Kancs, D'Artis; Kielyte, Julda

Article

Analysing sectoral competitiveness: A framework of strategic management

Journal for East European Management Studies

Provided in Cooperation with:
Rainer Hampp Verlag

Suggested Citation: Kancs, D'Artis; Kielyte, Julda (2001) : Analysing sectoral competitiveness: A framework of strategic management, Journal for East European Management Studies, ISSN 0949-6181, Rainer Hampp Verlag, Mering, Vol. 6, Iss. 2, pp. 169-188

This Version is available at:
https://hdl.handle.net/10419/90313

Analysing Sectoral Competitiveness: A Framework of Strategic Management*

*A. Kancs, J. Kielyte***

In recent years, some major industries in transition economies, such as food and beverage, once epitomised industrial supremacy have lost significant market shares to it's foreign competitors, both at home and abroad. Recognising the fact once pre-eminent world-wide economic position of former socialist economies has generally eroded significantly in recent years. Our study examines the competitive implications of the major determinants of competitiveness within a framework favoured by the Strategic Management theory in selected transition economies. Our research focuses on the three Baltic States and two of their major competitors within the Europe -Germany and EU in general. The main objective of our study is, therefore, to develop an analytical framework for analysing industrial competitiveness and to apply it to the food sector and it's related industries in these economies.

Seit einigen Jahren haben große Industriebereiche wie Lebensmittel- und Getränkeindustrie, einst überlegene Industriezweige, große Marktanteile an fremde Konkurrenzunternehmen abgeben müssen, sowohl im eigenen Land als auch im Ausland. In unserer Arbeit untersuchen wir die Auswirkungen der Hauptfaktoren des Wettbewerbs im Rahmen der Theorie des Strategic Management in ausgewählten im Wandel begriffenen Volkswirtschaften. Unser Hauptaugenmerk liegt auf drei baltischen Staaten und deren Hauptkonkurrenten – Deutschland und die EU im ganzen. Unser Hauptziel stellt dabei die Entwicklung eines Rahmens dar, mit dessen Hilfe industrieller Wettbewerb analysiert werden kann. Dieser Rahmen wird auf die Lebensmittelindustrie und verwandte Zweige in den entsprechenden Staaten angewendet.

* manuscript received: 03.10.2000, accepted: 12.12.2000;

** Mr. Artis Kancs is Graduate Research Fellow at the Institute of Agricultural Development CEE, Halle/Saale. Ms. Julda Kielyte is Graduate Research Scholar at the Europe College Hamburg.

Introduction: Alternative concepts of competitiveness

We will start with development of thought of industrial competitiveness in order to be able to sort the Strategic Management theory into. Though, competitiveness has been addressed from a number of different perspectives (Kennedy et al. 1997), no single definition of competitiveness has gained an universal acceptance between either economists or management theorists. According to the definition of MARTIN (et al. 1991) an industry is competitive if it has "sustained ability to profitably gain an maintain market share in domestic and/or foreign markets". In a broader sense competitiveness can be interpreted as an ability to deliver goods and services at the time, place, and form sought by buyers at prices as good as or better than other suppliers while earning at least opportunity costs on resources employed (COOK and BREDAHL 1991). Competitiveness is used to be discussed at three principally different levels of economy's aggregation: competitiveness of firms (microeconomic level), competitiveness of industries (mesoeconomic level), and competitiveness of economies as a whole (macroeconomic level). During the main focus analysing competitiveness lies on the meso-economic level in our study, we discuss competitive implications of various determinants at firms' and national economy's level as well.

Prior to access industrial competitiveness one must be able to measure it and to diagnose factors and determinants encourage or impede it. Though a huge of theories and models have been developed trying to explain and to assess competitiveness of industries up today, only some of them do in a coherent way. Three related schools of thought providing concepts for measuring and analysing competitiveness gained more recognition than the other ones in last decades are economics of strategic management, neo-classical economics and economics of industrial organisation DUREN (et al. 1991). Before to start with the development of an analytical framework for empirical analysis, we will discuss briefly the three alternative theories of competitiveness mentioned above.

Neo-classical Economics

The neo-classical concept of comparative advantage is related largely to the macro-level of an economy. The theory of comparative advantage, favoured by the neo-classical economics, predicts trade flows occur as a result of relative cost differentials between countries or regions, implying countries are competitive in producing goods and services they have relative cost advantages (KENNEDY et al. 1997). Concerning industry's competitiveness, from the neo-classical economics' point of view an industry is competitive in some homogenous product “A” relative to another homogeneous product “B” if it has a relative cost advantage in producing and marketing A. The neo-classical economics' concept of comparative advantage is usually applied by measuring

costs, measuring productivity and drawing inferences from the market shares. Drawing inferences from changes in market share is also one of the most significant contribution of neo-classical economics to the theory of competitiveness, since market shares reveal relative total economic performance.

The theory of comparative advantage does not, however, fit well into a world with markets distorted by various government policies BARKEMA (et al. 1990). A further drawback of the neo-classical economics is it does not account very well for qualitative differences between products, relative marketing and service abilities and the dynamics within which industries attain competitiveness. Moreover, hence the costs measured are most often the absolute costs, instead of the relative ones, the obtained information says little about the *real* comparative advantages of an industry. Measuring factor productivity and hence, comparative advantages is a justifiable indicator of competitiveness in some cases, however, in general since the total factor productivity is measured only seldom, most often the interactions among inputs and the importance of associated services are ignored biasing the real picture of industry's competitiveness (CAMBERLIN 1965; ROBINSON 1961).

Economics of Industrial Organisation

The main hypothesis of industrial organisation school is existence of a causal link among industry's structure, conduct and it's performance (S-C-P). As one of the most important paradigm pointed out by the industrial organisation theory is, therefore, importance of rivalry between firms within an industry, after which a higher degree of rivalry would increase competitiveness. Since, at its extreme, economics of industrial organisation derives from the theory of monopoly and monopsony, it favour to measure competitiveness in terms o welfare gains and losses.

The school of industrial organisation has fostered considerably the availability of quantitative data at the industry level. At the same time, however, there are some severe basic limitations to the explaining power of S-C-P paradigm including lack of convincing evidence a highly concentrated industry's structure leads to higher profits, a faulty presumption economies of size lead to anti-competitive behaviour and its ability to handle dynamic of the competitiveness (BAIN 1968; SCHERER and ROSS 1990).

Strategic Management

The strategic management approach analysing and explaining sectoral competitiveness has advanced considerably in the last two decades, primarily through the works of MICHAEL PORTER in the eighties. Focusing on the competitiveness of an industry relative to its suppliers, buyers and other threats PORTER (1985) asks how a firm should configure itself to increase its

competitiveness. 1990 PORTER extends the definition of competitiveness focusing mainly of an industry within a nation relative to its international counterparts, which is known as an international competitiveness now. Strategic management research is conducted mainly using case studies of firms, industry segments and industries. Of the three approaches discussed here, it is strongest in it's explanatory power, at least for the cases studied. It is also useful to study the dynamics of changes in industry's competitiveness. However, since strategic management research has not advanced to the point where it provides generalised statistically testable hypotheses, it cannot be used, unfortunately, to predict quantitatively the effects of public policy and management decisions on an industry's competitiveness (MILLER 1988).

Since, within a framework of Strategic Management the possession of competitiveness is associated mainly with formulation of a firm's strategy[1], the success of business depends, largely, on the establishment of an appropriate relationship between manageable variables such as production, marketing and investment decisions with exogenous environmental variables. Firm's strategy in turn must be suited also to the structure needed to implement it. In other words, strategy, structure and environment should be aligned closely, otherwise performance will suffer[2].

Determinants of competitiveness

We start with the Porter's diamond model (PORTER 1990) as a blueprint for developing an analytical tool for examining industrial competitiveness. As already mentioned above, the basic analysis unit for understanding national competitive advantage is industry in our study.

At the same time we recognise the fact countries do not succeed in isolated industries rather in clusters of industries connected through vertical and horizontal relationships, which are represented in PORTERS' diamond providing us with the four key determinants of relative competitive advantage of an industry: (1) factor conditions; (2) demand conditions; (3) firms strategy, structure and rivalry; and (4) related and supporting industries as well as government policies and external factors (chance) (s. Figure 1).

Arrows in the model indicate the diamond is a mutually reinforcing system and the effect of one determinant is contingent largely on the state of others.

---

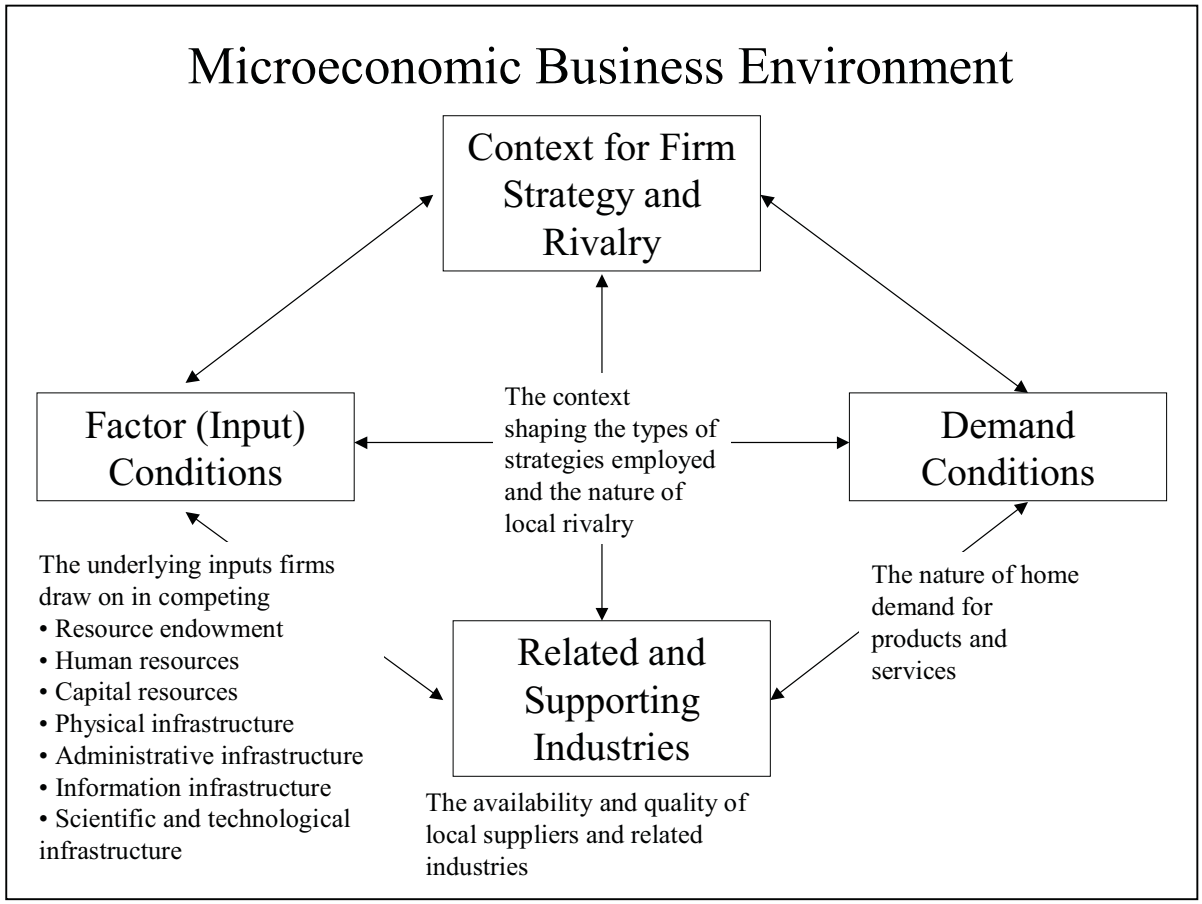
[1] Porter, for example, defines the term strategy as a deliberate search for a plan of action which develops business's competitive advantage and compound it.

[2] The broad generic strategies for companies to remain competitive, such as that of Porter are derived from a composite of numerous variations, not all of which are equally suited to a given situation and the efficiency of generic strategies may be contingent on industry structure (MILLER 1988).

Factor (inputs) conditions

Factor conditions within the strategic management framework is the endowment with factors of production, such as capital, land, labour and physical infrastructure necessary to compete in a given industry. An improvement of original factor endowment can be provided by the abundant supply of *factor (input) conditions*, including basic factors such as natural resources and capital resources, as well as advanced and specialised factors such as scientific infrastructure and pools of specialised labour. Since the East European transition economies become more advanced in their economic development during the course of transition the quality of their microeconomic business environments is increasingly influenced by advanced and specialised (e.g. research universities) rather than basic factors (e.g. raw material supply) (OECD 2000).

Figure 1: Porter's Diamond Model



Source: MARTIN and PORTER (2000).

Labour

There a re two most important labour-related conditions determining sectoral competitiveness - labour productivity and labour supply. Labour productivity is one of the most important determinants of sectoral competitiveness within a framework of PORTER'S diamond. Unfortunately, it is usually difficult to obtain

sectoral data for the appropriate productivity variable, in particular - multi-factor productivity to assess labour productivity at sectoral level. Even if the data on the productivity of individual factors, such as labour, are available, the reliance on these data can produce misleading results. However, we start an attempt in assessing relative as well as absolute labour productivity in selected transition economies – in Estonia, Latvia and Lithuania[3] in order to bring some light into the state of the art of this first determinant of competitiveness (s. Table 1).

Table 1: Absolute and relative labour productivity in Baltic and EU food sector, 1998

Country	**Labour productivity in food sector**		**Labour productivity in rest of the economy**		**Relative labour productivity in food sector**	
	in EURO	**in % (EU=100)**	**in EURO**	**in % (EU=100)**	**in %**	**in % (EU=100)**
Estonia	4931	32	6385	13	77	250
Latvia	1992	13	5105	10	39	126
Lithuania	2831	18	5337	11	53	171
EU	15450	100	50011	100	31	100

Source: Own calculations, EUROSTAT (1999).

Another important factor determines competitiveness within a framework of Strategic Management is quantitative as well as qualitative labour supply[4]. Above all dynamics of sectoral labour supply is an indicative driver representing well industry's competitive position. Sectoral labour supply can adjust in two ways to the structural changes characterising transition economies. It may quit working in a sector or look for part-time jobs in related branches, which in turn require job alternatives in close distance to firms. The existence of alternative job opportunities in related industries and services, which are able to absorb labour released by a particular sector, is therefore paramount to sector's competitiveness. Just development of alternative job opportunities for workers

[3] These three economies refer to the definition of Baltic States.

[4] Especially for small firms one should not assess sectoral labour supply without addressing the issue of how a household organises the entire labour capacity it has to offer. Such a household might be considered in analysis as a unit which offers labour for both firm and other household government employment.

formerly employed by agri-food sector is going to be facilitated by the Rural Support Fund of Agenda 2000, which has launched special programs targeted to diversification of the rural economy and the creation of additional and alternative jobs (EU COMMISSION 1998; MEYERS et al. 1999). Since labour in general adjusts more gradually than capital to the market economic conditions, the agri-food sector's peculiarity of relatively high labour-capital relation smoothen it's competitiveness especially in transition economies, where the the amount of structural adjustments is still considerable.

Capital

Capital resources as well as functioning of capital markets are further important drivers of competitiveness within a framework of Strategic Management. During, there are enough capital resources available for short- as well as medium- and even long-term investments in the Baltic countries, the functioning of capital markets still is far behind an desirable one being one of the bottleneck conditions determining international competitiveness of these economies. Especially, privatisation and restructuring of banks was very much in need for establishing functioning capital markets at the beginning of economies' transition. Though, this process has progressed considerably in all three Baltic countries within the last decade, capital markets are not functioning as well as they should yet in order to be able to strengthen agri-food industry's competitiveness. As with land markets discussed below this statement refers more to total turnover rather than government regulations. Above all, rural areas still suffer from insufficient developments of the banking system in Baltic countries. In Latvia, e. g., there is only one bank provides broadly loans to food processing and agricultural companies. Credit unions have been established in Lithuania to overcame the supply-side shortages on the rural capital markets. Tough, more than a two dozen credit unions had been established in different regions by the end of 1999 there, for many agricultural and food processing firms the problem of receiving loans is compounded by lack of collateral due to their high share of leased land. Another reason for low turn over in rural capital markets, and hence, low investments hampering inter-sectoral competitiveness is the relatively low internal rate of return making it difficult for food processing and agricultural sector to compete for credit with other sectors of the economy. Finally, the amount of savings in the country side is generally low because of the smaller income earned by the people living rural, which also smoothen agri-food sector's competitiveness compared to the other branches of the economy.

Land

Like capital, availability of land (supply) on the one hand and presence or absence of functioning land markets on the other hand determines largely agri-food sectors competitiveness, above all, due to the outstanding role of land as a

production factor in this sector. Furthermore, since land is physically immobile and hence can only be moved between firms located within a region, only a perfectly working land market will ensure land always go to the firm making the most efficient use of it.

During agro-food sector is favoured in terms of arable land per capita in Baltic countries, land market is not functioning as well as it should in order to be able to contribute to the agri-food sector's competitiveness. However, in opposite to the capital markets, the most important constraints are the legal ones. Since all three Baltic countries used restitution as the form for privatising land at the beginning of economies' transition, it is unreliable it has led to an optimal farm structure (s. Table 2). Though endowment with land per capita is considerably larger in the Baltic countries, the allocation of land between producers is much more effective in their European competitors (s. Table 2). Therefore, since re-allocation of land is necessary to improve farm sizes and hence to strengthen competitiveness from the efficiency point of view, well-functioning land markets are required more than other land factors today.

Table 2: Endowment with land in Baltic countries in comparison to EU, 1999

	Agricultural land		**Farm size**	
Country	**1000 ha**	**ha/capita**	**ha**	**ha/capita**
Estonia	1 433	0,98	29,4	0,77
Latvia	2 508	1,01	23,2	0,73
Lithuania	3 356	0,95	22,1	0,80
EU	134 261	0,36	46,3	0,20

Source: Own calculations; Central Statistical Bureau of Latvia (1999);. Statistical Office of Estonia (1999), Department of Statistics of Lithuania (1999); ZMP (1999).

Furthermore, relatively high transaction costs characterising transition economies in general restrict additionally selling or leasing of land, and hence land transferability, which is one of the basic legal drivers of sectoral competitiveness within a framework of strategic management.

Physical infrastructure

Developed infrastructure, especially the road and railway systems seems to be unavoidable for keeping competitive a particular region. Well developed infrastructure facilitates trade between regions and enable regions to specialise them into producing good sand services they have relative cost advantages and,

hence strengthening their international competitiveness. Recognising the crucial role of infrastructure into the agri-food sector's competitiveness, the EROPEAN COMMISSION (1998) emphasises necessity of an fast upgrading of transportation infrastructure including border crossing facilities in the Baltic states. However, no agreement has been reached yet with regard to the implementation of the infrastructural policies into these economies. As a matter of fact, opinions in this respect still are rather far apart the dividing line running between current and new members.

However, besides the level and density of infrastructure available, the kind of infrastructure as well as it's setting in a particular region influence strongly regions and, hence the resident industries' competitiveness. Modern transportation systems e. g. just connecting large cities without stopping in the country side will unlikely increase rural economies' competitiveness. The competitiveness policy recommendations will, therefore, be some different as those made by the neo-classical economics school favouring primarily facilitating of inter-regional trade.

Demand conditions

Demand conditions are the nature of home as well as export demand for the industry's products and services. Industry's *demand conditions* are provided by sophisticated and demanding customers, whose demands spur the local firms to innovate in order to upgrade their product/service offerings. Particularly valuable is the pressure from local customers anticipate the nature of demand elsewhere in the world (MARTIN and PORTER 2000). Since demand is one of the cornerstone-factors determining competitiveness as well as in the formulation of private business strategy we included a variable in our model representing changes in demand over time for food products (s. Table 4). Although, this variable does not explicitly account for relative prices and incomes, it reveals changes in preferences and the extent to which these where reflected in consumption. Table 4 reveal also the food industries Baltic economies are much more favoured in terms of food expenditure share in total income (consumption).

Domestic utilisation of agricultural and food sector output depends a large extent on income growth. Since, economies and hence per capita income in transition countries grow faster as in the developed countries (though at considerable different rates), one would expect the processing industries get a greater chance to develop and, hence to increase their competitiveness at home and abroad. At the same time, one should recognise, as income grows, food consumption do not change considerably in terms of more caloric intake, but rather in terms of quality and type, implying implicitly changes in consumer preference are to be expected in the near future will initialise a shift toward a higher quality food and, hence, require more refined and more processed food.

Especially the demonstration effect is important in this respect - an increase in trade of the Baltic with western countries, rising relevance of foreign direct investments in food processing and distribution within these economies, and booming travelling abroad strengthen all together this learning effect and induce in such a way convergence of food consumption patterns between the Baltic and the western European countries. Converging demand patterns have in turn twofold implications on the competitiveness of these economies. On the one hand (on the shorter one), competitiveness of the Baltic food industry will be exposed by increasing popularity of Western European products, which increase their market shares in these countries. On the other hand, changing demand patterns in Baltic countries their selves bring nearer goods and services of domestic food industry to their western competitors increasing their competitiveness on the long run.

Table 4: Food expenditure share of total household income (in %)

	1989	**1991**	**1994**	**1995**	**1996**	**1997**	**1998**
Estonia	28,2	31,8	29,7	32,3	32,0	29,8	27,7
Latvia	30,3	44,4	42,5	44,2	53,7	49,0	46,0
Lithuania	34,9	38,3	57,3	57,5	55,0	52,2	48,0
EU	17,5	17,4	17,3	17,3	18,1	17,7	17,5

Source: OECD (1999); WIIW (1998).

Related and supporting industries

Related and supporting industries means within a framework of strategic management the presence or just in opposite, the absence of internationally competitive up- and downstream sectors, existence and quality of trade channels, wholesale and retail companies. Such industries can e.g. help firms to compete innovating and creating more unique ways of meeting customer needs without needing to make all the investments by themselves (MARTIN and PORTER 2000). Besides the presence of supporting and related industries the relationships between firms and their suppliers and customers are also crucial for the firm's competitiveness. Such linkages include the processes by which buyers and sellers negotiate prices and terms of exchange, co-production arrangements and/or the services associated with a business transaction. In a broader sense these relationships to the related and supporting industries include any action or arrangement is beneficial to both parties. Agricultural sector's competitiveness is affected e.g. by the type and quality of products it buys from agricultural firms and prices paid. Agriculture, in turn impacts

competitiveness of the food processing and distribution industries by supplying these goods at those prices.

Downstream industries

During the time economies of Baltic states were planned centrally agri-food sector's inputs were provided by the co-operatives or state firms. With the beginning of transition these services were taken over by private companies mostly, which had to establish among others new business relations for buying inputs and for selling outputs. In the Baltic countries not all of these services are established well yet, hampered particularly by the development of small scale firms. Especially food processing sector's downstream industry - agriculture, is not producing efficiently yet in Baltic countries in comparison to the Western European leading to relatively higher input prices, and hence, smoothening the food processing sector's competitiveness.

Strengthening the agri-food sector's competitiveness might be enhanced by reallocating parts of the up stream but especially the down stream industry into the rural regions because some raw material cannot be hauled over a too large distance making factories which process these goods very dependent on sufficient local supply. Milk, live animals, fruits and vegetables belong to this group. This should be accomplished simultaneously with restructuring these industries, which is a short term of government policies in these countries.

Upstream industries

Presence and quality of upstream industries are besides downstream industries one of the most important drivers of transition economies competitiveness, since just the relationships between the industries have been destroyed most severely during the course of systemic changes. Problems facing food processing firms regarding selling their products are similar to those of buying raw agricultural inputs. The greatest challenge concerning sectoral competitiveness have been for agri-food sector, therefore, establishment of new market channels for distribution and selling goods and services produced. This created, however, severe problems, especially for small scale firms having only small quantities for sale, because *wholesale markets* have been established only with substantial time delay and often are not functioning properly yet. Because of the des-integrated wholesale markets finding a buyer requires a substantial effort even today for some products like vegetables and fruits. Large scale firms are much better off in this respect, especially if they could retain their relations with food processors, distributors and retailers.

Establishment of an appropriate market information system is among the most favoured policy tools for strengthening the positive feed-back effects of vertical co-operation in the agri-food chain and hence of increasing it's competitiveness within a framework of strategic management. Especially the newly established

firms in the up- and downstream sectors, which started their business in the transition years need detailed information about market conditions for an efficient response to market signals. However, one should recognise, since the intensity of processing differs among various commodities (e. g. slaughterhouses and meat packing and canning of fruits and vegetables require more inputs than milling), strengthening vertical integration can have varying supporting impacts between related industries.

Firm strategy, structure, and rivalry

Firm strategy, structure, and rivalry mean the conditions companies are created, organised, and managed, as well as the nature of domestic rivalry (PORTER 1990). Firms' strategy and rivalry is a beneficial pressure to increase competitiveness so far it causes local competitors to feel the need to continuously seek unique ways to better meet customers' needs. Such a context typically requires a number of firms competing in the same jurisdiction (MARTIN and PORTER 2000)

Firm strategy

Firm's strategy is one between the few determinants of competitiveness being active at a micro-economic (firm) level. There are many of strategies a firm can go in order to attain and/or sustain it's competitiveness. Among many others has Porter tried to group these generic strategies distinguishing between include low cost, differentiation and focusing strategies. Which one is the most appropriate in a concrete situation depends from many of factors (for a detailed discussion of these factors see e.g. HORN 1985). Porter regards, however, a firm involved in more than one of the strategy's concepts as a 'stuck in the middle' and guarantee low profitability only. In order to be able to analyse agri-food sector's firm strategies in Baltic economies, we will look briefly at the advantages and disadvantages offer each of these strategies.

Low cost strategy

Firms pursuing this strategy aim to become the lowest cost producer in an industry. The activities include cost reduction from experience, setting up efficient-scale facilities, tight control of overhead, minimisation of costs in areas, such as R&D, sales force, advertising and so on. These firms stay in a predictable and stable environment and make full use of cost controls. The adoption of a low cost strategy, together with the benefits gained from experience effects can result in a firm gaining competitive advantage (AMIT 1986). A typical example of an industry pursuing low cost strategy serve food retailers in Germany (s. Table 3).

Differentiation strategy

A differentiation creates uniqueness in a product or service through design or brand image, technology, customer service, or other attractive features. Firms use to differentiate along several dimensions in order to create market entry barriers, e.g. offering high quality and innovative products. The adopters of this strategy have to be supported by extensive research, product design and marketing expenses (HILL 1988). In opposite to Germany firms in the food retail sector in United Kingdom choose most often the differentiation strategy in order to sustain or improve their competitiveness.

Table 3: Trade margins in Baltic countries and Germany, 1998 (EURO/kg)

Product	Estonia	Latvia	Lithuania	Germany
Milk	0,11	0,14	0,12	0,26
Beef	1,08	1,22	0,98	1,54
Pig-meat	1,04	0,84	0,95	0,91
Wheat	0,07	0,07	0,04	0,08
Rye	0,06	0,08	0,07	0,09
Rape seed	0,10	0,14	0,10	0,16
Sugar beet	0,02	0,01	0,01	0,02

Source: Own calculations; OECD (1999).

Focus strategy

A firm practising the focus strategy select to compete within a narrow scope in an industry. It chooses a segment or a group of segments of an industry and tailors its strategy to serve the customers. In this case the firm either engages in cost focus by a cost advantage strategy for its target segment or adopts the differentiation focus approach to seek differentiation for the segment.

Rivalry and concentration

Given the inherited monopsonistic and monopolistic structures of state enterprises in food processing and retail sector at the beginning of economies' transition course, antitrust regulations played an important role in enhancing competition and, hence, competitiveness. All three Baltic countries implemented appropriate anti-trust legislation already at the beginning of transition, to which all companies, including those of the food sector, are subjected. Moreover, anti-monopoly committees were established to monitor

the situation in the commodity as well as service markets and to enforce the anti-trust law.

Due to this rigid legal framework as well as due to emergence of many small scale private enterprises, competition has become considerably stiffer in food sector in recent years. Opening up international trade helped also to stimulate competition, which increase competitiveness of the Baltic agri-food sector in long run.

In order to include some of the concerns of the industrial organisation school in our analysis on competitiveness, we calculated the rate of industrial concentration CR4 for food processing sector for Baltic economies as well as for selected EU economies, which provide us with a rough indicator of relative industry scale and structure (s. Table 5).

Table 5: Concentration ratios of the four largest firms for food sector in 1999 (in %)

	Milling processing	**Meat processing**	**Dairy processing**
Estonia	34	52	59
Latria	62	48	56
Lithuania	43	40	32
Germany	38	24	34
France	29	21	23

Source: Own calculations, OECD (2000).

Furthermore, in order to assess plausibility and reliability of the results calculated, we compared these results with assessments of industry's concentration as well as industry's structure obtained from managers of these industries.

Since exploiting market power results, among others, in higher prices the organisation of markets at which firms are buyers and sellers carries also importance for firms competitiveness. The more buyers of food products and sellers of inputs have market power the more difficult is it for small firms to be able to enforce their profit interests. Large firms, in opposite, have due to the higher quantities of equal quality these firms can offer an advantage under these circumstances. For reaching equal market conditions and, therefore, improving competitiveness small firms have to co-operate in marketing their products.

Firm Structure

One of the most important group of structural determinants of an industry's competitiveness are economies of scale. At the beginning of transition course replacement of machinery and equipment as a result of structural changes caused by transition processes shifted optimal use of economies of scale outward. Since small scale firms have severe difficulties in exploiting the advantages of technical progress, especially in the food sector, where the rate of technical progress is higher as average the capacity of firm production, technical efficiency was to be increased putting additional pressure on enlarging the firm size. Possibilities to realise this have been offered among others by sharing machines between several firms or by hiring customs service. In some cases, like at financial markets it has even be the only way to obtain a credit. Since small firms require only relatively small loans, high transaction costs accruing to the lender make these credits expensive. This, however, often pushed total costs of the loan beyond the limit small firms can afford to pay. (MEYERS 1999) Furthermore, firm size also affects possibilities to hedge against risk. Various forms exist to carry out these activities, most of them are easier for larger firms than smaller ones. Though, a variety of possibilities for firms exist to insure against various forms of risks only few co-operative ones exist in Baltic countries still.

In summary, the optimal size and organisation of a firm strongly depends on how all the determinants mentioned above play together, which is a very complicated and complex interaction. This can be also seen from the fact food processing firms in Baltic countries vary considerably in terms of size and organisation as well as over the time. Any prediction of development of food industry's competition in these countries can be, therefore, made difficult by the uncertainty involved in foreseeing path each of these determinants will follow. Generally speaking, above all size and organisation of firms have to be adapted to the new "market economy conditions" in order to remain efficient and competitive. However, since conditions for this adjustment process is far unequal between firms, speed of this adjustment process and, hence, dynamics of competitiveness will vary very much.

Government

To build a complete system in terms of strategic management theory, we introduced two further variables in our model, *chance* and *government* determining industry's competitiveness. PORTER (1990) defines the central goal of government as "policy toward deploying regions resources (labour and capital) with high and rising levels of productivity". While chance events (such as technological discontinuity and wars) are outside of the control of government and firms, government policies can influence other determinants of competitiveness severely. Government can, however, not only influence, it can

be influenced by each of the other four determinants as well. Government is notably discussed in treatments of international competitiveness. ESSER, for example, characterise government as "a vital, if not the most important, influence on modern international competition" (ESSER 1996). However, government policy will fail in long run if it remains the only source of national competitive advantage.

Macroeconomic policies

Generally, food sector's competitiveness is influenced strongly by the performance of the macro-economic conditions as well as by the policies used to steer it. As far as food-industry in transition economies is concerned, exchange rate and monetary policies are the most important ones and will be treated in more detail therefore.

At the beginning of economies' transition all three Baltic countries pegged their nominal exchange rates to a basket of western currencies or to just a single one. Although this policy have been justified from the macroeconomic point of view it has substantial effects on the real exchange rate[5] and hence on the international competitiveness of domestic industries (EDWARDS 1988, p. 5). Unfortunately, statistics do not offer sufficient data for calculating the real exchange rate for transition economies in the precise way. One alternative is to rely on the purchasing power parity (PPP)[6] (ROGOFF 1996; SURANOVIC 2000). Therefore we used the consumer price index (CPI) for the respective Baltic countries as the domestic price, and one for Germany[7] as a foreign price for assessing PPP. Our results reveal nominal currencies' devaluation in the Baltic countries has not been strong enough to fully compensate for different developments in the inflation rates between the respective Baltic countries and Germany, thus leading to a real currencies' appreciation in these economies during the period 1990 to 1999.

This implicit appreciation of the national currency during the transition years contributes to explaining reasons raised difficulties for food producers and exporters in these countries to compete with their foreign competitors. Though exchange rate stability helped considerably to reduce inflation, these

[5] While the nominal exchange rate is the relative price of two currencies, the real exchange rate is defined as the ratio of two price indexes, the price index for tradable goods and that for non-tradable. Thus, the real exchange rate is an approximate indicator of competitiveness, as it can be interpreted as reflecting the cost of producing tradable in the domestic economy.

[6] The PPP exchange rate is the nominal exchange rate times the ratio of foreign to domestic prices.

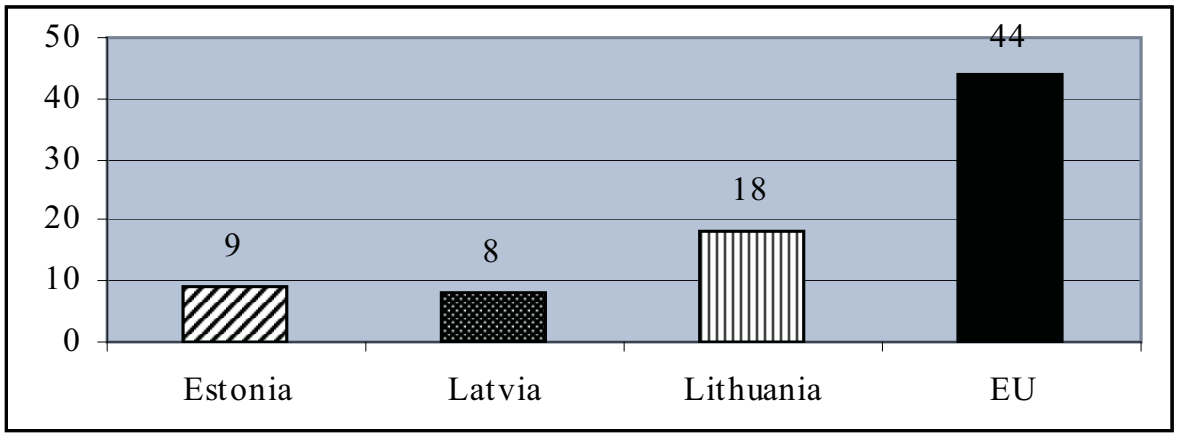
[7] Germany may be seen as reflecting the same exchange rate changes as many members of the EU

macroeconomic policies represent a serious impediment to industrial competitiveness in these economies. On the other hand this reveals the paramount importance of the nominal exchange rate in applicant countries with the EURO at the time of entering the EU.

Sectoral policies

Policies applied to the agricultural and food product markets differ considerably between the Baltic countries. Although, all three of them implemented measures dimmed at stabilisation of domestic market prices and enhancement of exports for food products, the types of policy instruments used vary largely between the countries. They include market interventions, export subsidies and import tariffs. In the cases where domestic supply was interrupted more severely, there has been made use of export quotas to assure sufficient supplies for domestic consumers. Protection of agri-food was generally reduced immediately after the collapse of the communist system (s. Figure 2).

Figure 2: Protection of the Food Sector in Baltic and EU, 1997 (PSE), in %



Source: OECD (1998).

In order to increase food sectors international competitiveness, import protection has been increased in all three Baltic countries during recent years. Together with export subsidies granted, this should have led to a positive impact on food product foreign trade balances, but exactly the reverse has happened. However, other factors such as the appreciation of real exchange rate mentioned above, lack of quality and insufficient sanitary and phyto-sanitary standards, as well as inefficiencies in the food industry have obviously overcompensated these effects.

Though, Estonia, Latvia and Lithuania created the Baltic Free Trade Area (BFTA) with a special component for food and agriculture (BAFTA, since 1 January 1997), they have severe problems still especially with regard to the

trade with highly processed food products. These bilateral trade distortions show clearly the agreements signed up today do not cover sufficiently issues arising from the differences in competitiveness among their members. On the other hand they indicate well the importance of recognising competitiveness issues in sectoral as well as in macroeconomic policies within a framework of EU Eastern enlargement.

Conclusions

The causality between sectoral competitiveness and it's determinants as well as the potentials and constraints of the Baltic agri-food sector have been analysed in this study within a framework of Strategic Management. Empirical support to the arguments distributed is provided as far as it was allowed by the scarcity and unreliability of data about these issues in transition economies.

The empirical results reveal, although, the endowment with natural resources, above all arable land, required by agri-food industry is very favourable in these economies many other determinants such as raw agricultural input supply and quantity as well as quality of food processing and distribution facilities and the scale and quality of the consumer market impede severely agri-food sector's competitiveness. Though Estonia is the most severely hampered by unfavourable natural conditions among the three Baltic countries it has been most successful in providing the necessary institutional framework for a speedy transition of the economy. Above all, since the role of institutional setting has been larger than that of other factors, Estonia's food sector has been more competitive at the end of first decade of transition.

The results we obtained in our study indicate also, the competitiveness of the food sector will depend much on the development of relative prices and of the technological changes as well as of price and technology induced adjustments in production in near future. Finally, we found out in our research the competitiveness of food sector in the Baltic countries depends crucially on the quality of their products and the efficiency of the delivering as well as distribution sectors. Thus, impact of additional production incentives within a framework of European Structural Funds will be reduced severely if the Baltic economies will not be successful in improving the quality of their food products and in reducing inefficiencies in their food industry and the wholesale markets.

An extrapolation of our research results presented here can be, however, done with some caution only, since the restructuring of the agri-food sector in the Baltic economies is still ongoing implying considerable intra- and inter-sectoral adjustments in the allocation of production resources. Also the annual variation in production and trade still exceeds significantly that of the developed economies like the EU constraining in such a way predictability of food sector's competitiveness for the coming years. Recognising these limitations, which

have to be taken into account carefully, the figures presented in our paper provide a first indication with respect to the level of competitiveness of the agri-food sector in the Baltic economies.

References

Amit, R. (1986): Cost leadership strategy and experience curves, *Strategic Management Journal (*7), pp. 281-292.

Bain, J. (1968): Industrial Organization, 2. Ed. New York u. a.

Barkema, A.D., Drabenstott, M., Stanley, J. (1990): Processing food in farm states: An economic development strategy for the 1990s, *Economic Review*, July/August, pp. 5-23.

Barrell, L. (1993): Measuring Competitiveness, *The Business Economist* (25).

Chamberlin, E. H. (1965): The Theory of Monopolistic Competition (1933), 8. Ed., Cambridge, Mass.

Central Statistical Bureau of Latvia (1999), Statistical Yearbook of the Republik of Latvia 1999, Riga.

Cook, M., Bredahl, M.E. (1991): Agri-business Competitiveness in the 1990s: Discussion, *American Journal of Agricultural Economics*, Vol. 73 (December), pp. 1472.

Department of Statistics of Lithuania (1999), Statistical Yearbook of Lithuania 1998, Vilnius.

Duren, E., v., Martin, L., Westgren, R. (1991): Assessing the Competitiveness of Canada's Agrifood Industry, *Canadian Journal of Agricultural Economics (39),* pp. 727-738.

Edwards, S. (1988): Exchange rate misalignment in developing countries, The World Bank, Washington, D.C.

Esser, K. (1996): Systemic Competitiveness: New Governance Patterns for Industrial Development, London, Frank Cass.

EU-Commission (1998): Agenda 2000 (Vol. II). Communication: Reinforcing the Pre-accession Strategy. Brussels.

Gibb, A. (1997): Small firms, training and competitiveness: building upon the small business as a learning organisation, *International Small Business Journal*, Vol. 15 (3), pp. 13-29.

Gorton, M., Buckwell, A., Davidova, S. (1999): Transfers and Distortions Along CEEC Food Supply Chains, Wye College Working Paper 2/9.

Hill, C. W. L. (1988): Differentiation versus low cost or differentiation and low cost: A contingency framework, *Academy of Management Review* (13), pp. 401-412.

Horn, E.-J. (1985): Internationale Wettbewerbsfähigkeit von Ländern, *WiSt, Wirtschaftswissenschaftliche Studien*, No. 7, S. 323-329.

Kennedy, P.L., Harrison, R.W., Kalaitzandonakes, H.C., Peterson, H.C., Rindfuss, R.P. (1997): Perspectives on Evaluating Competitiveness in Agribusiness Industries, *Agribusiness,* Vol. 13, No. 4, pp. 385-392.

Lau, D. (1996): Local concentration and international competitiveness: some empirical evidence for manufacturing in selected European Countries, *Konjunkturpolitik* (42, 2-3), pp. 181-205.

Martin, R. L., Porter, M. E. (2000): Canadian Competitiveness: Nine Years after the Crossroads, Toronto.

Meyers, W. H., Kazlauskiene, N., Giugale, M. M. (eds.) (1999): Lithuania's Accession to the European Union, Successes and Challenges for a Rural Economy in Transition, Iowa State University Press.

Miller, D. (1988): Relating Porter's business strategies to enviroment and structure: analysis and performance implications, *Academy of Management Journal* (31), No. 2, pp. 280-308.

OECD/CCNM (1998): Agricultural Policies in Emerging and Transition Economies, Monitoring and Evaluation, Paris.

OECD (1998): Agricultural Policies in OECD Countries. Measurement of Support and Background Information 1998. Paris.

OECD (1999): Agricultural Policies in OECD Countries, Monitoring and Evaluation, Paris.

OECD (2000): OECD Economic surveys 1999-2000: The Baltic States. A Regional Economic Assessment, Paris.

Poganietz, W.-R. (1998): Wechselkurs und Wettbewerbsfähigkeit des Agrarsektors, in: Heißenhuber, A., Urff, W. v. (eds.): Land und Ernährungswirtschaft in einer erweiterten EU, Schriften der GEWISOLA e.V. (34), Münster-Hiltrup.

Porter, M. (1980): Competitive Strategy, New York, The Free Press.

Porter, M. (1985): Competitive Advantage, New York, The Free Press.

Porter, M. (1990): The Competitive Advantage of Nations, New York, The Free Press.

Robinson, J. (1961): The Economics of Imperfect Competition (1933), Nachdruck, London.

Rogoff, K. (1996): The Purchasing Power Puzzle, *Journal of Economic Literature* (2), pp. 647-668.

Scherer, F. M., Ross, D. (1990): Industrial Market Structure and Economic Performance, Boston.

Statistical Office of Estonia (1999), Statistical Yearbook of Estonia 1998, Tallinn.

Stigler, G. (1968): The Organization of Industry, Homewood.

Suranovic, S. M. (2000): International Finance Theory & Policy Analysis, Washington.

WIIW (1998): Handbook of Statistics: Countries in Transition, 1998, Vienna.

ZMP (1998): Agrarmärkte in Zahlen – Mittel- und Osteuropa '98, Berlin.