performance of the Hungarian beer industry based on panel data of 121 active Hungarian breweries in 2018 for the period of 2009-2017. We applied panel-data linear models by using feasible generalized least squares estimations in order to measure the performance of the industry. The breweries' economic performance is measured by companies' turnover, EBIT and profit as dependent variables. The age of brewery, Social Media activity, geographical location, direct sales, and impact of tax reduction was applied as explanatory variables in the model. The descriptive statistics confirm a low economic performance of Hungarian brewing industry. Regression results have justified the selected determinants of the economic performance for Hungarian breweries, and the estimations were valid for all profitability indicators included. Result suggests the benefits of short food supply chains (geographical distance and number of intermediaries) are also prevalent in the beer industry. Breweries with direct sales channels (such as own pubs shown significantly higher sales, EBIT and profits compared to those selling their beer products by marketing channels. Breweries situated in Budapest are the most profitable, since the capital city provides a higher demand for high-quality beer, by contrast, the distance from the capital city has a negative impact on the company's performance. The Social Media activity (FB likes) has a positive impact on the industrial and micro brewery's profitability and turnover. Finally, tax reduction for small breweries introduced in 2012 by the Hungarian government had the most significant positive impact on industrial profitability. In conclusion, the government aim to support small scale beer production has been successful because it helped the survival of the small scale Hungarian microbreweries.

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