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A Beer Market in Transition

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Abstract

The aim of the paper is to analyse the evolution of small breweries in Slovenia in time of transition to market economy and EU membership. We use individual monthly data on beer production and imports to test two possible explanations for the underdevelopment of small breweries. The first proposed explanation is the very strong market domination by two major breweries. The alternative hypothesis is the lack of consumer taste for beer diversity. In our empirical estimates, we use data on imports and their variety as an indication of new and interesting »beer diversity« available to domestic consumers. We confirm that increased imports help domestic small breweries to increase and also diversify their own production. This suggest that the »taste for beer diversity« may develop as consumers are faced with a large variety of imported beers. On the other hand, the negative impact of market domination by two major breweries on small breweries' production is not significant. This leads us to conclude that the lack of profound consumer taste (or »the culture of beer drinking«) may be the major reason preventing development of small breweries.

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1. Introduction

The aim of the paper is to analyse the evolution of small breweries in Slovenia in time of transition to market economy and EU membership. It is natural to expect that market economy would facilitate emergence and growth of new private producers. However, although there are nowadays some 30 small brewers, the market is still dominated by two major breweries, established already in the 19th Century. Their combined market share in domestically produced beer remains over 90 per cent.[1]

It is interesting to contrast this situation with that of the wine market. Even in socialist times, there were around ten agricultural co-operatives producing different sorts of wine and competing freely with each other. In the 1980s, also some independent wine producers emerged. After restrictions on private production were lifted, some of these independent wine-makers grew into important market players, and many more new small producers (catering mainly to local restaurants and individual customers) sprang into existence. The number of wine producers exploded. In a country with only 2 million inhabitants, there are nowadays around 25,000 registered small wine producers.

Nothing of the kind happened in the beer market. The ownership concentration even increased in the late 1990s when one of the two major breweries (Pivovarna Laško) began a long battle with Interbrew for the take-over of the second major brewery (Pivovarna Union). Taking advantage of a »blind eye« from the competiton office and the prevalent economic ideology of »national interest«, Laško won the take-over.[2] And not only that; later on it acquired a controlling share also in the major retail store chain, which by itself controls over two thirds of Slovenian retail market.

Such developments seem to create a bit of a puzzle. Given high concentration of the market, one could assume that new market entrants would be able to exploit inefficiencies of the two incumbents and gain market shares at their expense. As Table 1 shows, there is no shortage of demand for beer in Slovenia, although total sales have been stagnating. Considering these, one could actually expect new beer producers to emerge and develop at least as fast as wine-makers, but that did not happen.

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[1] Although each of the two breweries produces several beers, Slovenian marketing studies treat all beers produced by the same brewery as belonging to the same brand (Bratina and Faganel 2008).

[2] For a sympathetic account of political efforts to preserve national ownership of national beer champions in the case of Budejovice brewery, see Muchlinski (1996).

Table 1: Slovenian Beer Market in International Perspective

	Eastern Europe[1]		**Europe**[2]		**Slovenia**[3]	
	Sales growth	Sales per capita (l)	Sales growth	Sales per capita (l)	Sales growth	Sales per capita (l)
2000		44.9		61.6		97.9
2001	10.5%	49.9	-1.6%	60.3	-8.7%	89.4
2002	8.3%	54.3	-0.5%	59.7	-6.2%	83.8
2003	4.6%	56.9	0.2%	59.5	7.0%	89.6
2004	6.9%	61.1	-0.8%	58.7	-10.8%	79.9
2005	4.9%	65.9	-0.3%	58.2	-0.9%	79.2
2000-2005	**40.3%**	**21.0**	**-3.0%**	**-3.4**	**-19.0%**	**-18.6**
2006					6.6%	84.5
2007					7.6%	90.9

Notes:
[1] Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Russia, Slovakia, Ukraine.
[2] Denmark, France, Germany, Ireland, Italy, the Netherlands, Spain, Sweden, Turkey (!), UK.
[3] There is naturally more volatility in Slovenia data compared to aggregate data for two big regions including many countries.
Source: Snapdata 2005a, 2005b. For Slovenia, own calculation based on excise data.

In this paper, we use individual monthly data on beer production and imports to test two possible explanations for the underdevelopment of small breweries. In the next section, we develop the reasoning applied in the tests and present the data available. In the third section, we test both explanations.

2. Entering the Common Beer Market

2.1. Hypothesis

We propose two hypothesis to explain the underdevelopment od small brewers in Slovenia:

- The supply side explanation (H1): the two incumbent producers, controling 90 per cent of the market, are able to impose significant market barriers on small brewers and thus prevent them from increasing production.
- The demand side explanation (H2): there is a lack of taste diversification in demand and hence the alternative supply from small brewers is not appreciated. Slovenian consumers have a much more profound taste for diversity in wine than in beer; they regard wine as an intricate drink showing class, while beer is regarded as a simple drink for thirsty masses of unsophisticated consumers.[3]

H1 can be tested directly by using data on domestic market structure. To test the demand (H2) hypotehesis, we apply a specific interpretation of imports data. The imports of beer to Slovenia surged after its EU accession in May 2004, when the remaining tariffs were abolished and import procedures simplified (see Figure 1). The market share of imports increased from mere 3 per cent before EU entry to 15 per cent in 2008, while total sales of beer in the country (both imported and domestic) remained roughly unchanged (Figure 2). The rapid increase in imports indicate that local brand loyalty is not very strong.[4]

In our empirical estimates, we take the data on imports and their variety as an indication of new and interesting »beer diversity«, available to domestic consumer. We assume that exposition to increasing diversity may induce costumers to gradualy develop a more profound taste for beer. This will in turn enhance their interest in alternative domestic production. As a result, small brewers' production will increase as imports increase.

It has been estimated that 61 per cent of total domestic beer in Slovenia is sold on-trade (in pubs, restaurants etc), compared to European average of 43 per cent (Ernst&Young 2005). Assuming

[3] Drinking habits are certainly influenced by social custom and status considerations. See Simpura, Paakkanen and Mustonen (1995) for an interesting interpretation of changing beer and wine drinking patterns in Finland in terms of cultural change and modernisation.

[4] See Adams (2006) for several arguments challenging the conventional wisdom that beer market structure (in Germany) is dominated by local brand loyalty.

that consumers are more willing to try a new beer in a pub where it is recommended to them by the local barmen or their drinking companions, high share of on-trade consumption may speed up the process of taste diversification through imports.

2.2. Data

Our analyis is based on excise duties data, which were kindly provided to us by the Slovenian Customs Administration. The data on production are available from July 1999, when Slovenia introduced a standard EU system of excises on alcoholic beverages, to December 2008. The imports data are available from January 2000. We dropped the last month data (December 2008) from our data set, since data for several breweries were (still) missing. Our estimations are based on 107 monthly observations from January 2000 to November 2008.

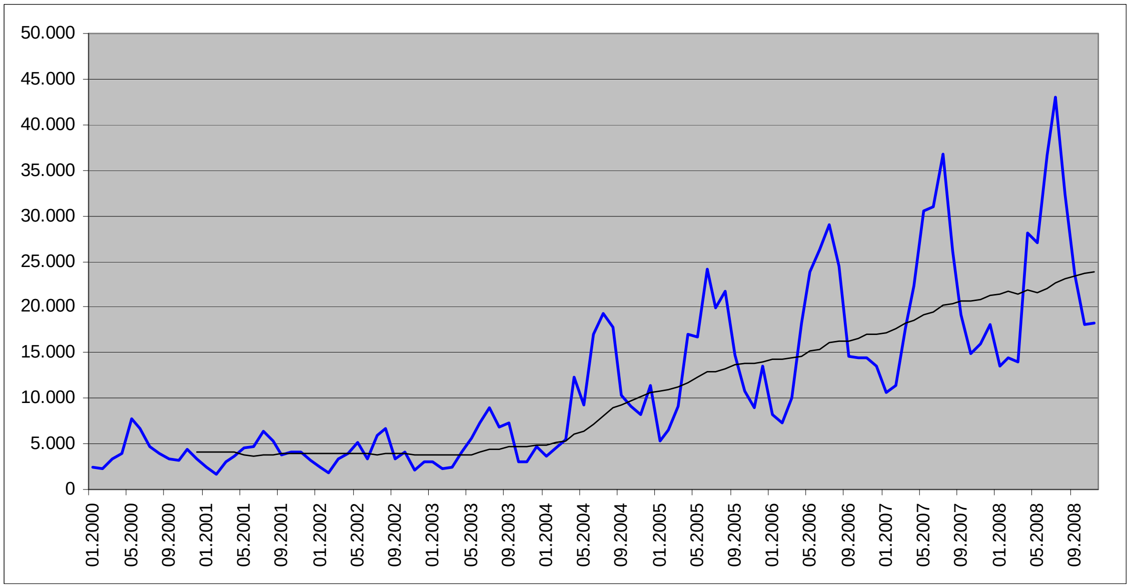
For the pre-EU period, we have data on quantities sold by domestic breweries as reported in their individual excise duty reports. We summed up the data from reports submitted in the same month to get an estimate of montly production for each brewery. For the period after EU entry, we have monthly data on quantity sold by each brewery, and we also have a separate figure on quantities »acquired from the EU« by each brewer or importer.

For imports, we have a series of monthly individual level data on quantities imported by each importer. Until EU accession, this data comprise total imports from all countries, while after EU entry they include only imports from »third countries«. We added data on »acquisitions from the EU« to obtain a total imports figure.

Most data are reported in (hecto)liters of beer. For pre-EU production, the data are given in liters of alcohol contained in the beer. To allow comparison, we transformed these figures into liters of beer by assuming an average volume content of alcohol in a (Slovenian) beer of 4 per cent.

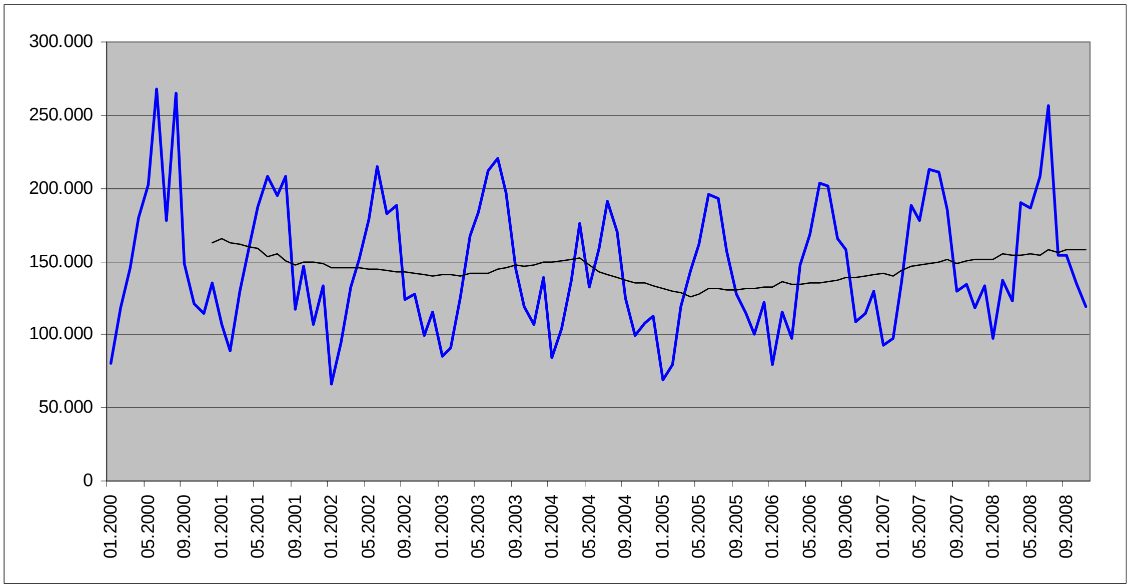
We classified as »small breweries« all producers with less than 1 per cent market share; all but three producers fell into this category. In 2007, for example, there were altogether 42 small brewers with average annual production of 204 hectoliters of beer. (Note that not all small brewers were active in every month, so that the mothly counts of brewers in Figure 2 are smaller).

Figure 1: Beer imports to Slovenia (hl per month)



Source: Own calculation based on excise duty data. Note: includes imports from both the EU and third countries. Trend line is a 12 months moving averages.

Figure 2: Total beer sales in Slovenia (hl per month)



Source: Own calculation based on excise duty data. Note: the sum of domestic production sold in Slovenia and imports to Slovenia, released to final consumption. Trend line is 12 months moving averages.

Since data on beer production are highly seasonal, we regressed all variables on a seasonal dummy; at the same time, we also regressed them on a time dummy to detect any significant trend. In all estimations reported below, the residuals from these regressions are used instead original data. To control for possible integration effects which are not reflected in the trend, we also include in all regressions a EU-dummy with the value of zero before May 2004 and one afterwards.

We also requested data on wine production. Since the excise tax on wine is zero, wine producers need only to register and not to report quatities produced.[5] So we got the number of registered producers (mentioned in the introduction), but no data on quantities produced. Our initial intention to compare beer market evolution to that of the wine market had to be dropped.

3. Imports competition helps small brewers

We begin by testing the demand-side hypothesis. We regress the total quantity of beer produced by all small brewers on the quantity of beer imported. If the »unsophisticated demand« explanation holds, we expect a positive correlation. The increase of diversity in beer supply due to increased imports is probably higher if the imports themselves are more diverse. Since we do not have data on brands imported, we assume that different importers import different brands and calculate a Herfindahl concentration index of import supply.[6] This is then included in regressions as an indirect measure of imports diversity (a higher concentration index of importers / producers implies a lower diversity of beer supply, and vice versa). To control for possible demand enhancing effects of increased diversity of domestic small brewers', we also include a Herfindahl index of small breweries.

Results reported in Table 2 support the demand-side explanation. Production of small breweries is significantly positively correlated with the quantity of imports. Small brewers are also able to sell more (in sum), as their own diversity increases. On the other hand, their production is not correlated with diversity of imports; this can be a result of our imperfected measure of diversity which is not measured at the level of brands.

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[5] They pay an income tax on (estimated) cadastral income; actually, they need not report quantities produced to any one at all.

[6] This assumption is supported by some field research; we checked the labels on several imported beers and found that almost every foreign brewery has its own importer, situated in Slovenia.

Table 2: Small brewers' production and imports

Variable	Beta coef.	t-value	significance
Total monthly quantity of imports	.282	3.497	.001
Herfindahl index of imports	.079	1.011	.315
Herfindahl index of small breweries	-.505	-6.325	.000
EU-dummy	-.090	-1.152	.252

Dependent variable: total monthly production of small brewers.
Adj. $R^2 = 0.395$; $F = 18.284$ ($p = .000$).

Now we turn to the supply-side hypothesis. We regress the total quantity of beer produced by all small brewers on the market share of the two major domestic producers in total supply (including imports). If the »market domination« explanation holds, we expect a negative correlation. We also include measures of small breweries supply concentration. Results reported in Table 3 give less support to supply-side explanation. Production of small breweries is indeed negatively related to incumbents' market shares, but the relation is not at all significant.

Table 3: Small brewers' production and market domination

Variable	Beta coef.	t-value	significance
Share of the 2 major producers in total supply	-.040	-.487	-.400
Herfindahl index of small breweries	-.580	-7.200	.000
EU-dummy	-.091	-1.111	.269

Dependent variable: total monthly production of small brewers.
Adj. $R^2 = 0.328$; $F = 18.253$ ($p = .000$).

Finally, we also try to test directly whether the small breweries concentration declines with increased imports and their diversity (Table 4). The estimated impacts go into the expected direction, but only the quantity variable is significant and the model has a low explanatory power overall.

Table 4: Small brewers' diversity and imports

Variable	Beta coef.	t-value	significance
Total monthly quantity of imports	-.309	-3.261	.002
Herfindahl index of imports	.054	.554	.581
EU-dummy	.002	.018	.986

Dependent variable: Herfindahl index of small breweries.
Adj. R^2 = 0.103; F = 3.959 (p = .010).

4. Conclusions

We advanced two hypothesis for underdevelopment of small breweries in Slovenia: the lack of tastes for diversity, and the market domination hypothesis. We were able to confirm that increased imports help domestic small breweries to increase and also diversify their own production. This suggest that the »taste for beer diversity« may developed as consumers are faced by a large variety of imported beers. On the other hand, the negative impact of market domination by two major breweries on small breweries was not significant. This leads us to conclude that the lack of profound consumer taste (or »the culture of drinking beer«) may be the major reason preventing development of small breweries.

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