

TRADE OF LITHUANIAN DAIRY PRODUCTS AND VERTICAL RELATIONSHIP AT THE STAGE OF DISTRIBUTION

Heinrich Hockmann

Researcher, PhD.
Institut of Agricultural Development
in Central and Eastern Europe
Theodor-Lieser-Str. 2
D06120 Halle
Germany
E-mail: hockmann@iamo.de

Angelė Kėdaitienė

Associate Professor, PhD.
Vilnius University
Department of Marketing
Saulėtekio al. 9 (Building I, Room 506)
LT 2040 Vilnius
Lithuania
E-mail: angelek59@hotmail.com

This paper focuses on the theory of vertical co-ordination and its application to agriculture and the dairy industry. More specially, the paper analyses the distribution of Lithuanian dairy products in both the domestic and international market. The domestic retail system and tendencies in dairy product foreign trade are surveyed in this paper as well.

Keywords: transaction, vertical co-ordination, retail system, foreign trade, dairy products

Introduction

In the milk industry there is considerable interdependence among all the participants (raw milk producers, milk processors, wholesalers, retailers, and consumers). This system is surrounded and influenced by suppliers and by regulatory institutions. Managing such a structure requires coordination. Various coordination mechanisms ranging from spot markets to channels, governed by contracts or ownership, are available. The choice among them is influenced by technology, economies of scale and scope, specific investments made in different stages of the chains and by the institutional environment, i. e. laws provided by the government. Thus, institutional arrangements in the food chains will differ not only according to agricultural goods and consumer preferences, but also from country to country.

A strong tendency towards vertical integration can be observed over the last years in the Lithuanian milk industry. The main reasons for this trend are risk management, quality assurance, raw-product availability and efficient utilization. In particular, contracting has become more important in comparison to other forms of coordination. However, this is nothing exceptional, because such tendencies could be observed in other countries as well.

The objective of this paper is an assessment of recent developments in trade in the Lithuanian milk industry regarding vertical integration at the stage of distribution. The analyses are highly important, because it is directly related to activities accelerating Lithuanian accession to the EU.

The paper starts with the theoretical background of the theory of transactions and vertical

relationship. Part 2 focuses on the peculiarities of transactions and vertical integration in the agriculture and food industry. Part 3 discusses forms of vertical relationships between processors and distributors in the domestic market. Apart from this, an overview of the domestic retail system is presented. In part 4 the organization of dairy product foreign trade and recent development regarding foreign trade of milk products are discussed. These problems are directly connected to horizontal and vertical co-ordination, as foreign trade is an extension of vertical coordination within the distribution chain at the international level. Furthermore, the direction and volume of export reflect the level of competitiveness of the industry.

Various statistical and analytical materials were used in this paper. These were published by the Lithuanian Department of Statistics, by the Lithuanian Ministry of Agriculture, by the Lithuanian Agrarian Economy Institute and by the Lithuanian Milk Producers Association *Pieno centras*. Some data and analytical materials were taken from the domestic media. The authors of the paper are especially thankful to Rūta Vasiliauskaitė from the Lithuanian Agrarian Economy Institute and Irma Pilipienė from *Pieno centras* for helpful consultations while working on the paper.

1. Vertical Integration: Some Basic Principles

The linkage between agricultural producers, processors, distributors and consumers requires co-ordination. The actors in the chain could choose among various co-ordination mechanisms ranging from an open market to vertical integration¹. The choice between these forms is

¹ In our view, vertical integration is when one company takes control of subsequent stages in the vertical channel by applying common ownership principles. Other

influenced by several determinants. These include the exploitation of economies of scale, technological interdependencies and uncertainty, life-cycle considerations and preventing double marginalisation. However, as has been pointed out in recent years, the main reason why vertically integrated structures occur are the possibilities to reduce transaction costs [10]².

The term transaction cost refers to all costs associated with the preparation, implementation, control and enforcement of transactions [8]. These cost occur *ex ante*, such as information or negotiation costs, and *ex post*, such as expenditures on performance of the deal, on monitoring etc. There are two main reasons for these costs: bounded rationality and opportunism. Bounded rationality refers to the limited capabilities of human beings to contemplate and to collect information for every contingency. Thus, exchange takes place under asymmetric information. In addition, given opportunistic behaviour, each partner will try to extract as much benefits from the transaction as possible, even if this includes cheating or breaking agreements.

Because of this, partners look for governance structures that provide as much control as necessary over the transaction in order to hedge their factor input. However, at the same time, complete control is often not optimal because of the monitoring costs. In the literature, three dimensions of transactions are discussed that determine the optimal governance structure: frequency, uncertainty, and asset specificity. A high degree of uncertainty favours transacting in a

authors have a broader view. They subsume all activities to co-ordinate the stages of a chain under the term. We prefer to distinguish between co-ordination and integration, where the latter refers to the broader view of vertical integration.

² Because of technological and economic reasons, optimal co-ordination mechanisms vary, depending on time and country. The choice is strongly related to the level of development and the availability of institutional arrangements that support the different mechanisms.

Table 1. Determinants of the Choice of Governance Structures

		Degree of Asset Specificity		
		Low	Intermediate	High
Frequency	Rare	Spot-markets (standardised commodities)	Contracts (customised equipment)	Vertical integration or contracts (construction of a factory)
	Frequent		Long-term bilateral contracts, strategic alliances (customised inputs)	Full vertical integration (site-specific transfer of intermediate products)

Source: adjusted from [11]

highly integrated environment in which monitoring and control mechanisms could be implemented through contracts or through ownership. The other two dimensions affect governance structures as shown in Table 1.

In general, the higher the degree of asset specificity, the higher is the tendency towards full vertical integration or ownership. However, this tendency is modified by the frequency of the transaction. In principle, the more frequent a transaction is and the higher the number of competitors in the upstream stage are, the less are the possibilities for opportunistic behaviour and the more likely is a settlement of the transaction via markets. However, if the firm is tight with one input supplier, opportunistic behaviour becomes very likely. In such situation, ownership or vertical integration are the governance structures, having the lowest transaction costs [11].

Asset specificity can be measured directly. However, an indicator is the degree to which the asset can be applied in other operations. Thus, the concept is closely related to opportunity costs. Generally, asset specificity refers to the characteristics of human and physical capital. However, as far as agriculture is concerned, there is at least one further dimension of asset specificity, because many agricultural products are perishable. This raises a timing problem, as many products, especially those from animal production, must be sold within a relatively short

time. From this point of view, the producer has an incentive to integrate forward into processing activities. The main reason is that primary processing contributes to relaxing the timing constraints and, thus, reduces the possibilities of opportunistic behaviour for the sellers [1].

However, perishable goods pose not only problems for agriculture, but also for the processors. Generally, food processors have established factories that produce specialised products the quality of which depends on the quality of the raw materials. From this point of view, there is an incentive for processors to integrate into the agricultural production.

Applying the theoretical consideration to milk production and processing gives the following results. Processors have a propensity to integrate into agriculture. Manufacturing of highly specialised dairy products (cheese, yoghurt) requires, first of all, high investments in specific processing facilities, and second, an adequate quality of the raw materials. The spot market is not very well positioned to provide an environment that prevents opportunistic behaviour. Because quality control is pivotal in such production lines, it is of essential interest of the processor to perform this task within the factory. In addition, if the payment scheme depends on the quality of the raw product, there is an incentive for the farmers to act according to the price differentials.

However, integrating further into agriculture, insofar as the specialised processors acquire ownership in agricultural holdings, is, in general, not optimal. First of all, there is a difference in optimal scale of agricultural production and dairy processing. A dairy plant would need to take control over a whole set of farms to process in optimal scale. First of all, this would increase administrative requirements. However, because of seasonality and other temporal influences, agricultural production could not be controlled in the same way as industrial production. Because the possibilities to control agricultural workers would be low, it is very likely that opportunistic behaviour would lead to exploding transaction costs. This suggests that the optimal governance structure in such a situation is long-term contracts between farmers and dairy producers. Furthermore, one can expect that producers use mechanisms, like providing credits, that tighten the links between the dairy plants and the milk producers.

So far, we have discussed the case of backward integration. Especially in western countries, we observe a long history of forward integration. Farmers may organise milk collection so that they are better positioned to negotiate milk prices. However, this is only the first stage of co-operation. Beyond that, farmers may establish processing co-operatives. However, one can expect that the production structure differs considerably from those of the specialised dairy plants. The reason for integration was not to protect the specific investment in the processing facilities, but to protect investment in milk production and quality. Because of this, co-operatives will prefer production facilities, which are more flexible, and which could be easily adapted to different kinds of dairy products³.

³ One justification of this arguments is the observed pattern of production structure in Germany. Co-operatives play an important role in milk processing. In 1990s they collected and processed about 60 % of the raw milk. They concentrate on the production of standardised dairy products, which have a high share of raw materials. Typical examples are pasteurised milk or butter.

A majority of the companies, acting in today's market have implemented marketing strategies to foster sales volumes and profits. The choice of marketing strategy, whether it is undifferentiated, concentrated or differentiated marketing, depends on the level of production specification. So the theory of transaction costs has a tight connection with the marketing strategy choice. In general, dairy companies apply mostly differentiated strategies of market entry and maintenance. This means, they are not producing uniform, standardised products for the whole market (undifferentiated strategy case), but products, having some degree of intermediate specification. Usually, companies have one or more major brand of milk products, aimed at a wide range of consumers and secondary brands, geared toward specific segments, for example, dairy products for children or especially healthy products with special biological additives. A company, applying such strategy, will try to connect upstream and downstream partners using contractual agreements. Companies, specialising in dairy production having high degree of specification, for example, ecological products etc., will use a concentrated marketing strategy. This means that all their market efforts will be addressed to one segment, for example, to well-educated consumers of different sex and age, respecting their health and having average and above-average income. As was already discussed, such firms will seek vertical integration by common ownership, like co-operatives, or by well fixed contracts.

Moreover, it can be expected that these enterprises prefer to negotiate directly with retailers in order to appropriate the returns of the marketing investment. However, in order to save negotiation costs, this strategy can only be applied when the retail system is not too fragmented or the processors are able to negotiate with large retail systems. In other case omitting the wholesale stage will not be rational for the processors.

In the following section we will analyse whether these principles for managing exchange can be found in the Lithuanian dairy chain.

2. Vertical Relationships at the stage “Processor-Distributor” in the Domestic Market

Different forms of vertical co-ordination can be found in this stage. At least two dimension have to be distinguished. These are the international and the domestic market. Each shows special characteristics regarding vertical co-ordination. Vertical relationship regarding international dimension will be discussed in part 4.

The distribution of processed dairy products in the domestic market is mainly managed by contracts. Basically, since a large part of milk products are perishable without a long shelf life, their distribution is organised on the basis of long-term contracts between milk processors and retail chain stores. Usually, the processing companies are responsible for transportation. However, most of them possess already modern means of transportation and can deliver the products safely and quickly over of radius of 200–300 km. Lithuania holds three major food-retailing systems:

- integrated retail chain stores operating as joint stock companies;
- independent private groceries run by individual private capital;
- small size stores operating as consumer co-operatives.

Integrated chain stores are already well-developed and spread over the entire country. However, they are located mainly in big cities and regional centres. According to a census survey on retailing enterprises, performed by *JSC Profindex* in 1998–1999, in major cities the integrated chain stores accounted for up to 50 % of all food retailing stores, in Vilnius – even

60 %⁴. They have their own distribution centres, well-equipped department and retail stores. They have electronic and laser equipment for codes scanning, for data transmission to retail monitoring companies etc. Generally speaking, the technological standards in these chains are almost the same as in Western countries. Only a few international retail chain stores have already entered the domestic market. At the moment, just two international retail chain groups operate in the domestic market under their own management: *IKI* (Belgium–French) and *SPAR* (German). At the beginning of 2002 *IKI* retail chain group managed 82 stores in the country. Domestic retail chain designers were successful as well, even more successful than international. At the moment, two large domestic retail chain groups operate in the market – *Ekovalda* and *Vilniaus prekyba*, having not a single concept retail chain stores. *Ekovalda* and *Vilniaus prekyba* are owned by domestic capital and by foreign investors. *Ekovalda* manages retail chain stores, such as *RIMI* and others belonging to one of the top-retailers in North Europe *JCA-Ahold*. Today, *Ekovalda* manages around 40 retail stores. The *Vilniaus prekyba* retail chain group, which comprises a few smaller retail chain systems, such as *VP Market* and others, expanded to Latvia and Estonia. At the beginning 2002, *VP Market* managed 155 retail stores, including 17 in Latvia and 1 in Estonia. There are no exact data on the turnover of the retail chain groups, only that of the *VP Market* is known. It was equal to 2.264 bln Lt in 2001, and 1.685 bln Lt in 2000 [9].

Contrary to the urban areas, small private groceries owned by domestic capital and stores run as co-operatives prevail in the countryside. Around 55 % of all food retail stores in smaller

⁴ It can be expected that the shares have changed significantly. This is simply a consequence of the rapid changes occurring in retailing.

cities and in rural areas belong to private capital, and 20 % to consumer co-operatives. Because the purchasing power in the countryside is low, and consumption of industrially processed milk products is limited by home consumption, special marketing activities in this market segment are almost not observable. A sign of poor consideration by the milk processors is small assortment (only the most important dairy products are available) and rare product deliveries.

Thus, the major allocation mechanism that governs exchange in the Lithuanian food products distribution system is contracts and not vertical integration in its very narrow interpretation. Furthermore, there are direct contact between processors and retailers. Wholesale is only important for transactions with independent private groceries.

In recent years, horizontal integration took place in food retailing. However, detailed data on the level of concentration are not available. One year ago, the Lithuanian Board of Competition conducted a special study on the level of concentration in domestic food retailing. The results show that the turnover of the three largest retail chains was equal to about 40–50 % of total returns⁵. About 50 % of the annual turnover in domestic food retailing belonged to the private stores.

3. Foreign trade of Lithuanian milk products

3.1. Co-ordination of Foreign Trade in Dairy Products

Basically, milk processing companies have to do the marketing of their products and the co-ordination for exporting to the foreign markets

on their own. Altogether, about 50 % of manufactured milk products are exported⁶. Since export of milk products is promoted by the state, processors receive some governmental assistance for these transactions. The International Agriculture Trade Agency was established in 1996. Its function was to support domestic food exporters. The Agency was reorganised in 2001. Today it runs under the responsibility of the Lithuanian Agricultural and Food Market Regulation Agency (LAFMRA). In autumn 2001, LAFMRA completed a new program of agricultural and food products export promotion which is under discussion in the Parliament (Seimas) of the Republic of Lithuania. The program holds the following major statements regarding agricultural and food products export, the first four have already been implemented to some extent:

1. Creation of a market information system.

From 1998 LAFMRA collects information about prices and trends in the domestic and foreign market of agricultural products and foodstuffs, and reports to the Lithuanian institutions and other entities. In 2000 the Agency started creating the Lithuanian agricultural products and foodstuff Market Information System (MIS). MIS would make it possible to up-date information on the situation in the domestic and foreign markets of agricultural products and foodstuff (prices, quantities etc.), using the Internet or special publications. All dairy product exporters-importers have access to MIS databases.

2. Organisation of participation in trade fairs. The principal task of the LAFMRA Export Development Department is to organise participation of the Lithuanian food processors in international exhibitions, trade fairs and trade missions, in order to present Lithuania's food-

⁵ The *Vilniaus prekyba* group covers around 20 % of the domestic food retail market; *Iki* and *Ekovald* each 10 %.

⁶ The average dairy product export ratio for EU countries is 10 % of total production.

processing industry and agriculture. Such events offer companies excellent opportunities to get exposure in export markets and to provide foreign partners with information about food products manufactured in Lithuania.

Participation in the international trade fairs is one of main ways in which the Lithuanian food processing companies can boost their foreign sales. In a bid to boost the country's export, the department exhibits Lithuanian stands at international agri-food fairs. It also publishes marketing material, highlighting Lithuanian companies and the LAFMRA'S activities for distribution during trade fairs.

In addition to monitoring forthcoming international agri-food events, LAFMRA keeps a database of inquires and interested potential partners. Seminars are organised on a regular basis for Lithuanian company specialists in order to advise them on various aspects of preparation for and participation in international trade fairs. In preparing for each international exhibition, the LAFMRA analyses foreign markets and conditions, and seeks to identify new sales opportunities.

In 2001, the LAFMRA Export Development Department helped local food companies attend international trade fairs "POLAGDA FOOD" 2001, in Poland, and "WORLD FOOD MOSCOW" 2001, in Russia. These are the key international agri-food events, during which the Lithuanian food displays attracted a large number of potential foreign partners. Since Russia and Poland are among Lithuania's largest foreign markets for foodstuffs, the Lithuanian Business Development Council (Ministry of Economics) sponsored the participation of the country's food producers in these events.

3. Introduction and promotion of the national quality mark LITFOOD. Measures, aimed at building a positive image of the Lithuanian

products are an integral part of the country's export promotion campaigns. The introduction of the LITFOOD quality mark was a landmark step in shaping the positive image of Lithuanian food products on both the domestic and foreign markets. Similar labelling systems are used by many Western European countries, as well, as by Estonia and Latvia. The LITFOOD quality mark is used to emphasise Lithuanian origin of products and their excellent quality. The label has produced a three-fold effect, boosting sales, providing support to small and medium business and increasing consumer culture and confidence.

The labelled products will not only have to be of excellent quality, but also of Lithuanian origin. Unprocessed products will have to be 100 % Lithuanian, whereas processed products will be required to be made of Lithuanian-grown main raw materials. The main criteria for obtaining the quality mark will be voluntary participation, quality consistency and limited product usage periods. This trademark will be promoted through Lithuanian embassies, trade agencies, fairs, press, radio, television, and product presentations. In addition, the trademark will be used in all advertising campaigns.

The owner of the trademark will have an opportunity to check the products' quality based on the basis of established selection criteria. No one will have the right to use the same label or similar to the registered trademark LITFOOD without the consent and authorization of LAFMRA.

A certificate, issued on May 7th, 2001 by the State Patent Office establishes the exclusive rights of the LAFRIMA to LITFOOD trademark. The trademark is registered according to the general Regulations of the Madrid Agreement and Protocol.

4. Creation of a virtual fair of Lithuanian food products. This was created and developed by

the financial means of PHARE and the Ministry of Agriculture of the Republic of Lithuania. It already operates successfully for more than a year (www.food-fair.com). The virtual fair is based on the most up-to-date Internet technologies following the "Business to Business" (B2B) concept, in order to facilitate the search of business contacts and help find international business partners both in Lithuania and world wide. At the moment, the internet catalogue "Virtual Fair" lists more than 130 enterprises, however, the number of companies participating in the project is equal to about 500, among those all dairy companies-exporters.

The virtual fair offers participating enterprises a number of useful services. In the Food-Fair.com catalogue, Lithuanian, as well as international companies can create a Web-page of their own, put pictures of their products, include product specifications, and can even upload short movies representing their companies. Each registered member will receive a member name and password enabling any registered user to modify outdated parts. The registered users will receive free email boxes so that they can easily exchange information with other companies.

The "Trade Leads" system will be of particular value. This system enables companies to exchange import and export inquiries. The system places the inquiries on a separate page and automatically sends new inquiries to all interested companies. For example, if you announce that you want to buy powder milk, this inquiry will be received by all the registered companies dealing with this type of product. The "Trade Leads" system ensures a perfect transfer of business information to related users in certain types of products.

5. Support of logistics in the major export markets such as the establishment of a system of consigned storehouses etc.

6. Partial payment of export insurance for the food products by the government.
7. Partial payment of market entry costs and market development by the government.

Thus, existing and potential support for domestic food exporters appears promising. However, the major part of export success depends on the efforts of the dairy companies.

Companies used to find the export partners and to organise the exchange in different ways: (1) by participating in various trade fairs and exhibitions, as was already discussed; (2) by participating in the project "Virtual Fair", (3) by contacting foreign markets directly through agents or various middlemen such as the Lithuanian embassies, personal foreign business relationships, (4) by getting a license from the Ministry of Agriculture for dairy product export to the EU on a competitive basis etc.⁷

The modes of exchange depend on the legal framework in the foreign country and reflect the institutional and organisational differences in the international environment. Obviously, these relationships are not based on common ownership, but on contracting. Often governmental organisations act as partners of contracting by providing loans and other forms of support.

3.2. Export and Import of Dairy Products

A country's volume and direction of international trade have a positive and high correlation with its

⁷ Dairy product export amounts to the USA, to CEFTA, Baltic and CIS countries as well as other countries (Latin America, Asia, Japan, Australia etc.) are unlimited. Export volume to EU countries is limited by export quotas. From July 1, 2001 to June 30, 2002, export to EU countries quotas were: 5500 t of milk powder, 300t of condensed milk, 1925 t of butter, and 6000t of cheese. Quotas are set by the European Commission for each EU economic year. They are negotiated by the Lithuanian Ministry of Agriculture. The ministry is also responsible for their administration.

competitiveness on world markets. The relative trade advantage (RTA)⁸ of the Lithuanian dairy sector in 1999 was 7.94 [6]. It was the highest among the CEC countries. The second highest RTA index belonged to Latvia and was equal to just 2.77. The reasons for this high level of competitiveness are a well-developed national dairy industry, able to produce good quality products in amounts that satisfy domestic and export market requirements, both in the West and in the East. More detailed information can be obtained by looking at the changes of export and import structures.

The Lithuanian national milk sector is traditionally export-orientated. In 1989–1991, Lithuania exported over 1 mln tons of dairy products (in terms of milk equivalent) to other parts of the Soviet Union mainly. However, the transition process caused changes in trade volume and direction. Due to limited data, reliable information on international trade in dairy products is only available since 1995⁹.

Export of dairy products reached its maximum in 1997–1998, with 110–120 thousand tons, when amounts were about 1.5 times higher than in 1995 and 2000 (Table 2). The main products are skimmed milk powder and cheese. Together, these accounted for more than 50 % of exports. The increase in export until 1997–1998 was mainly stimulated by the recovery of the export of skimmed milk powder to the CIS, especially Russia, where about 50 % of exports were sold. Furthermore, the government supported this trend by export subsidies. After the Russian crisis in August 1998, and the devaluation of the Rouble this market broke down. Only 20 % of exports were directed towards CIS in 2000.

⁸ The RTA is an index that is constructed from relative trade flows and allows statements about the competitive position of a country for a product or group of products. For construction and interpretation of the index see [5].

⁹ All data for the analysis of dairy foreign trade were taken from the Lithuanian Department of Statistics Foreign Trade unit database.

Until today, there was only little success in compensation of lost markets in Eastern Europe with a stronger presence in Western countries. Some of the main reasons are quality requirements, entry methods etc., which are different from Eastern markets. First of all, only companies having EU production quality certificates could export the products to the EU market. CEFTA and Baltic countries also have different requirements regarding quality even if they as candidates apply most of the EU standards. The USA has also its own high quality requirements.

In 2000, the USA overtook the CIS group and became the major export market of the Lithuanian dairy products. Together, the EU and other countries attracted almost the same amount of exports as the USA and CIS. The last two export country groups, CEFTA and the Baltics, are less important. The major export market in CEFTA countries is Poland. For Lithuania, the neighbouring Baltic countries are very important, because of the historical links, similarities in national traditions and ethnicity, as well as similar problems and achievements in joining the EU. Export of dairy products to the Baltic States is successful and increasing from year to year. Especially successful is trade with Latvia.

It is interesting to observe that despite the crisis, the CIS countries still attract more dairy exports than the EU. A good image of Lithuanian products in Eastern markets, old and tight business contacts, some similarities in mentality because of the 50-year common history, lower product quality requirements are Lithuania's main advantages in this market segment. Whether the Eastern markets will be similarly important in the future depends on the economic recovery in these countries. Today, we observe increasing exports to the EU. If the trends continue, the EU could overtake the CIS already in 2002 or 2003.

In 1995, skimmed milk powder was the main export product. In 2000, the situation was different, since exports consisted mainly of cheese and

Table 2. Export of Dairy Products, 1995–2000, in Tons and Milk Equivalents

	1995	1996	1997	1998	1999	2000
	by kind					
Milk	3339	5922	10 876	13 313	1119	8267
Condensed milk	9884	7918	15 724	6437	9702	1892
Skimmed milk powder	24 499	34 605	46 911	29 318	22 752	9801
Yoghurt and sour milk products	1259	2991	5522	6228	453	380
Whey	53	783	1532	2643	2931	6887
Butter	15 199	27 494	23 041	29 196	15 017	11 061
Cheese	11 355	14 101	19 595	29 923	22 846	32 350
	by country					
EU	21 414	23 115	36 999	25 413	15 129	13 633
CIS	30 749	48 929	58 465	59 237	24 680	16 200
CEFTA	6276	1352	1505	2274	2321	5050
Baltic countries	5441	9522	10 884	10 646	3804	7643
USA	1268	1368	1535	8999	19 837	16 808
Other countries	440	9493	14 013	10 470	9046	11 303

Sources: DepStat (various issues).

butter. The structure of exports changed in accordance with the different importance of export countries. In eastern markets mainly skimmed milk powder was sold, while exports orientated to the west consisted mainly of butter and other highly processed products. Lithuania progressed very well in fat cheese export. Over the last 6 years it increased by three times. Half of the cheese export in 2000 was directed to the USA market. In 1995 this figure was just 11 %. Lithuania entered the USA in 1999, by the individual efforts of the major fat cheese exporter *Rokiškio sūris*.

Import of dairy products to Lithuania is administered by the Ministry of Agriculture and is based on the system of licences. The import quotas limit the amount of dairy product import from EU countries, they are applied to import of milk powder, condensed milk, sour milk products and cheese. Import licenses to importers are spread on the competition basis. Dairy product imports

from non-EU-countries are monitored on the basis of automatic licensing. These are provided without further control when the goods fulfil the domestic quality requirements. In the recent years, the main imported dairy product was yoghurt. This products accounted for more than 50 % of the volume of dairy import. The import of skimmed milk powder also increased (Table 3). Almost all of these imports came from Estonia and Latvia. Lithuania imports some cheese mainly from Latvia, Poland, Germany and France. Regarding the import structure by country groups, 2 major leaders could be identified, the EU and the Baltic countries. Yoghurt is exclusively imported from the EU (Germany).

The Lithuanian milk products balance is strongly positive (Table 4): export of milk exceeded imports by 19 times; the figures were 48 for skimmed milk powder, 140 for whey, 115 for butter and 95 for cheese. Yogurt was the only

Table 3. Import of Milk Products, 1995–2000, in Tons and Milk Equivalents

	1995	1996	1997	1998	1999	2000
	by kind					
Milk	8	128	223	133	129	418
Condensed milk	88	143	500	518	656	1246
Skimmed milk powder	516	7377	14 165	624	727	207
Yoghurt and sour milk products	759	1408	3698	4358	2886	3238
Whey	20	55	569	361	99	48
Butter	66	24	509	178	68	94
Cheese	148	146	253	437	492	341
	by country					
EU	958	2275	8941	4200	3184	3012
CIS	568	6622	959	11	22	140
CEFTA	22	45	150	374	241	405
Baltic countries	2	126	787	1260	1537	2022
USA	53	75	0	0	0	0
Other countries	3	43	443	661	74	0.3

Sources: DepStat (various issues).

product for which import exceeded export. Imports were 8.5 times higher than imports.

Export balance for dairy products shows that this figure has also been positive since 1995 for the trade with almost all countries. The most positive balance in 2000 was with the USA (16 807 t exported and no imports) and with the CIS (16 119 t exported and 140 t imported). Trade with the Baltic countries was the only one closing an export-import gap (7643 t exported and 2021 t imported).

3.3. Foreign Trade Policy and Dairy Export: Some Remarks Regarding Accession to WTO

As Lithuania exports considerable amount of food and agricultural products, an appropriate trade policy is important. Such a policy comprises foreign exchange regulation, import limitations as well as promotion of exports. How-

ever, since Lithuanians' WTO membership there are close bounds for these policies.

In the period from 1995 to 1999, a system of export subsidies was set up in Lithuania. Subsidies were paid to the companies, exporting milk and other food products, if an unfavourable situation in world export markets appeared. Availability of such subsidies stimulated export and served as a state guarantee for exporters. While negotiating WTO accession, a removal of export subsidies on food products was demanded, and Lithuania has accepted and enforced this requirement. The result was a reduction of exports in 1999, however in 2000 exports started to increase again. To compensate for removed export subsidies, the Lithuanian Government found other means such as elaboration of special export promotion programs, as was discussed in the section 3.1.

In order to protect local markets and producers, an import tariffs system was established. At

Table 4. Net Export of Dairy Products in 2000, in Tons

	Export	Import	Net export
Skimmed milk powder	9801	203	9598
Milk and milk cream	8266	417	7849
Yogurt and sour milk products	379	3238	-2859
Cheese	32 349	340	32 009
Whey	6887	48	6839
Butter	11 061	94	10 967

Sources: DepStat (2001).

Table 5. Import Tariffs for Dairy Products

Commodity or commodity group	Existing normal import tariff, %	Accepted Rates in WTO negotiations	Tariff and quotas on imports from the EU
Milk and milk cream	30	30 %, reduction to 25 in 2004	20 %
Milk powder	30	30 %	26 % for in-quota imports (600 t), else 30 %
Yogurt, sour milk products	30	30 %	10 % for in-quota imports (300 t), else 12–20 % dependent on kind
Butter	60	60 %, reduction to 45 % in 2005 and 40 % till 2007	50 %
Cheese	40–45, depending on kind	40–45 %, reduction to 33–36 % in 2004 dependent on kind	no-tariff for in-quota imports (6000 t), else 30 %

Sources: Lithuanian Ministry of Agriculture (2001).

the moment, the milk products import tariffs range between 30–60 % (see Table 5). The negotiations for WTO accession concerned only conventional trade tariffs. Lithuania took the responsibility to stick to the current tariffs and not to raise them in future. Depending on the product, some conventional tariffs have to be lowered in the next 4–7 years. However, only a small part of Lithuania trade, mainly this with Russia, is based on these tariffs. About 70 % of Lithuanian foreign trade is organised on the basis of free trade agreements with countries or country groups. In these cases preferential import tariffs are applied. These are not subject to WTO regulations. In April 2000, Lithuania, as required by WTO, re-

moved the minimum prices for import products. These were considered an obstacle for imports by some members of the WTO.

As a result of the WTO accession negotiations, Lithuania has to decrease its internal support by 20 % by 2005. This agreement was based on Aggregate Measure of Support (AMS)¹⁰ cal-

¹⁰ The AMS is an indicator of income support provided by so called amber box measures. These include mainly policy instruments that protect domestic agriculture by price regulations. In the very easiest case it is calculated by the difference between the prices of world and the domestic market times the production in a reference period.

cultation for average production in 1995–1997. However, exceptions exist: if internal support of a product is less than 5 % of its production in a current year, the support values for such products have to be deducted from the total support sum.

Most likely, a WTO accession will result in more liberalisation of the domestic milk sector. When the level of support is lowered, there is no other way to survive in competition than by increasing the effectiveness of production. This includes cost reduction, adequate quality management, using transaction cost minimising governance structures and applying consistent and coherent marketing strategies. However, the analysis of vertical and horizontal integration in the value chain provides some evidence that the Lithuanian milk chain is tackling these issues.

Conclusions

The milk processing industry is the most developed segment of the Lithuanian dairy chain. It is a modern industry, having the newest technologies and able to produce good quality dairy products. The linkage between agricultural producers, processors, distributors and consumers requires the co-ordination. The actors in the chain could choose among various co-ordination mechanisms ranging from an open market to vertical integration. The choice between these forms is influenced by several determinants. These include the exploitation of economies of scale, technological interdependencies and uncertainty, life-cycle considerations and preventing double marginalisation. The more specialised production is and the more frequent transactions are, the need for a well-fixed vertical relationship increases. In such situations, the transactions should not be conducted on the spot market but should be governed by more integrated modes of exchange like contracts or ownership.

Vertical co-ordination at the “processor-distributor stage” shows large differences which reflect the various requirements of the markets to which the products are directed. This holds for the domestic as well as for the international market. On the latter, the companies are responsible for finding partners and conducting the transaction. The Lithuanian government is supporting the producers through LAFMRA, which is run under the responsibility of the Ministry of Agriculture. Contracts are the prevailing mode of governance in this type of exchange. Vertical relationships between processors and distributors in the domestic market are mainly governed by contracts as well. Many processors, especially those who have developed specialised products, omit wholesalers by directly negotiating with retailers. One reason is the short time of validity. Another is that only by this procedure the processors can appropriate the returns of their investment in product development as well as the appearance quality of the products. Only the smaller processors that provide standardised products use wholesalers to distribute their products. Lithuania holds three major food-retailing systems: integrated chain stores, independent private groceries, and small size stores, which are run as consumer co-operatives. The major part of milk products is distributed through integrated retail chain stores in the large cities.

Regarding Lithuanian foreign trade of milk and milk products, the following conclusions could be drawn. The domestic dairy industry is export-orientated, up to 50 % of the dairy products are exported. The export balance is positive regarding both products and countries. RTA was equal to 7.94 in 1999, and was the highest among CEC countries. The Lithuanian milk producers export successfully both to eastern and to western markets. In 2000, four almost equally powerful country groups appeared regarding export volumes: EU, CIS, USA and other countries

(Japan, South East Asia). The majority of imports comes from the EU, the major imported product is yoghurt from Germany.

Lithuanian foreign trade of milk products would be affected when Lithuania became a member of WTO. First of all, as it was required by WTO, that export subsidies had to be removed after 1999. Consequently, export fell in

2000. Secondly, internal support measured by the AMS should be lowered by 20 % in 2005. This will affect all stages in the dairy chain. The only way for farms and processors to survive the more intense competition from abroad is to increase the effectiveness of production, to improve product quality and to apply more aggressive promotion and marketing strategies.

REFERENCES

Abbreviations

DepStat Department of Statistics under the Government of the Republic of Lithuania

1. Allen, D. W., Lueck, D. The Nature of the Farm // *Journal of Law and Economics* 43, 1998, p. 343–386.

2. DepStat, Lithuanian Foreign trade 1996. Vilnius, 1997.

3. DepStat, Lithuanian Foreign trade 1998. Vilnius, 1999.

4. DepStat, Lithuanian Foreign trade 2000. Vilnius, 2001.

5. Eiteljörge, U., Hartmann, M. Central-Eastern-European Food Chains Competitiveness. In: ISMEA (Hrsg.), *The European Agro-Food System and the Challenge of Global Competition*. Rom, 1999. P. 187–224.

6. Hartmann, M. The dairy sector in the Central European Candidate Countries (CEC) – The status of restructuring and future challenges. *Agrarwirtschaft* 50, 2001.

7. Lithuanian Ministry of Agriculture (2001), Homepage announcement, <http://www.zum.lt>.

8. Richter, R., Furubotn E. *Neue Institutionenökonomik: Eine Einführung und kritische Würdigung* 2, durchges. u. erg. Aufl., Tübingen, 1999.

9. Slušytė, R. To the top of the retail market – in different ways // Daily newspaper „Lietuvos rytas“, supplement „Vartai“, 2001 11 12, Nr. 44 (560).

10. Tirole, J. *Industrial Organization*. Cambridge and London, 1988.

11. Williamson, O. E. *The Economic Institutions of Capitalism: Firms, Marktes, Relational Contracting*. New York and London, 1985.

LIETUVOS PIENO PREKĖS IR VERTIKALŪS SANTYKIAI PASKIRSTYMO STADIJOJE

Heinrich Hockmann, Angelė Kėdaitienė

Santrauka

Straipsnyje nagrinėjama vertikalios integracijos ir koordinavimo teorija, taikant ją žemės ūkiui ir pieno perdirbimo pramonei. Siekiant tyrimo glaustumo, vertikali pieno sistema nenagrinėjama, išsamiausiai aptariama galutinė jos grandis „pieno perdirbimo įmonė–paskirstymo tinklas /

mažmeninė prekyba“ ir „pieno perdirbimo įmonė–paskirstymo tinklas / užsienio prekyba“. Be vertikalios integracijos temos, nagrinėjamos Lietuvos užsienio prekybos pieno produktais tendencijos ir šalies mažmeninės prekybos tinklo būklė.