

Perceived Market Risks and Strategic Risk Management of Food Manufactures: Empirical Results from the German Brewing Industry

Ludwig Theuvsen and Christoph Niederhut-Bollmann
Department of Agricultural Economics and Rural Development
Georg-August-University Goettingen
Platz der Goettinger Sieben 5
37073 Goettingen, Germany
theuvsen@uni-goettingen.de



Paper prepared for presentation at the 99th EAAE Seminar ‘Trust and Risk in Business Networks, Bonn, Germany, February 8-10, 2006

Copyright 2006 by Ludwig Theuvsen and Christoph Niederhut-Bollmann. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

Perceived Market Risks and Strategic Risk Management of Food Manufactures: Empirical Results from the German Brewing Industry

Ludwig Theuvsen and Christoph Niederhut-Bollmann

*Institute of Agricultural Economics, Georg-August-University Goettingen,
Platz der Goettinger Sieben 5, 37073 Goettingen, Germany,
theuvsen@uni-goettingen.de, c.bollmann@uni-goettingen.de*

Abstract

The food industry is currently facing huge structural changes, such as growing concentration ratios and degrees of internationalization and as well as the reorganizations of food supply chains. Such developments do not only contribute to growing market risks but also require strategic reorientations on the part of food manufacturers. So far, risk management and strategic planning have been two fairly separated theoretical strands. In this paper we blend both schools of thought and analyze food manufacturers' perceived market risks and strategic risk management of food manufacturers. Empirical Our data stem from large-scale empirical research in the German brewing industry.

Keywords: *Brewing industry, market risks, risk management*

1 Risk and Strategic Risk Management

Risk can be defined as any uncertainty about the achievement of a firm's objectives. Risk management deals with the potential consequences of risks by identifying, measuring and managing risksthem. Basically, There are four basic categories of a company's risks can be distinguished into four groups (Romeike, 2005):

General risks stemming from the political system, legislation, disruptive technological changes, or natural disasters.

Market risks, i.e.that is, risks associated with a company's value-creating activities, such as purchasing, production, marketing and R&D.

Financial risks due to, for instance, resulting from factors like volatile market prices, a lack of liquidity or a the weak financial standing of customers.

Corporate governance and management risks concerning, for instance, such matters as organizational structure and processes, leadership, communication and organizational culture.

In this paper we mainly focus primarily on how companies in the beverages industry perceive market risks. Due to growing risks, risk management has gained much relevance. Nevertheless, risk management does not aim at avoidingseek to avoid all risks, – which is usually impossible in most cases, – but to manageing risks in such a way that they cannot endanger the company's existence and sustainable development due tothrough their immense consequences or high probabilityies. Risk management strategies embrace all measures and mechanisms which allow to-may influence the risk situation through reducing the probability and/or the consequences of risks (Seidel, 2005). We can distinguish between four different types of risk management strategies:

Risk avoidance through, e.g., such tactics as eliminating risky activities.

- Risk reduction through reducing a risk's the probability of occurrence it will occur or its possible consequences.
- Risk sharing with other companies through, for instance, acquiring insurance coverages or outsourcing business activities.
- Risk acceptance when possible damages are small or when risk management strategies are not applicable (Schiller et al, 2005).

Strategies reflect a firm's choices and actions "to neutralize threats and exploit opportunities and strengths while avoiding or fixing weaknesses" (Barney, 2001, p. 193). We can distinguish between There are two levels of strategic management, corporate and competitive strategies:

- On the corporate level, each company has to define the businesses it is in. Decisions on products and markets, vertical integration and internationalization, marketing channels, growth and diversification are elements of a company's corporate strategy (Barney, 2001).
- On the competitive level FFfor each of its businesses a company has to decide how to find a position within an industry which that allows to generatethe generation of above-average profitability. Porter (1980) distinguishes between three generic competitive strategies: cost leadership, differentiation and focus strategies.

Risk management and strategic planning are usually two fairly distinct theoretical strands. But, of course, a company's strategies have a strong influence on its exposure to risks due to their influence on the threats the firm faces. Therefore, strategic decisions can be considered an integral part of risk management activities. Strategic risk management can take place on the corporate as well as the business level.

On the corporate level risks can be avoided through disinvestment strategies. A business a company is not in does not contribute to its risk profile. Furthermore, diversification and internationalization contribute to risk reduction since they open up new markets. Risk sharing can be implemented through outsourcing primary activities, such as production, to external suppliers (strategic outsourcing).

On the business level focus strategies shelter companies from competitive pressures in the broader market and, thus, allow them to avoid risks. Serving differing market segments, e.g. such as premium and low-price segments, has a risk reduction effect which that is to a certain degree comparable to that of diversification strategies. Innovative products are sold in less competitive market segments and also contribute to reducing market risks. Outsourcing secondary activities, such as logistics or human resource management, can be considered a way of becoming more flexible and cost-efficient in competitive market environments. Furthermore, risks are shared with external suppliers or service providers.

However, Mmost strategic risk management activities do not only contribute to the avoidance, reduction or sharing of risks but also create also new risks themselves. An outsourcing company, for instance, is afterwards more heavily dependent on external suppliers and their decisions. Diversification, internationalization and innovation are also risky decisions in and of itself themselves. So the overall effect of strategic risk management activities is mixed. They reduce existing risks, but they also create new ones. Nevertheless, in the end the risk situation looks different. Table 1 summarizes the contribution of corporate and competitive strategies to risk management.

Table 1. Strategic Risk Management

	Risk avoidance	Risk reduction	Risk sharing
Corporate strategy	Disinvestment	Diversification Internationalization	Outsourcing primary activities
Competitive strategy	Focus strategy	Serving different market segments Innovations	Outsourcing secondary activities

2 Sample

The empirical results data detailed here on market risks and strategic risk management stem from a large-scale empirical study in of the German brewing industry. This industry is characterized by many developments contributing to growing market risks, such as the market entry of large multinational competitors, shrinking demand, overcapacities, the emergence of more aggressive competitive strategies and growing concentration ratios. Furthermore, the industry consists of a large number of small, medium-sized and large national as well as international companies, all of which may perceive risks very differently and can be expected to pursue somewhat diverse risk management strategies. Therefore, the brewing industry is an excellent research object to better understand strategic risk management in the food industry.

Between January and April of 2005, 1,260 German breweries, i.e. —nearly the whole industry, —were sent an extensive, 14- pages questionnaire. Of these 281 breweries participated in the survey, contributing to an overall response rate of 22 % percent. Completed questionnaires were returned by 11.5 % percent of the micro-breweries (up to 5,000 hl p.a.), 39.2 % percent of the medium-sized breweries (10,000 to 100,000 hl p.a.), 55.26 % percent of the large breweries (100,000 to 500,000 hl p.a.) and 18 % percent of the very large breweries (more than 500,000 hl p.a.) sent back a filled-in questionnaire. Due to the high response rate, the survey allows detailed insights into the perception of risks and strategic risk management in the brewing industry.

3 Perceived Market Risks in the German Brewing Industry

In this study market risks are categorized in accordance with Porter's (1980) five forces concept. According to this framework, market risks stem from the degree of rivalry among existing competitors, the threat of substitutes, the bargaining power of suppliers and buyers, and the threat of market entry of new competitors entering the market. Referring to the five forces framework reveals the assumption that market risks are mainly associated with competitive pressures in an industry.

In the survey 82 % percent of respondents declared stated that they consider intensity of rivalry between competitors in their core market high or even very high. Nevertheless, there are remarkable differences between breweries of different size since this opinion is shared by only 66 % percent of the micro-breweries (up to 5,000 hl p.a.) but as opposed to 87 % percent of the breweries with an annual output up to 100,000 hl and without exception all the breweries producing more than 100,000 hl p.a. share this opinion. Obviously, around one -third of the micro-breweries were able to successfully reduce their firm's risks by finding a protected market niche,

whereas larger breweries have to a much lesser extent found shelter against competitive pressures to a much lesser extent.

Breweries perceive the bargaining power of various buyers very differently. The bargaining power of restaurants and pubs is considered comparatively low by most breweries. Restaurants and pubs are considered strongest by small breweries with an annual output between 5,000 and 10,000 hl p.a. This is not surprising since small breweries sell a large portion of their output through these traditional marketing channels. For large breweries this marketing channel is less important since as they rely more heavily on national retailers. Furthermore, only 33 % percent of the small breweries' sales to restaurants and pubs are distributed on the basis of long-term marketing contracts hindering that keep buyers to from changing their supplier. This percentage is the higher, increases with the size of the larger the breweries are. On average, 64 percent of sales of by large breweries (more than 250,000 hl p.a.) to restaurants and pubs are delivered on the basis of long-term contracts. Therefore, in general restaurants and pubs have on average their strongest position vis-à-vis when dealing with small breweries.

The German retailing sector is characterized by high concentration ratios. Currently, the top ten retailers have a combined market share of more than 85 percent; the top 30 companies represent about 98 percent of the market (Trade Dimensions/M+M Eurodata, 2005). Therefore, most retailers have a huge immense bargaining power; 36 percent of all respondents consider it high or very high. Since large breweries are more dependent on retailers, it is not surprising that 73 percent of all breweries producing more than 250,000 hl p.a. share this view.

The average size and bargaining power of beverage wholesalers are also increasing due to growing concentration ratios in this sector. Only 18 percent of the companies under surveyed consider wholesalers' bargaining power low or very low, whereas 48 percent perceive it as high or very high. Since large breweries are more dependent on this marketing channel than small breweries, it is again no surprise that we can observe considerable size-dependent differences in the sample.

The risk of entry of new competitors entering into the breweries' core market is perceived very differently. Only 30 percent consider this threat high or very high; contrariwise in fact, about 34 percent observe perceive a low or even very low threat of market entry. Again, clear differences between companies of different sizes are worth mentioning. The larger a brewery and its core market are, the higher it perceives rates the risk of facing new competitors.

When preparing the survey, we expected the bargaining power of suppliers was expected to be perceived as low since a shrinking domestic production in the brewing industry contributes to overcapacities on the supply side. Furthermore, suppliers face intensive competition by foreign competitors (Hofnagel & Kortmann, 1999). Contrary to our expectation, however, about 23 percent of all respondents claimed supplier bargaining power to be high or even very high. Interestingly, 32 percent of all breweries with an annual output of more than 250,000 hl but only about 14 percent in the size group between 100,000 and 250,000 hl p.a. share this view. This difference in perception of the bargaining power of suppliers may reflect the strong participation of the smaller breweries in purchasing cooperatives.

Consumers' changing consumption behavior strongly influences the threat of substitute products, such as mineral water, soft drinks or wine. Furthermore, the intensified competition with substitutes requires more elaborated marketing concepts and more product innovations in the brewing industry. The risks stemming from the market success of substitute products is percei-

ved very differently by the respondents. In the opinion of larger breweries, the situation is considered more critical by larger breweries since these companies rely more heavily on marketing channels, such as retailers, in which the competitive pressures stemming from substitute products are highest.

Figure 1 summarizes the perceived market risks of among the surveyed breweries surveyed. Disregarding size-dependent differences, it displays the mean value of for all respondents. Rivalry among existing competitors and the bargaining power of retailers are considered the most important market risks. Ranked next are the threat of substitutes and new competitors. The risk stemming from the bargaining power of suppliers is seen as least important. All in all, breweries of different sizes perceive these market risks quite differently. We hypothesize that this reveals different strategies and the different risks associated with these strategies. Therefore, strategic risk management in the German brewing industry is analyzed in more detail in the following below. We start with risk management strategies on the corporate level and then proceed with the contribution of competitive strategies to risk management.

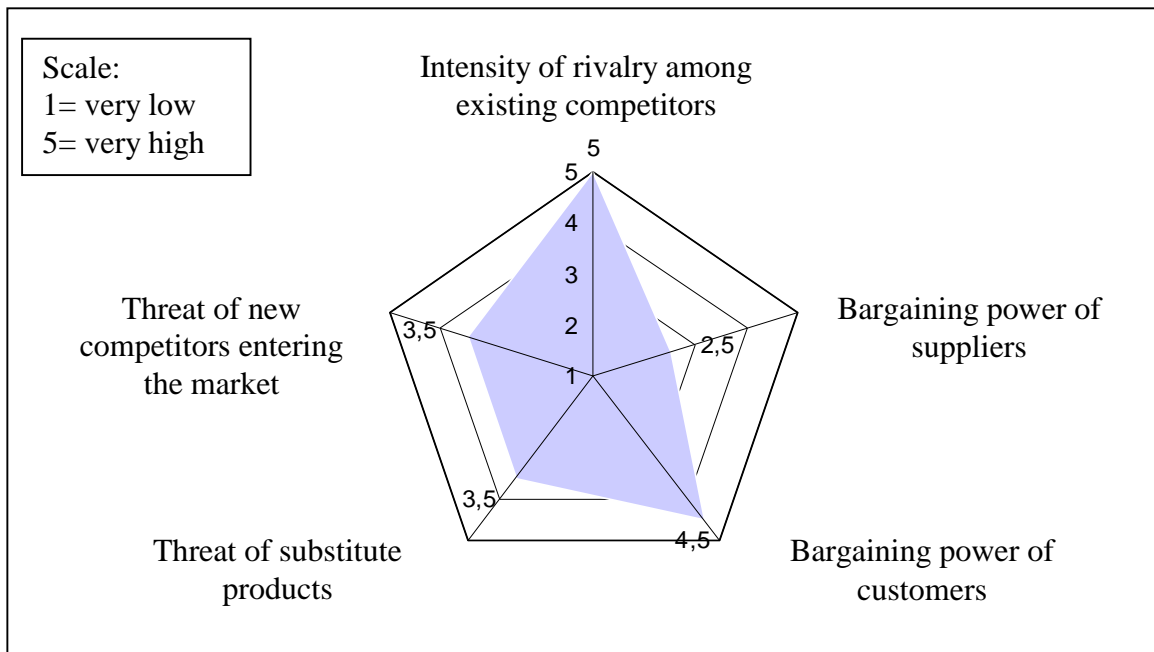


Figure 1. Perceived Market Risks in the German Brewing Industry

4 Strategic Risk Management in the German Brewing Industry

Between 1995 and 2004, the total number of breweries in Germany has remained nearly constant. Nevertheless, a closer look at Table 2 reveals that this is only due only to the growing number of micro-breweries, whereas the number of breweries with an annual output between 5,000 and one million hectoliters has been actually declining rapidly. So, obviously, deinvestment and leaving the industry has turned out to become a common strategy for avoiding risks in a more and more increasingly competitive industry.

Table 2. German Brewing Industry 1995 and 2004 (Deutscher Brauer-Bund, 2003, 2005b)

Annual output	1995	2004	Changes (in %)
Micro-breweries (up to 5,000 hl)	643	796	+23,8
Small breweries (5,000 to 50,000 hl)	393	280	-28,8
Medium-sized breweries (50,000 to 200,000 hl)	136	116	-14,7
Large breweries (200,000 to one million hl)	71	53	-25,4
Very large breweries (more than one million hl)	29	29	+/-0
Total	1,282	1,274	-0,62

Due to the prevalent risk avoidance strategy of leaving the market and the growth of the very large breweries through a the considerable number of mergers and acquisitions, concentration ratios (CR) have been increasing in the brewing industry. In 2004, Germany's largest brewery had a market share of 15 % percent compared to only 8 percent% in 1995. CR3 grew from 18.7 percent% in 1995 to about 38 percent% in 2004, and today CR5 has risen to about 51 percent% until today. So the German brewing industry is now catching up with a development which that has become characteristic fortypical of major parts of the food and beverages industry—, i.e. the “thinning out of the middle”. Thisat means that companies have to be large enough to compete with national or even international branded companies and/or cost leaders; or they have to be small enough to be able to find a market niche in which they are protected against market risks. There has not been leftNot much room has been left in -between; the shrinking number of traditional medium-sized regional beer producers reflects this development.

Horizontal and lateral diversification strategies can be implemented by breweries to develop new markets or to serve new customers and, thereby, reduce market risks (Ansoff, 1965). Marketing alcohol-free beverages (mineral water, soft drinks) is a traditional diversification strategy in the brewing industry since this business is closely related with a brewery's core activities. Of the respondents 55 percent % of the respondents have horizontally diversified into alcohol-free beverages, while. 32 percent% of the breweries under surveyed have invested into businesses such as spirits, food, catering, and event management and so on. Reducing market risks through diversification is typical of small breweries, whereas it is more or less an exception to the rule in breweries with an annual output of more than 250,000 hl.

Compared to the world brewing industry (Ebnet, 2005), internationalization strategies are of minor importance in the German brewing industry. Nevertheless, 22 percent% of the breweries under surveyed have developed international activities or are planning to develop an international business within the near future. Larger breweries have reduced their dependence on the German beer market more actively than small and medium-sized breweries reduced their dependence on the German beer market. Exports, i.e.which comprise the least intensive and least risky internationalization strategy, are the predominant form of internationalization in the German brewing industry. On average, 6.3 percent% of total sales stem from foreign markets (see Figure 2).

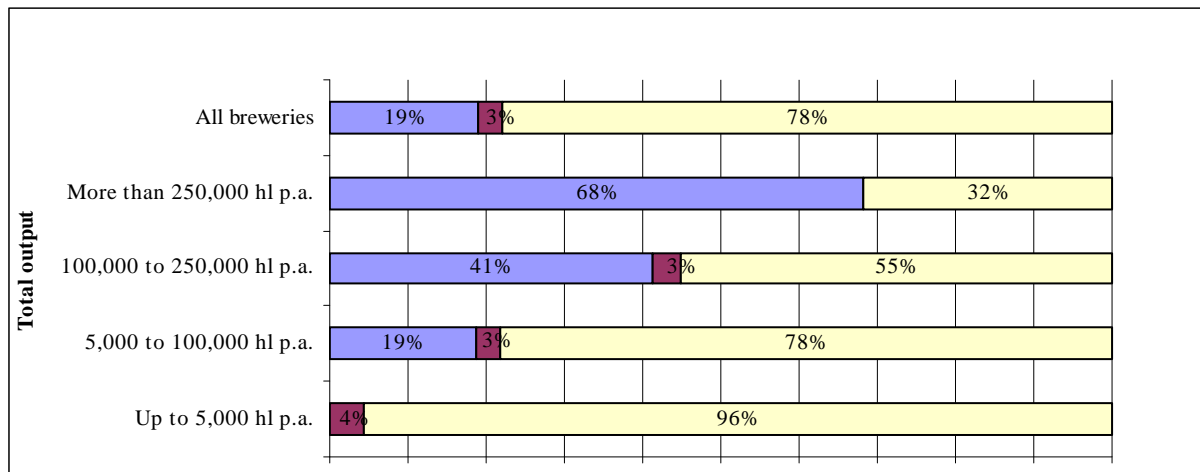


Figure 2. Internationalization of the German Brewing Industry

About 17.5 percent% of the respondents expect that internationalization will become more important in the future for their breweries. The eExport growth during the last three years has supported this point of view; on average foreign sales of by the companies under surveysurveyed have on average increased by about 23 percent %. Obviously, the entry into foreign markets has contributed to the reduction of risks stemming from sales losses on the German market.

Strategic outsourcing of major value activities has become a dominant trend in many industries, including the food and beverages industry. Soft drink producers, for instance like the Austrian Red Bull company, demonstrate that successfully managing and controlling the end of the value chain is more important and more profitable than running one's own production facilities. In the strongly production-oriented brewing industry this is still a very rare business model. Anyhow, wWhen asked whether they could imagine stopping brewing and concentrating on selling beer , only 8.5 percent% of the respondents agreedsaid that they could. Thus, in an industry characterized by huge overcapacities, sharing risks with external suppliers may become a more prevalent strategy in the future.

Competitive strategies also provide opportunities for influencing a company's exposure to risks. Focus strategies, for instance, allow breweries to find protected market niches in which they experience much lower competitive strategiesless competition than in the mass market. U.S. micro-breweries provide an example for of the successfully creationng of market niches through product innovations (Bastian et al, 1999). German micro-breweries pursue similar strategies; 57.6 percent% of the small breweries have introduced new beer varieties, which is far-clear above average.

Differentiation through innovative products usually allows companies to experience lower competitive pressures in the newly created market segment. Therefore, the innovator has a reduced risk of being outcompeted by rivalry companies until the innovation has been copied by "me-too" producers. Of course, innovation also creates new market risks. Therefore, being a fast second-mover may also provide an opportunity to reduce market risks. In our sample 45 percent% of the companies view themselves as pioneers, while another 18 percent% consider themselves as "second movers".

Serving different market segments is another strategy to for reducinge market risks. Of the breweries surveyed 41 percent% of the breweries under survey produce their own brands as well as private labels. Other breweries create different brands to serve different market segments, for

instance, such as both the premium as well as the low-price segments. Only 8 percent of the breweries under surveyed rely on a mono-brand strategy. About one-third of the respondents declare state that their main brand generates less than 60 percent of turnover; in 29 percent of the breweries the main brand's sales share of the main brand is even below 40 percent.

5 Strategic Risk Management and Success

How successful are the described risk management strategies based on corporate and competitive strategies? This question is answered exemplarily by referring to internationalization strategies which that have gained more relevance for many German breweries. Table 3 differentiates between cluster 1, i.e. —breweries with export or other international activities, —and cluster 2, i.e. —breweries which that only sell nationally only. Since the empirical data are not in a normally distributioned, we applied the Mann-Whitney non-parametrical test was used. This test The results revealed interesting differences between both the two clusters.

According to the empirical results, breweries with international activities perceive competitive pressures in their national core market as a much greater threat higher Ist dies gemeint? Der Absatz scheint, das Gegenteil zu betonen. than do non-internationalized companies. Internationalization provides an opportunity to escape these pressure and, thus, to diversify market risks. Internationalized breweries consider themselves being more competitive than their main competitors, pursue a differentiation strategy based on strong brands, serve the premium segment and put more emphasis on innovations. Furthermore, these companies are less satisfied with their market share and grow more aggressively through acquiring other breweries or brands. All in all, breweries which that reduce their dependence on the national market and, thus, diversify their market risks perceive themselves as being more profitable.

Table 3. Strategic Risk Management: Two Clusters

	Cluster 1	Cluster 2	Scale
Perceived competitive pressure	4.42** (0.535)	4.01** (0.882)	very low = 1, very high = 5
Competitive strength vis-à-vis competitors	3.36** (0.653)	2.94** (0.948)	much lower = 1 much higher = 5
Our brand is a central element of marketing.	1.60* (0.531)	1.85* (0.731)	fully agree = 1 fully disagree = 5
Retail price of main brand (crate: 20 x 0.5 l)	1.76*** (0.925)	2.41*** (1.108)	12 € or more = 1 11-11.99 € = 2 10-10.99 € = 3 and so on.
Innovativeness compared to the strongest competitor	3.50** (0.804)	3.15** (1.04)	much lower = 1 much higher = 5
We always try to be the first to introduce an innovation into the market.	2.38** (0.814)	2.80** (1.035)	fully agree = 1 fully disagree = 5
We are satisfied with our market share and do not plan measures to increase it.	3.81* (0.817)	3.43* (1.131)	fully agree = 1 fully disagree = 5
We think about acquiring other breweries.	3.64** (1.21)	4.15** (0.105)	fully agree = 1 fully disagree = 5
We think about buying brands from other breweries.	3.77** (1.068)	4.18** (0.9241)	fully agree = 1 fully disagree = 5
Changes in profitability over the last three years	4.87*** (1.65)	4.27*** (1.55)	has remained the same = 4 has grown up to 5 % = 5
Profitability compared to the industry average	3.47** (1.120)	3.00** (0.990)	much lower = 1 much higher = 5
Total annual output	2.79*** (0.863)	1.74*** (0.731)	up to 5,000 hl p.a. = 1 up to 100,000 hl p.a. = 2 100,000 up to 250,000 hl p.a. = 3 and so on

Columns 2 and 3 display mean values and – in brackets – standard deviations (in brackets) for both clusters.

***, **, *: Both clusters are significantly different on the .001-, .01-, .05-level (Mann-Whitney test).

6 References

- Ansoff, H.I. (1965). *Corporate Strategy: An Analytical Approach to Business Policy for Growth and Expansion.*, New York, McGraw-Hill.
- Barney, J.B. (2001). *Gaining and Sustaining Competitive Advantage*, 2nd ed., Upper Saddle River, NJ, Prentice Hall.
- Bastian, C.T. et al (1999).: *The Niche Market Potential: The Case of the U.S. Craft Brewing Industry.*, *Review of Agricultural Economics* 21, pp. 552-562.
- Ebneth, O. (2005).: *Globalization of the Brewing Industry. Trends, Perspectives and Strategies*, *Brewing and Beverage Industry International*, nNo. 2/2005, pp. 10-15.
- Hofnagel, J.R., Kortmann, F. (1999).: *Strategische Allianzen in der deutschen Brauwirtschaft unter besonderer Berücksichtigung der Logistik.*, Dortmund, Verlag Praxiswissen.
- Porter, M.E. (1980). *Competitive Strategy.*, New York, London, Free Press.
- Romeike, F. (2005). *Risikokategorien im Überblick*. In: Romeike, F. (eEd.): *Modernes Risikomanagement*, Weinheim, Wiley-VCH, pp. 17-32.
- Schiller, W. et al (2005). *Risikomanagement für Marken.*, Weinheim, Wiley-VCH.
- Seidel, U.M. (2005). *Risikomanagement.*, Kissing, Weka Media.
- Trade Dimensions/M+M Eurodata (2005). *Top 30 Deutschland 2004*.