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Working Paper

Belgian Beers: Where History meets Globalization

LICOS Discussion Paper, No. 271

Provided in Cooperation with:
LICOS Centre for Institutions and Economic Performance, KU Leuven

Suggested Citation: Persyn, Damiaan; Swinnen, Johan F. M.; Vanormelingen, Stijn (2010) : Belgian Beers: Where History meets Globalization, LICOS Discussion Paper, No. 271, Katholieke Universiteit Leuven, LICOS Centre for Institutions and Economic Performance, Leuven

This Version is available at:
https://hdl.handle.net/10419/74982

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LICOS Discussion Paper Series

Discussion Paper 271/2010

Belgian Beers:
Where History Meets Globalization

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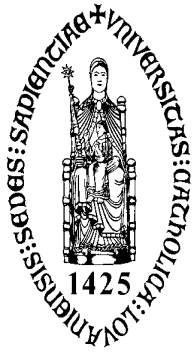

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Belgian Beers: Where History Meets Globalization

Version: October 2010

Damiaan Persyn[*], Jo Swinnen[♣] and Stijn Vanormelingen[♦]

"The great beers of Belgium are not its lagers. Its native brews are in other styles, and they offer an extraordinary variety, some so different from more conventional brews that at the initial encounter they are scarcely recognisable as beers. Yet they represent some of the oldest traditions of brewing in the Western world".

(Michael Jackson, www.beerhunter.com)

1 Introduction

When you ask people around the world what they associate 'Belgium' with, some of them say 'Belgium?'. Those who have heard of the country typically associate it with chocolates, Brussels or Bruges, the older ones with Eddy Merckx, the young ones with Kim Clijsters or Justine Henin and with … "Belgian Beers". Beers have become one of the countries prime points of recognition and fame. In this age of globalization, "Belgian Beers" with ancient histories have been turned into true ambassadors of the country, which one can increasingly find across the globe. The uniqueness of Belgian beers relates to some marked characteristics of the Belgian brewery sector and beer market which will be the focus of this chapter.

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First, Belgium has a huge variety of wonderful beers, on a per capita basis higher than any other country. Many breweries have a history going back many centuries and continue to operate in traditional ways, but at the same time are very much alive in this age of globalization. For example brewery Roman located near Oudenaarde has been run by the same family since 1545 and has since then grown into a mid-sized brewery with a yearly production of nine million litres and eighty five employees. Another example are the increasingly popular trappist beers which are still brewed by trappist monks, a tradition that dates back to the Middle Ages.

Second, at the same time, Belgium is also the home country of the largest brewing multinational in the world, AB Inbev. The company is not just the largest brewing company in the world, it is also the largest player in many countries in the world, including the United States, the UK, Canada, Belgium itself, and many others. Interestingly though, its roots can be traced back to a small Belgian brewery that started producing beer in the fourteenth century, and for six centuries it remained a relatively small local brewery. Its international expansion did not start until a mere twenty years ago, when it merged with another Belgian brewery. The brewing holding went on a global acquisition and merger spree which, in only two decades, led to the creation of the largest global beer company.

Third, despite this global image of Belgium as the country of beer, beer consumption in Belgium has actually been declining for decades. For over thirty years now Belgians drink less beer each year.

Fourth, Belgian breweries have developed export oriented strategies to compensate for the declining consumption in their home markets. These strategies have included both the take-over of breweries in other countries and the actual export of Belgian beers. Around 1990 export

accounted for around 10% of beer production and 90% was domestically consumed. This has changed drastically: in recent years around half of all beer production is exported.

Fifth, as in many other countries, the number of breweries has fallen rapidly over the past century with a strong consolidation taking place. Interestingly, however, over the past decade the number of breweries has stabilized, and for the first time in more than a hundred years, the number is increasing again in recent years – reflecting the growth of craft and microbrewery type of innovations in the brewery sector. Despite, or as some would argue, because of the globalization of the beer market with the domination of standard quality beers, alternative breweries catering to niche markets with special tastes are re-emerging.

In this chapter we will review, document and explain each of these developments and, in doing, analyze the most important economic dynamics and characteristics of "Belgian Beers". The chapter is organized as follows. Section 2 gives some background on various beer types which are brewed and consumed today in Belgium, several of which are unique to the country. Section 3 gives an overview of the history and current structure of the consumer market for beer in Belgium. The international performance of Belgian beers is analyzed in Section 4 and the industrial organization of the Belgian brewery sector and its increased concentration is discussed in Section 5. Section 6 considers the recent history of the trappist beers and of the AB Inbev brewery as two case studies which illustrate the main trends in the Belgian brewery sector. A final section concludes.

2 Belgian Beers

The Belgian beer market was and, especially in international comparison, still is characterized by the production and consumption of an exceptionally large variety of different styles of beer. This subsection will provide a concise overview of the main types of beer. A basic classification of beer styles can be made according to the fermentation process, namely bottom, top or spontaneous.

Bottom-fermented lager beers represent around 70% of total beer consumption in Belgium.[1] Some Belgian lagers are well known and appreciated internationally (such as Stella Artois, for example). Despite its current market domination, bottom fermentation is a relatively recent technology, at least in a historical perspective. Lager beers were introduced in the late nineteenth century, but experienced rapid growth afterwards. The yeast typically ferments at low temperatures (6-15 °C) and is collected at the bottom of the fermentation vessel, hence the name bottom-fermentation. After fermentation, the resulting beer needs to be stored for up to thirty days before being suited for consumption. The result of this process are lager beers[2]. Bottom-fermentation tends to better convert sugars into alcohol and produces less esoteric side-products in the process, leading to beers which are characterized by a cleaner, less sweet and crisp taste compared to top-fermented beers.

Typically Belgian are the so called ‘table beers’, which are beers with a low alcohol contents of about 2%. Nowadays these beers tend to be bottom fermented, but the tradition of drinking them during meals – also by children – stems from times when still water was

[1] The dominance of lager beers is even more pronounced in other countries as lager beers accounted for 90% of worldwide beer consumption.
[2] The name stems from the German noun ‘lager’, which means ‘storehouse’, because of the longer storage time for this type of beer.

contaminated by bacteria which were killed during the brewing process.[3] Table beer remained popular during a large part of the nineteenth century but lost market share to soft drinks in the past decades.

Top-fermenting yeasts have been used since ancient times for brewing. Yeasts are added to the fermentation vessels which are kept at a higher temperature (18-28° C). During fermentation the yeast settles as foam on the top of the wort where it was traditionally skimmed off by the brewer, hence the name top-fermented beers. The smaller market for top-fermented beers is highly geographically concentrated: Belgium, Germany, the US and the UK account for 55% of worldwide consumption (Euromonitor, 2009b, 2010). In contrast to lager beers, bottom fermented beers constitute a family of rather heterogeneous beers, and the wide variety in taste reflects significant differences in ingredients, yeasts, and brewing processes which are used.

An example of a typical Belgian top-fermented style are the 'speciale Belge' beers, which are somewhat similar to the British Pale Ale style and are spin-offs of a competition which was set up in 1904 to help the industry cope with the strong new competition from imported lager beers. The winning recipe 'Belge du Faleau' was appreciated so much that it was copied and varied upon by many brewers, some of which survive today (Palm, De Coninck, Op-Ale). The characteristic haze and taste of top-fermented white beers (Hoegaarden, Blanche de Bruges,…) is due to the use of unmalted wheat and spices such as coriander and orange peel.

Unique to Belgium are spontaneously fermented beers. This fermentation technique is typical for the region around Brussels and is the survival of what is probably the oldest fermentation technique which operates without cultivated yeast. Fermentation of Lambic beer

[3] Recently, a Belgian beer lovers movement has launched the idea to supply pupils with table beer at schools instead of soft drinks. They claim table beer is healthy alternative to soft drinks because it contains less sugar. The alcohol content is at such a low level that even 6 years olds can drink it.

relies on contamination of the wort in open vessels by a variety of wild yeasts, lactic acid bacteria, acetic acid bacteria and enterobacteria, which are carried by the air and are specific to the region and the brewery dwellings. The lactic acid gives spontaneously fermented beers a rather distinctive refreshing sour taste. Typical for spontaneously fermented beers is the use of unmalted wheat, the addition of fruits such as sour cherries in some varieties (Kriek), and the use of the 'méthode champenoise' where Lambic beers of different ages are mixed before bottling (Geuze). Mixed fermentation approaches are also used, where mostly a mixture of top fermenting yeasts strains and lactic acid bacteria is used (Rodenbach, Liefmans).

Some Belgian beers stand apart not so much by a specific brewing technique, but rather due to their brewing tradition. Prime examples are the `abbey beers', which originated in the Middle Ages when abbeys started to brew and sell beer to finance their needs. Nowadays, several of these ales are brewed in commercial breweries. Mostly production still happens under collaboration with the abbey which has a say in the commercialization of the abbey beer. Moreover, royalties are paid to the abbey which can be used for charity.[4]

The increasing popularity of abbey beers and their image of authentic and high quality products have recently led several brewers to introduce their own abbey beers. Often these new beers were named after a former abbey that no longer existed and without any involvement or approval of the abbey. The Union of Belgian Brewers intervened by introducing a certificate with specific requirements which have to be met in order to be labeled as an abbey beer.

[4] For example, probably the internationally most famous Belgian Abbey beer is Leffe. The abbey Notre Dame de Leffe was founded in the twelfth century. The abbey and brewery were destroyed during the French revolution. In the twentieth century the abbey was reopened. Beer production continued after World War II in collaboration with Lootvoet brewery, which was acquired by Interbrew, which later became AB InBev. Nowadays, Leffe is brewed at the AB InBev brewery in Leuven, but AB InBev pays still royalties to the Leffe Abbey.

Trappist beers are a special kind of abbey beers. These are top fermented (often bottle-conditioned) ales which are still brewed in a monastery by trappist monks themselves or under their supervision. They account for 2.3% of the total beer market, lagers included. In the last section of this chapter we document their strategy in the age of globalization.

[INSERT TABLE 1 APPROXIMATELY HERE]

Table 1 lists some well-known examples of beers from the largest Belgian breweries according to their style and whether they belong to the top, bottom, spontaneous or mixed fermentation group. Together these breweries and brands represent a large share of the total Belgian market, but do not reflect the large variety of beers which exist on the market: Hilde Deweer (2007) counted 756 different beers which are brewed and sold commercially in Belgium in 2007, excluding special-occasion brews and varieties which differ only in packaging or name (so-called 'label beers').

[INSERT FIGURE 1 APPROXIMATELY HERE]

3 Beer Consumption in Belgium

By world standards, Belgium is a major beer producer with a long history and an extensive culture of beer drinking. Around 1900, Belgium was characterized by an exceptionally high beer consumption level of more than 200 litres per capita, more than double the per capita consumption in the UK and Germany at that time (Van der Hallen, 2009). As noted by Van der

Hallen, some reasons for this historically high level of beer consumption in Belgium were the comparatively low taxes on beer, the absence or high price of alternatives beverages such as imported wine, and government policy aiming to discourage the consumption of distilled beverages. Figure 1 shows the evolution of total beer consumption in Belgium and consumption per capita. Since 1900 there has been a downward trend in total consumption with the exception of a revival in beer consumption after World War II. Beer consumption started to drop again since the mid 1970s, namely from over 1.3 billion litres to only 870 million litres in 2009, a decrease of over 30% over the last three decades. The fall in beer consumption has been even more pronounced on a per capita basis since the decreasing beer popularity was initially compensated by population growth. By 2004, Belgium ranked seventh in the list of countries by per capita beer consumption, with an average consumption of 93 litres per capita (Kirin Holdings Company 2005). Often cited explanations for the falling beer sales include a lower tolerance for alcohol (ab)use and a shift in consumer preferences to sweeter drinks. Sales of soft drinks have more than doubled over the same period and beer lost its number one position in the ranking of most sold beverage to soft drinks and bottled water since the eighties, as can be seen from Figure 2. The shift towards soft drinks has coincided with the fading tradition of drinking beer with a low alcohol content during meals, and has been linked with an increase in the susceptibility for breast cancer in youngsters (Janssens et al., 1999). The change in consumer preferences has even led breweries to reduce the bitterness of their beers. For example InBev admitted in 2004 to having changed the composition of the hops added to their lagers to sweeten up the taste (Hinderyckx and Kamoen 2008). Also contributing to the decline is the change in consumer habits and preferences as to the location of consumption: over the years on-trade sales, i.e. sales through bars and restaurants, have decreased substantially while the rise in off-trade sales, i.e.

sales through supermarkets and shops, did not compensate for these sales losses. In 2008, on-trade sales accounted for 53% of total volume sold, down from 73% beginning of the nineties.

[INSERT FIGURE 2 APPROXIMATELY HERE]

Standard lagers make up the bulk of the Belgian beer market. In 2006, lagers held a market share of around 70%. However, total sales of lager beers in Belgium have been declining over the years. The rest of the beer market is dominated by top fermented beers. The most important types and their respective market shares[5] are displayed in Figure 3. The evolution of consumption is displayed in Figure 4. For expositional reasons, the left axis measures non-lager beer consumption while the right axis measures consumption of lager beers.

Abbey beers are most popular next to standard lagers. As Figure 4 shows, despite their traditional approach, trappist beers, together with abbey beers, have seen the strongest growth of Belgian beers in terms of domestic consumption. Total volume sales of abbey and trappist beers have more than doubled over the period to almost 100 million litres in spite of a shrinking beer market.

Wheat-based white beers rank third with approximately 5% of the market. The 'Amber Ales' category mainly contains beers of top fermentation of the 'Speciale Belge' variety. Turning to the evolution of sales, the underperformance of wheat beers and amber ales stands out. Over a period of fifteen years, sales of white beers and amber ales dropped by more than 50% due to an ageing consumer base combined with increasing competition from abbey-style beers (both abbey beers and trappist beers). Spontaneous fermentation beers such as fruit beers and other lambic-

[5] For expositional reasons we excluded standard lagers from the bar chart.

based beers make up around 2.4% of the total beer market. The once very popular low-alcohol table beers hold a market share of only 2%. Special beers[6] have on aggregate seen a rise in their sales over recent years as well as fruit beers, reflecting consumer tastes switching to sweeter products.

[INSERT FIGURE 3 APPROXIMATELY HERE]

[INSERT FIGURE 4 APPROXIMATELY HERE]

4 Trade and Foreign Direct Investment

Figure 5 displays the evolution of the amount of beer brewed in Belgium since 1900 and which share of production has been exported since the middle of the twentieth century. Despite the continuous decline in beer consumption, total production has increased over the period thanks to the growing export performance of Belgian beers. Between 1975 and 1995 exports rose by approximately the same amount as the drop in consumption, leaving total production fairly stable. Over the past fifteen years, exports have soared and made up for more of the decline in domestic consumption. Consequently, the Belgian brewery sector changed from a sector focused at production for domestic production towards an export oriented sector. In 2009, almost 60% of production was exported, compared to less than 20% beginning of the nineties.[7] The recent evolution of exports to the six largest export destinations is plotted in Figure 6. Traditionally, the bulk of exports went to the neighboring countries–France, The Netherlands and Germany–but in

6 This category is a collection of other beer types such as British style beers and blonde or brown ales.

[7] Imported beers have always been a small minority of the market as foreign brands have difficulties to enter the Belgian market although their volume has been increasing over the last decade. In 2009 imported brands made up only for 10% of total consumption (90 million litres) in Belgium.

recent years exports towards the USA have risen exponentially, reflecting increased demand of American consumers for specialty beers (Tremblay and Tremblay 2005). Over the last decade, exports to the USA have risen tremendously from a mere 2 million litres in 2005 to over 130 million litres in 2009. As a result, the US is now the third largest export destination for Belgian beer, leaving Germany behind. A similar evolution can be observed for exports to Canada.

[INSERT FIGURE 5 APPROXIMATELY HERE]

[INSERT FIGURE 6 APPROXIMATELY HERE]

The majority of exports is accounted for by the largest breweries such as AB InBev. The top five exporting Belgian breweries accounted for 78.5% of the export volume in 1995, and this number increased slightly to 79% in 2009. In terms of the value of exports, the top five export share rose from 62.5% to 68.7% over the same time period. The increasing export share of the largest breweries does not imply that the larger breweries are pushing the smaller ones out of the export market. Figure 7 compares the export growth of the top five exporters, the sixth up to twentieth ranked exporters, and the remaining smaller exporters. The figure clearly shows that the largest breweries were able to significantly increase their export volume between 1995 and 2009 (+125% for the top five exporters); but the medium sized and smaller exporters followed suit, recording increases of 92% and 123% respectively. The fact that the increase in the market share of the largest exporters is more marked in revenue terms indicates that larger breweries are increasingly successful in charging higher prices for their products. But the difference in pricing between the larger and smaller exporters remains large: in 2009 the average price per litre of exported beer was 1.48 euro for the small exporters (twenty first ranked and smaller), 0.93 euro

for medium sized exporters (sixth – twenty first ranked exporters) and 0.59 euro for the top five exporters. Smaller breweries sell products which are on average more differentiated (allowing breweries to charge higher markups) and of a higher quality. Taken together, these figures clearly show that large and small Belgian breweries alike are benefitting from the increased world-wide demand for Belgian beers.

[INSERT FIGURE 7 APPROXIMATELY HERE]

An illustrative example of the increasing popularity of Belgian beers throughout the world in general and in the United States in particular, is the export performance of the Duvel-Moortgat brewery. This mid-sized brewery, founded in 1871, produces around 60 million litres of specialty beers yearly. Its main brand is the luxury strong blond ale called Duvel[8] with an alcohol percentage of 8.5%. The brewery has witnessed a remarkable increase in its international sales over the last decade with double digit yearly growth rates, leading to a turnover in international markets which is 600% higher compared to ten years ago. The brewer received an award as the best performing Flemish exporter in 2006 for its international expansion. The largest increase has been realized in the United States where the brewer benefited of the switch of American consumers to degustation beers. Nowadays the company realizes a turnover of 12.5 million euros on the US market, representing 11% of total turnover, compared to a mere 500 thousand euros ten years ago.[9]

[8] 'Duvel' is Flemish for 'Devil'.
[9] Part of the sales in the United States are accounted for by the 100% subsidiary Brewery Ommegang, located in Cooperstown, New York. The beers brewed in Cooperstown are marketed as Belgian beers.

Several smaller breweries have also developed specific export strategies. The family owned brewery 'De Troch' from Wambeek near Brussels, for example, has been brewing lambic-based beers since the 18th century. The brewery, with a production capacity of only 600,000 liters has survived the large consolidation movement in this subsector by diversifying into distinctively sweet lambic-derived fruit beers specifically targeting export markets. Exports represented 85% of this brewery's revenue in 2010. A different example is the 'Dolle Brouwers' brewery located near Diksmuide in West Flanders. This brewery of specialty beers realizes 45% of its turnover through exports, but voluntarily restricts its sales to a selection of foreign distributors in order to guarantee their brand reputation and adequate sales-service. The company recently turned down an offer to export its products to Japan for this reason.

5 The Industrial Organization of the Belgian Brewery Sector

The Belgian beer market is dominated by AB Inbev. In 2007, the brewer held a market share of 55% as shown in Table 2. This dominance is mainly a result of the popularity of its lager brand Jupiler[10] which accounts on its own for about one third of total beer sales in Belgium. In the submarket of Belgian ales (including trappist and abbey beers), the dominance of AB InBev is less pronounced. The second largest brewer active in the Belgian market is Heineken, which recently acquired the Alken-Maes brewery (previously owned by Scottish and Newcastle). Alken-Maes was the result of a merger between two old Belgian breweries and holds 13.9% of the Belgian beer market. The third largest brewery is Haacht, which is now the largest fully

[10] While Jupiler is AB InBev's top brand in Belgium, the most exported lager beer is Stella Artois. Being a standard lager in Belgium, with a market share of 7%, Stella Artois is branded as a premium lager abroad. For example, Stella Artois has been promoted for years in the UK with the slogan 'Reassuringly Expensive'.

Belgian owned beer producer. Its market share is only 3.2%, however. The other beer producers each have a market share below 3% in the total beer market.

[INSERT TABLE 2 APPROXIMATELY HERE]

Given these market shares, it is safe to state that the Belgian beer market is characterized by heavy concentration. The three largest breweries hold 72% of the market and one company, AB Inbev, clearly dominates. The Herfindahl-Hirschman index is around 3,300, well above the cut-off value of 1,800 which distinguishes between moderate and heavy concentrated markets according to the US merger guidelines.

Although the market is highly concentrated, the number of available varieties remains high. A first reason for this might be that large brewers attempt to brew a portfolio of beers from the most important styles. In Table 1 the largest Belgian brewers and a non-exhaustive list of their different brands is displayed classified by the different types of beers (submarkets). Clearly, the largest brewers are active in multiple submarkets, except for regional and trappist beers for obvious reasons. While trying to cover the most interesting sub-markets the larger breweries go at length to preserve the image of a regional quality product. This is obvious for those abbey beers which are not brewed in the abbeys but in commercial breweries and for which the breweries attempt to create an image of authenticity. Examples of large breweries producing a wide array of varieties are the Palm and Duvel-Moortgat breweries, which recently purchased the Rodenbach and Liefmans breweries which produce red and brown ales with a very specific traditional production process involving mixed fermentation, blending and year-long maturation in oak casks. Because of the specificity of the production process of these beers and their

regional characteristics, it would have been undesirable (and probably even technically impossible) for Palm or Duvel-Moortgat to centralise the production of these beers in their main breweries. It can therefore be said that, at least in these cases, the acquisitions rather saved the various brands of Liefmans and Rodenbach from disappearing completely from the market. Similarly, AB Inbev recently had to cancel plans to move production of the Hoegaarden white beer from the village of Hoegaarden because it turned out to be difficult to reproduce the Hoegaarden beer in Jupille, but also because consumers, employees and the Hoegaarden community strongly protested.

[INSERT TABLE 3 APPROXIMATELY HERE]

A second reason for the existence of a large variety of Belgian beers despite the heavy concentration in the market is the large number of small scale craft breweries. As can be seen from Table 3, almost 95% of all Belgian breweries produce less than 10 million litres per year. Together, they make up only 7% of total production. The number of varieties of beers is larger still, since most craft breweries would produce multiple varieties. The finding of a dual market structure where a large number of small breweries coexist next to a small number of large breweries that account for the vast majority of production mimics the market structure found in other countries. For example in 2000, Anheuser-Busch, Miller and Coors held together a market share of 95% in the US beer market, while the rest of the market was served by around 1,400 small scale beer producers (Adams, 2006).

[INSERT FIGURE 8 APPROXIMATELY HERE]

Figure 8 illustrates how the number of breweries increased during the last part of the nineteenth century, but then declined dramatically during the twentieth century. Around 1900, there existed over 3,300 breweries in Belgium, producing 1.6 billion litres of beer. Afterwards, the number of breweries has declined at a fast pace while the survivors increased their scale of operation considerably. There were 1,120 breweries remaining in 1940 but their number collapsed to about 100 in 1980. Since the 1990s the number has stabilized. Recently the number of breweries has been increasing again, as can be seen in Figure 9 which shows the evolution of the number of active breweries since 1988, together with the yearly number of exits and entries.

[INSERT FIGURE 9 APPROXIMATELY HERE]

Several hypotheses have been proposed to explain the large consolidation in the beer market, not only in Belgium but also in other countries (Tremblay and Tremblay 2005). One important factor is technological progress which leads to greater economies of scale, mainly due to automation of the beer production process and the acceleration of packaging (Adams 2006). A second factor is that more effective advertising can explain (at least part of) the increased concentration in a consumer product industry such as the beer sector (Sutton 1991; George, 2009). The next paragraphs provide more details about the causes of the consolidation wave in the Belgian beer industry.

According to Van der Hallen (2009), the decline in the number of breweries in the first part of the 20th century was triggered by the introduction of bottom-fermented beers in Belgium. Wielemans-Ceuppens was the first Belgian brewery to start producing lager beer in 1884,

followed by the Artois brewery and Haacht brewery. However, it took until the interwar years for the real breakthrough of lager beers in Belgium, an evolution which may have been triggered by the German occupation which exposed the Belgian consumers to their lagers. Moreover, World War I forced the closure of a large number of breweries as copper of the brewing kettles was confiscated by the Germans and used for ammunition. The retribution payments after the armistice enabled brewers to recover some of their setup costs and invest in bottom fermentation breweries (Van Der Hallen 2009).

During the inter-bellum, lager beers were considered to be at the high end of the consumption market. Not only did they have a longer shelf life but their production process was also more controlled such that the quality of the product could be guaranteed. In contrast, due to the older machinery and higher fermentation temperature the quality and taste of top fermented beers varied considerably. A final reason for consumer tastes to shift to lagers was their different look. While top-fermented beers were quite turbid in those days, bottom fermented beers had a bright, shiny and clean appearance. This was an important selling point of lager breweries as transparent glasses were introduced in the nineteenth century (Van der Hallen 2009). For example brewery Alken named its lager beer Cristal to stress its (crystal-) clear look. Also the name Stella Artois–stella is Latin for ‘star’–was chosen to stress the sparkling look when introduced in the 1920s. All these factors led the bottom bottom-fermented beers to be seen as a superior product and the top-fermenting beers as a product for the low-class worker. Consequently, sales of lager beers soared, especially when its price dropped due to technological improvements. The market share of lagers rose from a low 15% after World War I to a high 70% after World War II.

Typically, brewers needed to incur higher fixed costs for the brewing of bottom-fermented beers compared to top-fermented beers as lagers require artificial cooling during the fermentation and throughout the longer maturation time. Moreover, in reaction to the introduction of lager beers, top-fermentation breweries invested in new equipment to increase the quality of their brews. Both these factors increased the minimum efficient scale of production in the beer sector and caused the smaller breweries to exit the market as they were not be able to recover their fixed costs.

The concentration trend continued after World War II as the minimum efficient scale of breweries continued to increase. For example Kerkvliet et al. (1998) find that technological change considerably increased the minimum efficient scale of operation in the US brewing industry between 1960 and 1990. More effective and automated control of brewing, fermenting and conditioning process, automated canning and bottling techniques and more effective distribution through high capacity trucks and improved road networks all contributed to larger economies of scale (Gourvish 1994).

Next to increases in minimum efficient scale, higher advertising effectiveness has been proposed as an explanation for the rising concentration since World War II (Tremblay and Tremblay 2005). Over time advertising possibilities increased substantially, thereby ameliorating the effectiveness of promotional activities which led to an escalation of sunk advertising costs. Consequently, only few breweries were sufficiently large to earn back the costs of advertising, resulting in a more and more concentrated market structure. For example, George (2009) finds that increases in television penetration are associated with the decline of local breweries in the US. Together with the observation that the introduction of national television increased returns to advertising, this may explain the observed market concentration. Note that commercial television

started only at the end of the 1980s in Belgium. Before, there were no possibilities to advertise on national television networks. However, advertising possibilities in other media such as newspapers, billboards as well as in movie theatres increased considerably. Note that this theory can serve as an explanation for the observed "dual" structure in the Belgian beer market, namely very high concentration in the lager submarket and a less concentrated market structure in the market for top-fermented beers. Top-fermented beers are highly differentiated due to the possible addition of different kinds of ingredients and as a result each brewery definitely had its own taste of beer (Van der Hallen 2009). Lager beers on the other side are much more homogeneous products. The likelihood of an escalation in endogenous sunk costs depends crucially on how much rival market share a firm can capture by advertising (Sutton 1991) and as such on the homogeneity of the market. Consequently, an escalation of advertising spending was more likely to take place in the lager segment than in the top-fermentation segment where each brand can serve a niche market.

The consolidation wave did not only materialize through the exit of small inefficient breweries. Mergers and acquisitions between larger players also played an important role. An example of this is the story of the Wielemans-Ceuppens brewery. In 1930 this Brussels-based brewery constructed the single largest brewing site of Europe, and retained market leadership for many years. In 1978 the Artois brewery started to accumulate shares in the company and took over the administration. In 1980 the Wielemans-Ceuppens brewery was liquidated and by 1988 all its brands had disappeared completely from the market.

Another example is the history of the spontaneously fermented lambic-based beers brewed in the Brussels area. At the beginning of the 20th century these beers were the standard beverage in the wider Brussels area, with hundreds of active breweries. The combined shifts in

consumer taste and market structure during the 20th century caused the lambic-style beers to disappear almost completely, with only a handful of breweries surviving today. The remaining varieties now enjoy a “Traditional Speciality Guaranteed” status in the EU and are increasingly enjoyed by beer lovers worldwide, in spite (or maybe due to) the fact that the most authentic types of these beers are an acquired taste.

Recently, the number of active breweries in Belgium has stabilized and has even started to increase. Figure 9 shows the evolution of the number of active brewers since 1988, and the firm creation and destruction in each year. At first sight, a tentative conclusion would be that a revival of small scale breweries is taking off, comparable to the enormous increase in craft breweries in the US since the end of the eighties. For example, the number of small scale brewers in the US soared from 461 in 1993 to over 1,500 in 2001 (Tremblay and Tremblay 2005). However, note that the number of breweries in Belgium is currently around 130 for a total population of 10.5 million people, roughly 12 breweries per million inhabitants. Comparing with 1,500 breweries in the US for a population of 300 million – around 5 breweries per million inhabitants – and a slightly lower beer consumption per capita, leads to the conclusion that even without a substantial revival of small scale brewers, the number of breweries in Belgium is already at a substantially higher level. Consequently, it is unclear whether one should expect the same type of growth in the number of Belgian brewers as has been observed in the US in recent decades.

6 Where History Meets Globalization: Two Cases

In this final section we present two very different cases of 'Belgian beers' with a long, even ancient, history and how they have dealt with, and benefited from, the process of globalization.

6.1 AB INBEV

Leuven, a small city near Brussels, hosts the headquarters of the world's largest brewer, AB InBev.[11] The roots of AB InBev date back to Brewery Den Hoorn of which tax records exist since the year 1366 and which later became brewery Artois. It was here that the famous lager Stella Artois was launched in the 1920 and its logo still refers to the ancient brewery[12]. Shortly after the launch of Stella Artois, the Artois breweries became the largest beer producer in Belgium and remained so for the next fifty years.[13]

In 1987, the two largest Belgian breweries (breweries Artois and Piedboeuf) merged and the new company was called Interbrew. This was the start of a rapid external expansion, first through acquisitions in Belgium, such as breweries De Kluis and Belle-Vue, afterwards through international acquisitions of a series of East European breweries in the 1990s, the Canadian

[11] Part of the activities have been moved to a new office in New York after the acquisition of Anheuser-Busch in 2008.

[12] The Stella Arois logo shows a horn (Den Hoorn = Dutch for the Horn) together with the year 1366.

[13] The merger foundations were preceded many years earlier with a secret agreement in 1971 between Artois Breweries and Piedboeuf Breweries, one of its main Belgian rivals and producer of the lager beer "Jupiler". Officially they founded a new company to acquire an almost bankrupt brewery. However, they also secretly swapped company shares. Since back then Stella Artois had a production volume of 350 million liters compared to 70 million liters for Jupiler, the ratio at which the swap was executed, was 1/8 for the Piedboeuf Breweries and 7/8 for Artois Breweries. (Riepl 2009: 24) After the agreement, Stella Artois saw its market share declining every year while sales of Jupiler boomed and by the end of the 70s, Jupiler had taken the lead in the Belgian beer market. To fulfill demand, Piedboeuf was looking for extra production capacity and Piedboeuf and Artois started to secretly brew Jupiler at the Artois breweries in Leuven. Jupiler was brewed under the codename 'Lager' after which it was transported to Piedboeuf breweries to be bottled. Only in 1987, the merger between Piedboeuf and Artois became official and many employees of both brewers discovered only then that they had been working for years for the same company.

brewer Labatt in 1995 and Bass Breweries in the UK in 2000. As a result of the 2004 merger with the Brazilian brewer AmBev a new company InBev was created, back then the largest brewer in the world. A provisional final step in the expansion process was taken in 2008 with the acquisition of the market leader in the United States and the 4th largest brewer in the world, Anheuser-Busch. With a price of over 50 billion dollar the takeover was the largest acquisition ever by a consumer product producer (Riepl 2009). The acquisition resulted in a company producing around 36.5 billion liters of beer worldwide, about one quarter of the total beer consumption in the world.

In only a time span of twenty years, from Artois and Piedboef to AB InBev, the company has grown from two local Belgian breweries to the by far largest brewer in the world. The expansion occurred through a continuous process of foreign acquisitions. As a result, the portfolio of AB InBev consists nowadays of more than 200 brands, of which only a small amount are "Belgian beers". The internationally most popular Belgian brand, Stella Artois, accounted in 2007 only for 3.6% of total beer volume of InBev (Riepl 2009). Consequently, the success of AB InBev has little to do with the superior quality of Belgian beers, as many Belgians like to think, but more with the strategic decisions and choices of the shareholders and its management.

The company strategy of AB InBev is to keep local beers in each country. Next to these local brands, AB InBev holds a number of so-called global brands which are worldwide promoted as premium brands and use the distribution networks of the local brands to gain market share. The global brands are Becks, Budweiser and Stella Artois[14], of which only the latter is a "Belgian beer". Besides these global brands, there exist two so-called multi-country brands,

[14] Note that although Stella Artois is internationally advertised as a premium lager, it is considered to be a standard lager in Belgium.

Hoegaarden and Leffe, both 'Belgian beers', which are also internationally sold but mainly in Europe and North-America. Nowadays AB InBev concentrates the production of Belgian beers[15] in two large production facilities in Leuven and Jupille, the locations of the founding breweries Artois and Piedboeuf, and two smaller breweries.[16] Since one of the AB Inbev global brands and some multi-country brands (even foreign brands) are brewed in Belgium, a large share of total exports of Belgian beers is accounted for by AB InBev, although their market share in the total AB InBev portfolio remains limited.

6.2 Trappist Beers

A totally different case of Belgian beers with a long history and being successful in globalizing world are the trappist beers. Trappist beers are probably the most famous type of Belgian beer and regularly obtain top-scores in international competitions. While there are many beers associated with abbeys there are only seven real 'trappist beers', six of which are Belgian. The brewing and commercialization of these beers is still controlled by Trappist monks. The Trappist order is a branch of the Cistercians and originated in the seventeenth century in the abbey of La Trappe, located in Normandy. The order[17] began as a reform movement in reaction to a relaxation of practices in many Cistercian monasteries. Trappist monks strictly live by the rule of St. Benedictus of which one states:

[15] Part of the Stella Artois production is also brewed under license in the UK.
[16] One of these smaller facilities is the Hoegaarden brewery. In 2005, InBev wanted to close the brewery and move production of the Hoegaarden white beer to the larger plant in Jupille, which provoked a storm of protest in Belgium. However, Jupille was not able match the taste and quality of the beers brewed in Hoegaarden. Together with a sudden increase in popularity of Jupiler in The Netherlands and as a consequence capacity problems in the Jupille brewery, InBev revoked its decision and kept the production of Hoegaarden at its original location.
[17] The official name of the order is Order of Cistercians of the Strict Observance, but they are mostly referred to as Trappist order after the founding abbey of La Trappe.

'for then are they truly monastics when they live by the labor of their hands, as did our Fathers and the Apostles' (Chapter 48, Rule of St. Benedict)

Consequently Trappist monks produced different kinds of goods ranging from cheese to clothing which were sold to generate income for the monasteries to be self-sufficient. One of these products was beer. The French Revolution and its aftermath destroyed most of the monasteries in Belgium and most of today's abbeys were founded or restored in the nineteenth century or even later. With the establishment of the new monasteries, the brewing of trappist beers restarted. According to the official website of the Trappist order[18], there currently exist 169 monasteries worldwide (100 for monks, 69 for nuns) which occupy around 2,500 monks and 1,800 nuns. However, only seven of them house active beer breweries, six of them located in Belgium and one in The Netherlands (Brewery De Koningshoeven). The seven breweries are listed in Table 4. The oldest trappist brewery that still operates nowadays is Westmalle which opened its doors in 1836. The most recent one is the Achel brewery[19], introducing the seventh trappist beer in 1998.

[INSERT TABLE 4 APPROXIMATELY HERE]

Over the years, trappist beers have gained a reputation of being high quality, authentic products. As a consequence commercial breweries tried to profit from this brand image by introducing beers labelled to be trappists. To preserve the authenticity of the trappist beers, the

[18] http://www.ocso.org

[19] Although today's trappist beer was only introduced in 1998, the abbey of Saint Benedict in Achel had housed a brewery before until the Germans dismantled it during World War I.

International Trappist Association was founded in 1997. The association imposes strict rules to use the label of "Authentic Trappist Product", which are the following[20]:

1. Products which carry this label are produced within the walls of the monastery or in vicinity of the monastery.
2. The monastic community determines the policies and provides the means of production. The whole process of production must clearly evidence the indisputable bond of subsidiarity, with the monastery benefiting from the production, and must be in accordance with the business practices proper to a monastic way of life.
3. The profits are primarily intended to provide for the needs of the community or for social services.

These rules were enforced in 1999 against the Koningshoeven abbey which produces the La Trappe trappist beer, after it sold its brewery to the commercial Bavaria brewery. The brewery, in spite of being one of the founding members, was expelled from the International Trappist Association and was denied the right to use the official trappist logo. A settlement was agreed in 2005 which again allowed La Trappe to carry the official trappist logo under the condition that the monks should be involved again in the brewing process, working several hours per day.

The production of the different trappist breweries is displayed in Table 4. The number of liters brewed ranges from approximately 500,000 litres in the Achel and Westvleteren breweries to more than 12 million liters in the breweries of Westmalle and Orval. The most popular trappist beer, Westmalle, has a market share of 1% of the total Belgian beer market. Among the trappist beers, Westvleteren stands out in terms of its strategy in the globalized world. The abbey of

[20] See the International Trappist Association, http://www.trappist.be

Westvleteren restricts its sales strictly to the level adequate to sustain the monastery. The beer is only sold at the abbey gate. Buyers are not allowed to resell the beer and there are strict limits as to the amount which can be bought per individual in a certain span of time. When the 'Westvleteren 12' variety was rated "the best beer in the world" by Ratebeer.com in 2005 this caused a global search for this trappist beer, much to the discontent of the monks. They refused to increase their production or prices. Since 2006 an interested buyer has to go at length to obtain an appointment with the abbey before being allowed to purchase some crates of the precious beer at the abbey gates.

7 Conclusion

This chapter gave an overview of the past and current trends in the Belgian beer market. As in other traditionally beer-loving European countries Belgian domestic consumption has been steadily declining due to changing consumer preferences and slowing population growth. Changes in technology and the market structure during the last century have led to a large consolidation movement with only about one hundred active breweries remaining today.

In spite of this, in international comparisons the Belgian brewery sector and beer market are still characterized by the production and consumption of an exceptionally large variety of beers, many of which are of styles which are unique to the country. Some prime examples of this are the Lambic-based beers of spontaneous fermentation, the renowned trappist beers, traditional beers of mixed fermentation and the many specialty and abbey beers which are produced both by large and small breweries.

In recent years Belgian breweries have succeeded in compensating for the decline in domestic demand by increasing exports. Total production is increasing as both century-old family owned breweries, small newly founded breweries and the larger breweries benefit from the increasing international demand for Belgian beers.

Increasing domestic and foreign awareness of the unique position of Belgian beers may result in that the secular decline in the number of producers and varieties has come to a halt, and even may again be on the rise.

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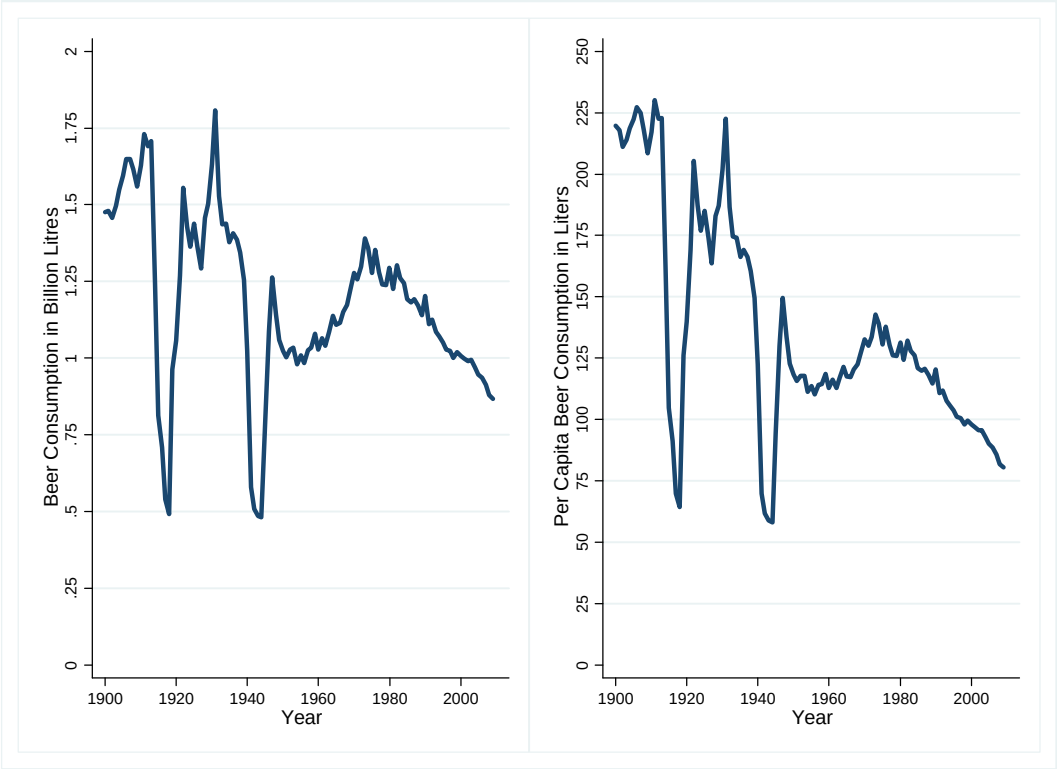
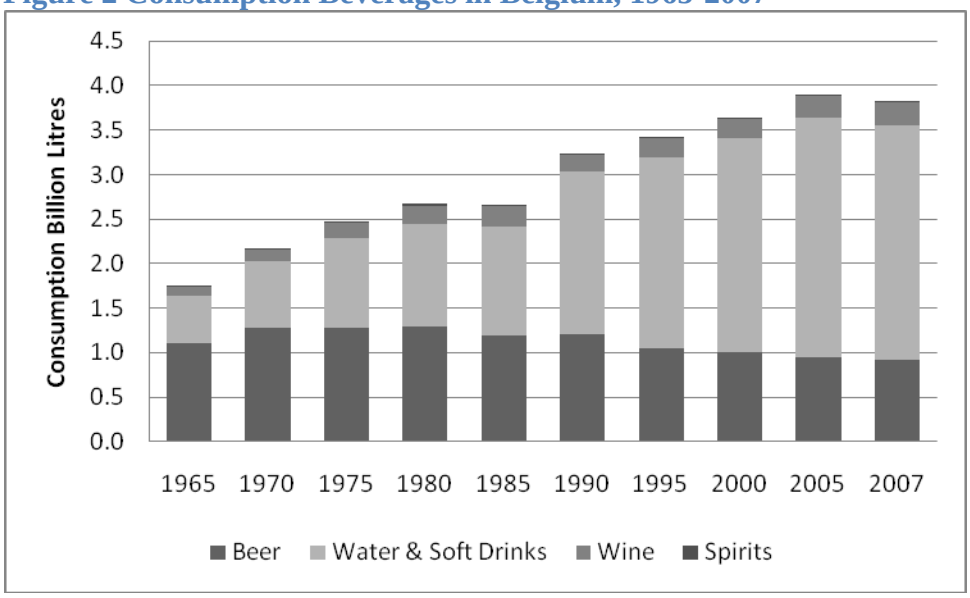
9 Figures

Figure 1 Total and per Capita Beer consumption in Belgium, 1900-2007.



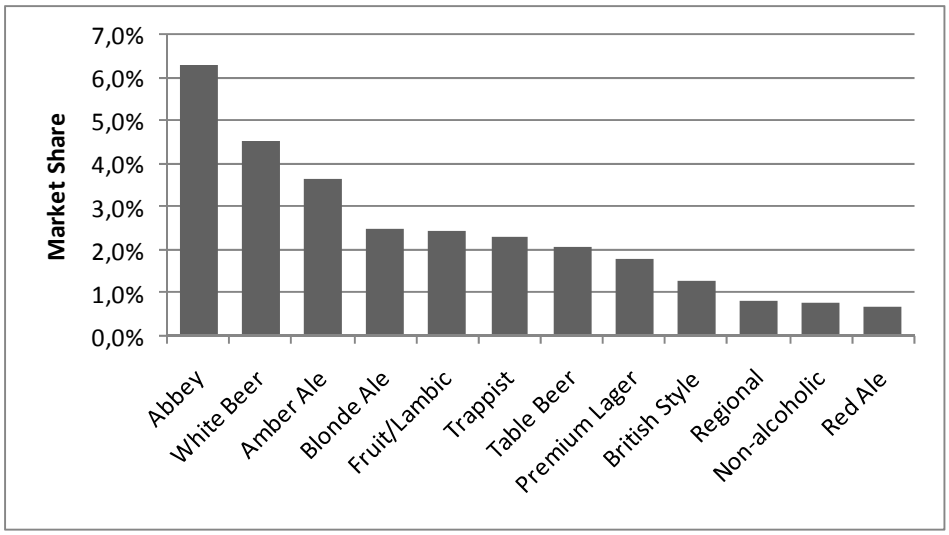
Source: Union of Belgian Brewers and Mitchell (2007).

Figure 2 Consumption Beverages in Belgium, 1965-2007



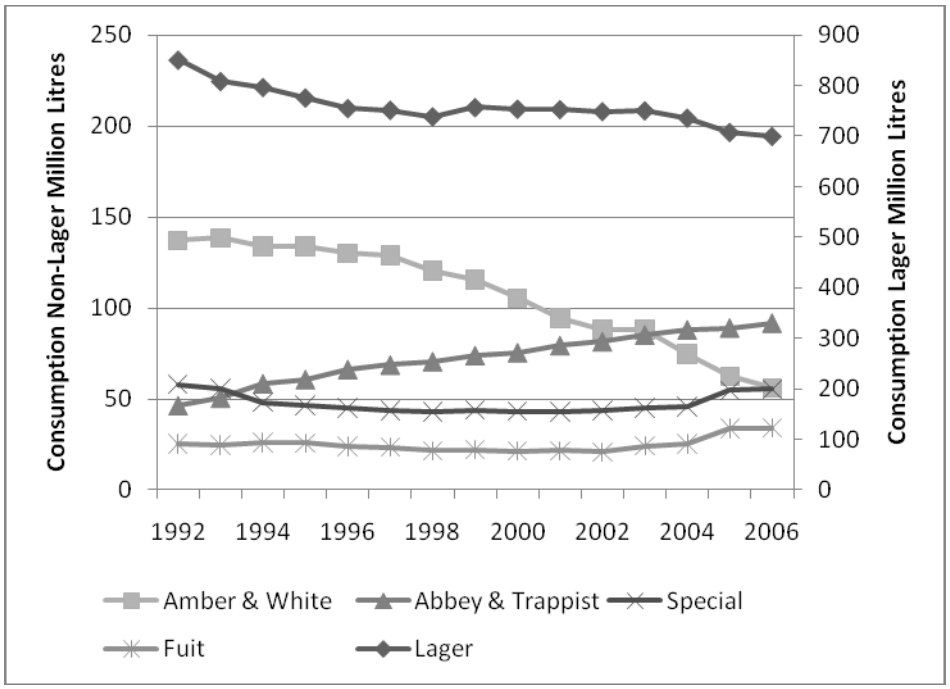
Source: Union of Belgian Brewers

Figure 3 Market Share of non-Lager Belgian Beers, 2003



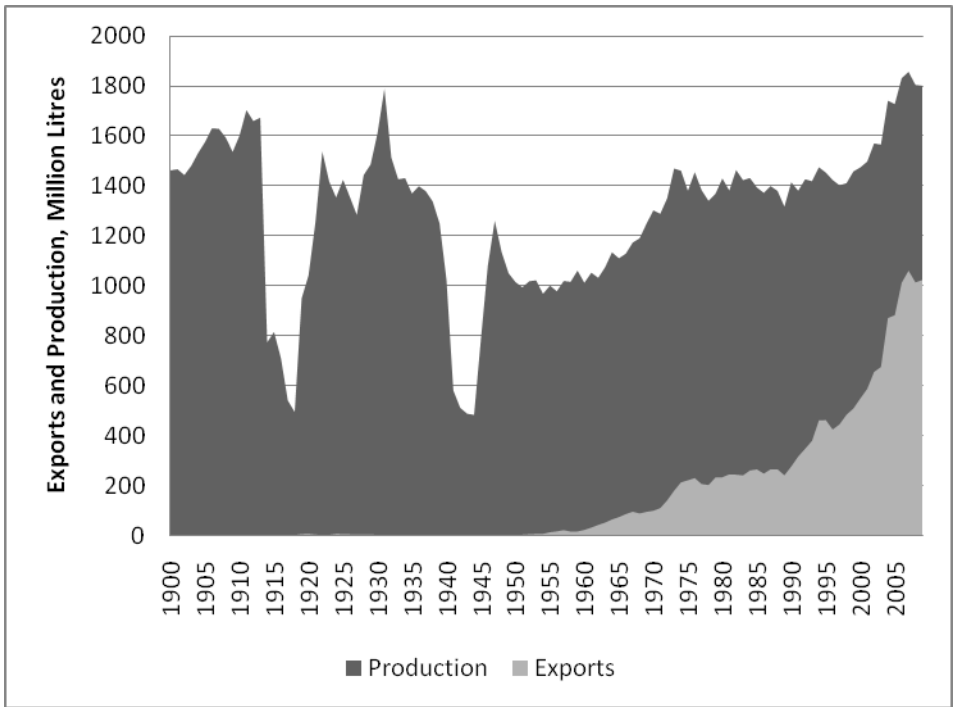
Source: Union of Belgian Brewers

Figure 4 Evolution Consumption Different Types of Beers



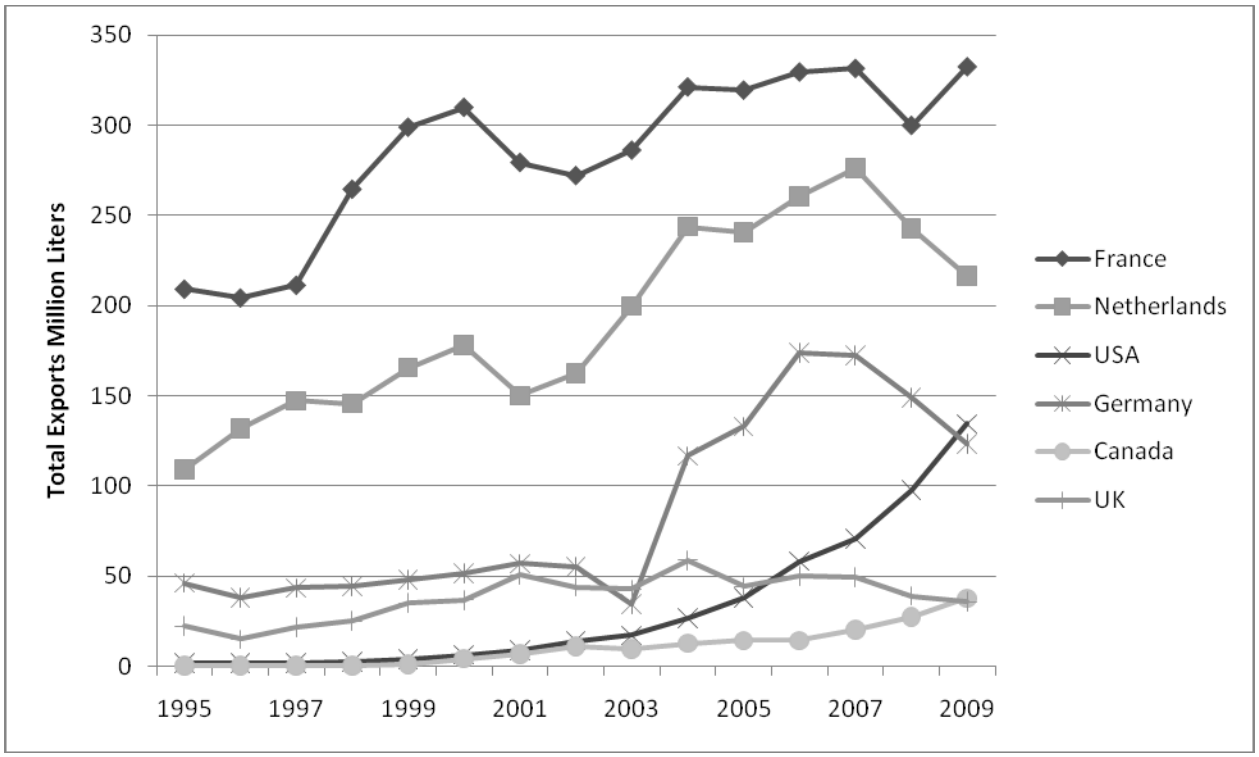
Source: Union of Belgian Brewers

Figure 5 Belgian Beer Production, 1980-2009



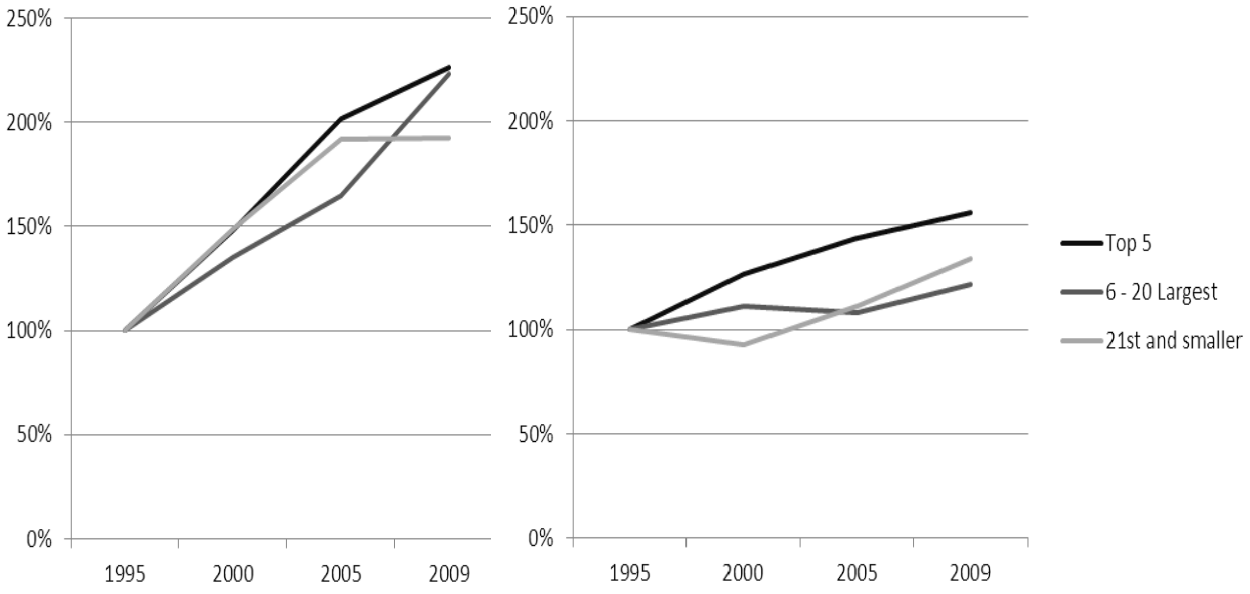
Source: Union of Belgian Brewers

Figure 6 Exports of Belgian Beers by Main Destination Countries, 1995-2009.



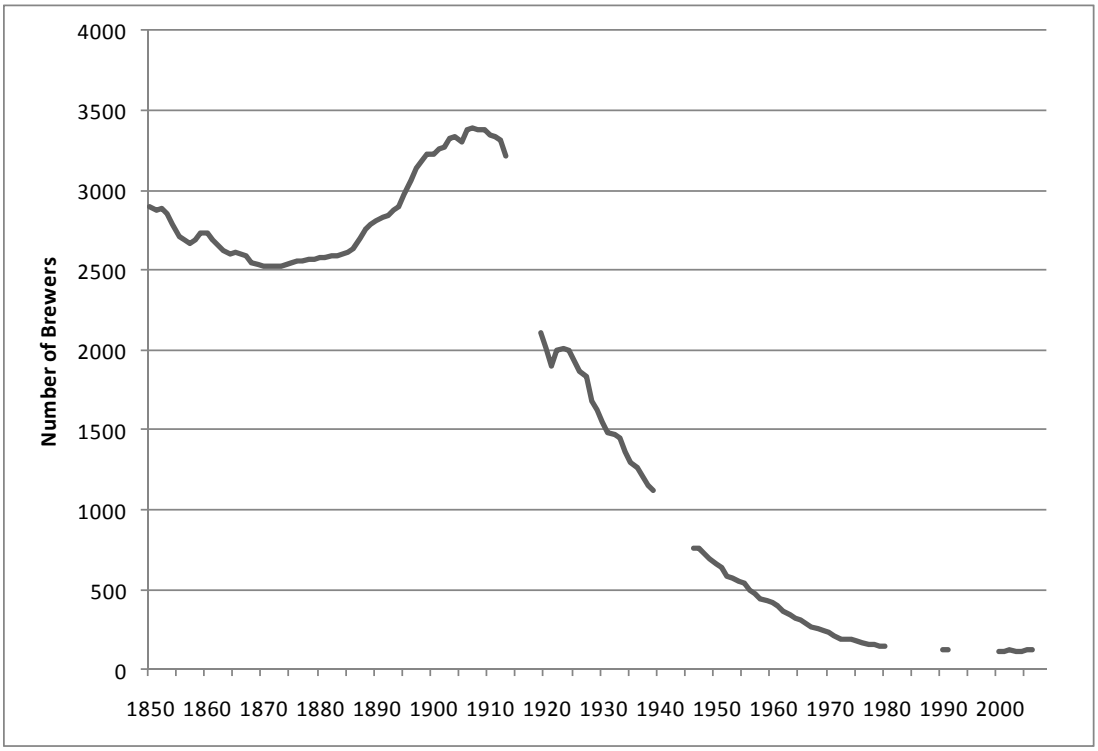
Source: COMEXT, Eurostat.

Figure 7 Export growth for different brewery sizes. By volume (left panel) and by revenue (right panel).



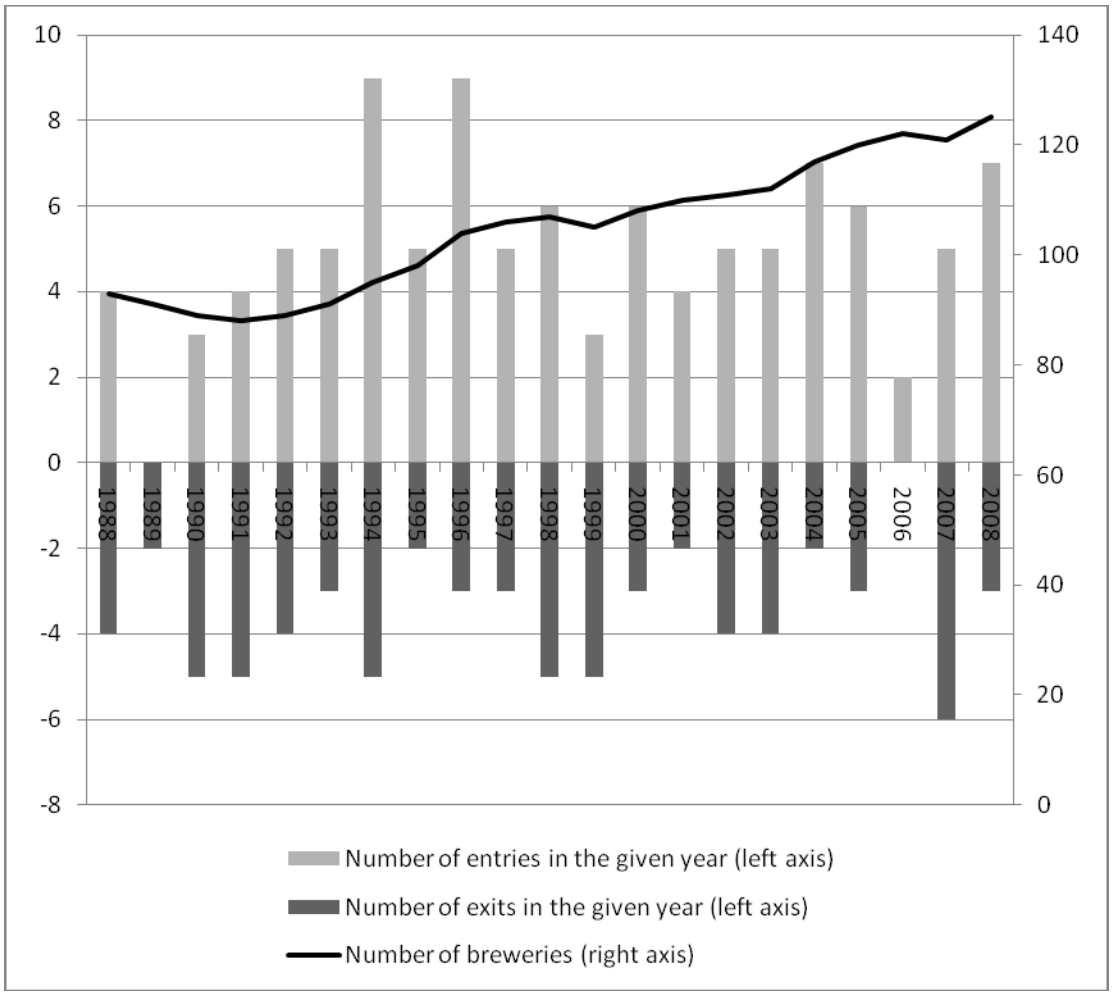
Source: Nationale Bank België, COMEXT.

Figure 8 Number of Belgian Brewers, 1850-2006



Source: Union of Belgian Brewers.

Figure 9 Number of Belgian Brewers, 1988-2008



Source: Zythos, 2010.

Tables

Table 1 Belgian Beer Brands of the Major Belgian Breweries, by Style.

Fermentation	Type	AB InBev	Alken-Maes (Heineken)	Haacht	Duvel-Moortgat	Palm
Bottom	Lager[21]	Jupiler Stella	Maes Cristal	Primus Adler	Bel pils Vedett	Bock pils Estaminet
	Table Beer	Piedboeuf	Maes Nature	Blonde		
	Non-alcoholic	Jupiler N.A.	Tourtel	Star		
Top	Abbey	Leffe (	Grimbergen Ciney	Tongerlo	Maredsous	Steenbrugge
	White Beer	Hoegaarden	Brugs Witbier	Witbier Haacht	Vedett Extra White	Steenbrugge Wit
	Amber Ale	Vieux Temps		Spéciale 1900		Palm
	Blonde Ale	Julius	Judas Hapkin	Keizer Karel	Duvel La Chouffe	Brugge Tripel
	Non-alcoholic					Palm Green
Spontaneous	Lambic-based	Belle-Vue[22]	Mort Subite[23]			Boon
Mixed	Brown Ale				Liefmans	
	Red Ale					Rodenbach

[22] Only one of the varieties of beers sold under the name "Belle-Vue" can be categorized as a spontaneously fermented beer, namely the rare "Belle-Vue Sélection Lambic".
[23] Only a subset of the varieties of beers sold under the name Mort-Subite are of spontaneous fermentation, such as, for example, the Mort Subite Oude Geuze, Oude Kriek, Faro, and Witte Lambik beers.

Table 2 Market Shares of local and foreign producers on the Belgian Beer Market.

Company	*Market Share 2004*	*Market Share 2007*
AB – Inbev (mainly through Inbev)	55.3%	55.0%
Alken-Maes (owned by Heineken)	13.6%	13.9%
Brouwerij Haacht nv.	3.1%	3.2%
Duvel Moortgat nv	2.1%	2.2%
Brouwerij Palm nv	2.4%	2.0%
Others	10.8%	11.1%
Private Label	12.7%	12.6%
Total	100.0%	100.0%

Source: adapted from Euromonitor (2009a).

Table 3 Size Distribution Belgian Breweries

Size Class (million litres)	Nr. Firms		Production (million liters)	
	Percentage	Cumulative Percentage	Percentage	Cumulative Percentage
< 1	72.1%	72.1%	0.7%	0.7%
1 -< 10	22.5%	94.6%	6.3%	7.0%
10 -<100	1.8%	96.4%	6.1%	13.1%
100+	3.6%	100%	86.9%	100%

Source: Zythos, Caldéron (2009), own calculations and inquiries.

Table 4 Trappist Breweries and their Production Volume.

Trappist Monastery	**Brand**	**Production volume (thousand litres)**
Abdij der Trappisten Westmalle	Westmalle	12,000
Abbaye Notre Dame de Scourmont	Chimay	12,300
Abbaye Notre Dame d'Orval	Orval	4,500
Abbaye Notre Dame de Saint Remy	Rochefort	1,800
Abdij van Westvleteren	Westvleteren	475
Sint-Benedictusabdij Achel	Achel	450
Abdij Onze Lieve Vrouw van Koningshoeven (The Netherlands)	La Trappe	14,500

Source: Jef van den Steen (2003)