



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

DISCUSSION PAPER

Institute of Agricultural Development in Central and Eastern Europe

RESTRUCTURING THE LATVIAN FOOD INDUSTRY: PROBLEMS AND PERSPECTIVES

DANUTE JASJKO, MONIKA HARTMANN, MICHAEL KOPSIDIS,
ANDRIS MIGLAVS AND JÜRGEN WANDEL¹

DISCUSSION PAPER NO. 10
1998



Magdeburger Straße 1, D-06112 Halle (Saale), Germany
Phone: +49-345-500 81 11
Fax: +49-345-512 65 99
E-mail: iamo@iamo.uni-halle.de
Internet: <http://www.landw.uni-halle.de/iamo/iamo.htm>

¹ The main responsibilities of Hartmann, Kopsidis, Wandel (IAMO) were editorial work and coordination.

Danuta Jasjko is researcher at the Latvian State Institute of Agrarian Economics.

Prof. Dr. Monika Hartmann is Head of the Department of Agricultural Markets, Marketing and World Agricultural Trade at IAMO.

Dr. Michael Kopsidis is research fellow in the Department of Agricultural Markets, Marketing and World Agricultural Trade at IAMO. His research focuses on market integration in the Baltic States and Russia.

Dr. Andris Miglavs is Director of the Latvian State Institute of Agrarian Economics.

Jürgen Wandel is research fellow in the Department of Agricultural Markets, Marketing and World Agricultural Trade at IAMO. His main fields of work are transition processes in the food industry in Central and Eastern Europe, especially Russia.

Mailing address: Latvian State Institute of Agrarian Economics
Struktoru 14
Riga LV 1039
Latvia
Phone: +371 2 55 13 37
Fax: +371 7 82 81 27
E-mail: danuta@lvaei.org.lv

Mailing address: Institute of Agricultural Development in Central and Eastern Europe (IAMO)
Magdeburger Straße 1
D-06112 Halle/Saale
Germany
Phone: +49-345-500 81 20
Fax: +49-345-500 81 77
E-mail: hartmann@iamo.uni-halle.de
Internet: <http://www.landw.uni-halle.de/iamo/iamo.htm>

We gratefully acknowledge financial support from the ACE-1996 Programme of the EU Commission (contract number P96-6055-R). All views expressed and any remaining errors are our responsibility.

Discussion Papers are interim reports on work of the Institute of Agricultural Development in Central and Eastern Europe (IAMO) and have received only limited reviews. Views or opinions expressed in them do not necessarily represent those of IAMO. Comments are welcome and should be addressed directly to the author(s).

The series *Discussion Papers* is edited by:
Prof. Dr. Klaus Frohberg (IAMO)
Prof. Dr. Monika Hartmann (IAMO)
Prof. Dr. Dr. h.c. Peter Tillack (IAMO)

ABSTRACT

The food industry is one of the most important sectors in the Latvian economy. However, due to its close links to agriculture, the structural crisis in the processing sector is the main obstacle to increasing output, productivity and profitability in the entire agricultural sector. Based on the structure-conduct-performance framework developed by the economic theory of industrial organisation, the objective of the present discussion paper is to identify those economic conditions that are giving rise to the low degree of competitiveness in Latvia's food industry. For this purpose, the paper analyses the impact of the macroeconomic environment, the change in demand and input supply conditions, and the privatisation process on the development of the food industry. The analysis shows that, although major progress has been made in macroeconomic stabilisation, privatisation and institution building, the efficiency and performance of this important part of the Latvian agro-food chain are far from perfect. Current problems of the Latvian food industry that result in low profitability are increasing input costs, low labour productivity, low domestic and foreign investment activities and excess capacities. The main causes for these are unfavourable interest rates on bank loans, ineffective corporate governance in privatised firms, and deficiencies in the building and implementation of institutions.

ZUSAMMENFASSUNG

Die Ernährungsindustrie gehört zu den wichtigsten Sektoren der lettischen Volkswirtschaft. Gegenwärtig befindet sie sich in einer schwierigen Anpassungskrise im Übergang von der Plan- zur Marktwirtschaft. Dies hat aufgrund der engen Verbindung zum landwirtschaftlichen Produktionsbereich negative Auswirkungen auf Produktion, Produktivität und Rentabilität des gesamten Agrar- und Ernährungssektors. Das Ziel dieses Diskussionsbeitrages ist es, basierend auf dem Structure-Conduct-Performance-Ansatz der Industrieökonomik diejenigen Faktoren zu identifizieren, die zu der geringen Wettbewerbsfähigkeit der lettischen Ernährungsindustrie beitragen. Dazu wird der Einfluß des makroökonomischen Umfelds, der veränderten Nachfrage- und Angebotsbedingungen und des Privatisierungsprozesses auf die Entwicklung der Ernährungsindustrie analysiert. Die Untersuchung zeigt, daß trotz beträchtlicher Fortschritte auf dem Gebiet der makroökonomischen Stabilisierung, der Privatisierung und dem Aufbau von Institutionen noch keine tiefgreifenden Verbesserungen der Effizienz und Leistungsfähigkeit der Ernährungsindustrie eingetreten ist. Die gegenwärtigen Probleme der lettischen Ernährungsindustrie sind steigende Inputkosten, eine niedrige Arbeitsproduktivität, eine geringe in- und ausländische Investitionstätigkeit und Überkapazitäten. Die Gründe dafür liegen in zu hohen Realzinsen für Bankkredite, in einer ineffizienten Eigentümerstruktur in den privatisierten Unternehmen und vor allem in Mängeln beim Aufbau marktwirtschaftlicher Institutionen.

CONTENTS

Abstract.....	3
Zusammenfassung.....	3
Contents.....	4
List of Tables.....	5
List of Abbreviations.....	6
1 Introduction.....	7
2 General importance of the food industry.....	7
3 Government policies.....	8
3.1 Macroeconomic policies.....	8
3.1.1 GDP growth and investment.....	9
3.1.2 Capital market.....	9
3.1.3 Inflation rate and foreign exchange policy.....	10
3.1.4 Employment.....	10
3.2 Privatisation in the food processing industry.....	11
3.2.1 General privatisation scheme.....	11
3.2.2 Special legislation.....	12
3.2.3 Results of the privatisation.....	13
3.3 Institutional framework.....	13
3.3.1 Bankruptcy legislation.....	13
3.3.2 Anti-trust regulation.....	14
3.3.3 Quality standards.....	14
4 Basic conditions.....	15
4.1 Demand.....	15
4.2 Input supply.....	17
4.3 Developments in the food industry.....	20
5 Structure of the food industry.....	22
5.1 Ownership structure.....	22
5.2 Market power.....	23
5.3 Vertical integration.....	25
5.4 Marketing channels.....	25
6 Conduct of the food industry.....	26
6.1 Price behaviour.....	26
6.2 Foreign Direct Investment.....	27
7 Conclusion.....	28
References.....	30
Annex.....	31

LIST OF TABLES

Table 2.1:	Structure of sectors in food industry in 1996	7
Table 3.1:	Consumer price indices, % of previous year	10
Table 4.1:	Development of the CPI, income and purchasing power in Latvia, 1990 to 1996 (1990=100).....	15
Table 4.2:	Consumer expenditure shares for food and beverages.....	15
Table 4.3:	The level of total expenditures and the share of food expenditure in total expenditure in different income groups of the population in 1996.....	16
Table 4.4:	Sown area and animal numbers by type of farm	18
Table 4.5:	Productivity of livestock and yield of agricultural crops and in Latvia	19
Table 4.6:	Procurement share in total production of livestock products, %	20
Table 4.7:	Manufacture of food products, beverages and tobacco in 000 t unless otherwise stated	21
Table 5.1:	Basic ownership structures.....	22
Table 5.2:	Market shares in % in the dairy processing sector in Latvia measured by the Concentration Ratio, 1994 to 1996.....	24
Table 5.3:	Market shares in % in the milling processing sector in Latvia measured by the Concentration Ratio, 1994 to 1996.....	25
Table 5.4:	Distribution of market shares between the largest retailing enterprises in Latvia	26
Table 6.1:	Foreign investments by kind of activity (in % unless otherwise stated).....	27
Table 6.2:	Structure of foreign direct investments in the food industry by country (%).....	27

LIST OF FIGURES

Figure 2.1:	Share of agricultural and food products in the value of total imports and exports.....	8
Figure 3.1:	Development of macroeconomic indicators, 1993 = 100.....	9
Figure 3.2:	Real interest rates for domestic companies and private individuals.....	10
Figure 4.1:	Changes in the per capita consumption of food products in Latvia, kg per capita (1990 = 1).....	16
Figure 4.2:	Structure of per capita expenditures for food products	17
Figure 4.3:	Development of agricultural production (1990 = 1).....	19
Figure 4.4:	Development of production in the Latvian food industry (1000 Ls)	20
Figure 6.1:	Development of monthly prices for milk	26

LIST OF ABBREVIATIONS

CR	Concentration Ratio
CPI	Consumer Price Index
FDI	Foreign Direct Investment
FSU	Former Soviet Union
GDP	Gross Domestic Product
HACCP	Hazard Analysis Critical Control Point
LVAEI	Latvijas Valsts Agrārās Ekonomikas Institūts
LVL	Latvian Lats
Ls	Lats
PHARE	Poland and Hungary Action for Restructuring of the Economy
SDR	Special Drawing Rights

1 INTRODUCTION

With the break-up of the Soviet Union and the regain of independence, tremendous changes have taken place in Latvia's economic and political systems, inducing adjustment pressures on the Latvian industry including the food processing industry. The introduction of a market price system, accompanied by the extensive price liberalisation for food products in December 1991, was one of the cornerstones on the way to a market economy. The availability of raw materials for processing decreased as a result of contracting in the primary agricultural sector and losing access to resource markets in the Former Soviet Union (FSU) countries. At the same time, traditional export markets within the FSU were also lost following the collapse of the Soviet system. Since trade relations within the FSU were not based on comparative advantages, but rather on the political objective of strengthening the dependencies between all Soviet republics, the production structure has now had to be adjusted to new market conditions. After regaining its independence, Latvia gradually became a net importer of agricultural and food products. Processors even lost their domestic market shares to foreign competitors in 1992-94.

However, the recovery and further growth of the food industry is crucial for the Latvian economy for two reasons. First, it is one of the most important sectors of the Latvian economy, accounting for 9 per cent of total GDP and 40 per cent of industrial GDP in 1996. Second, its structural crisis is the main obstacle to increasing output, productivity and profitability in Latvian agriculture. To understand the structural changes within the food industry and to improve its performance, it is necessary to analyse the impact of the macroeconomic environment, governmental policies, the privatisation process, the change in demand and input supply conditions on the development of the food industry. Thus the aim of this study is to ascertain which of the many potential causes of inefficiency are the most serious obstacles to inducing a process of sustainable growth in the Latvian food industry.

The first step towards achieving this is to define the present situation of the Latvian food industry. Thus section 2 gives a general description of the food industry and its role for the Latvian economy, while the third chapter provides more detailed explanations of the situation in the food industry in a broader macroeconomic and political perspective. The procedure and results of the privatisation process are analysed, as are issues relating to the creation of market institutions, and the adoption of bankruptcy legislation, quality standards and anti-trust regulations. In the fourth chapter, the basic conditions of demand, input supply and production are evaluated. In chapters 5, 6 and 7 the food industry is analysed following the structure-conduct-performance paradigm of the Industrial Organisation Theory and some conclusions are drawn.

2 GENERAL IMPORTANCE OF THE FOOD INDUSTRY

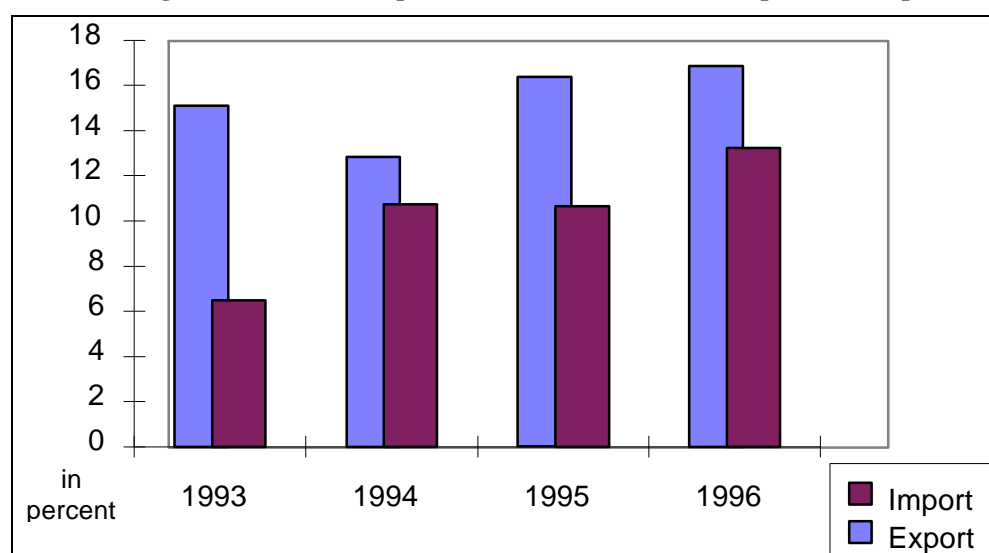
The share of manufacturing in GDP was 37.3 per cent in 1992 in constant prices, and dropped to 22.5 per cent in 1996. During the last three years food processing accounted for 8 to 9 per cent of total GDP and to about 40 per cent of GDP in manufacturing. In 1996, the real volume of the entire industrial output showed the first small increase since the restoration of Latvian independence. Roughly 400 different food processing plants exist in the country. These employ about 30,000 people or 2.5 per cent of the total number of employed persons, with an average output per employee of about \$30,000 per year. Within the food industry differences in labour productivity are quite large. For example the output per worker in bread production is less than one third of that in the milling industry (basic cereal products, see Table 2.1). The main reason for such differences is the capital intensity of the different subsectors. While the milling industry is highly mechanised, production in bakeries is very labour intensive. Table 2.1 provides an overview of the structure of the different food sectors in 1996. The development of these sectors during the last years has been mainly determined by factors such as the availability of raw materials, finding new export markets, and changes in consumption.

Table 2.1: Structure of sectors in food industry in 1996

Type of activity/ product	Output (in current prices, mill. LVL)	Share in total food industry output (%)	Number of employees	Production per employee, LVL
Total food industry	430.9	100.0	29627	14544
Meat processing	51.7	12.0	3150	16413
Fish processing	69.5	16.1	7292	9531
Fruit and vegetable processing	18.3	4.2	903	20266
Milk and dairy products	78.5	18.2	5199	15099
Basic cereal products	37.0	8.6	1142	32399
Bread production	51.4	11.9	5601	9177
Sugar production	14.3	3.3	1259	11358
Chocolate and chocolate products	27.4	6.4	1269	21592
Production of non-alcoholic beverages	27.4	6.4	1816	15088
Other types of activity	55.4	12.9	1996	27756

Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (1997): The main indicators of industry 1997, p. 8 - 9.

The agricultural and food processing sector also accounts for an important share of the foreign trade turnover in Latvia. Whereas the export share has remained stable in the last four years, amounting to approximately 15 per cent with a slight tendency to increase, the import share more than doubled from 6 per cent in 1993 to 13.2 per cent in 1996 (see Figure 2.1). But one must keep in mind that, following a report prepared by the Ministry of Economics, "the comparability of export and import data over the years should be critically viewed". Also, the Ministry of Agriculture is reporting significant volumes of uncounted agricultural and food stuff imports. Data about exports has, however, been evaluated as more reliable. Exports of finished fish products and canned fish constituted more than half of total exports of food products in 1996. Milk and milk products, and confectionery each had an export share of 11 per cent. The main imports were cereals, sugar, fish and finished fish products, fruit, as well as alcoholic beverages, juices and mineral water.

Figure 2.1: Share of agricultural and food products in the value of total imports and exports

Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (1997): Macroeconomic indicators 1997 no. 1, 79 - 81.

3 GOVERNMENT POLICIES

3.1 Macroeconomic policies

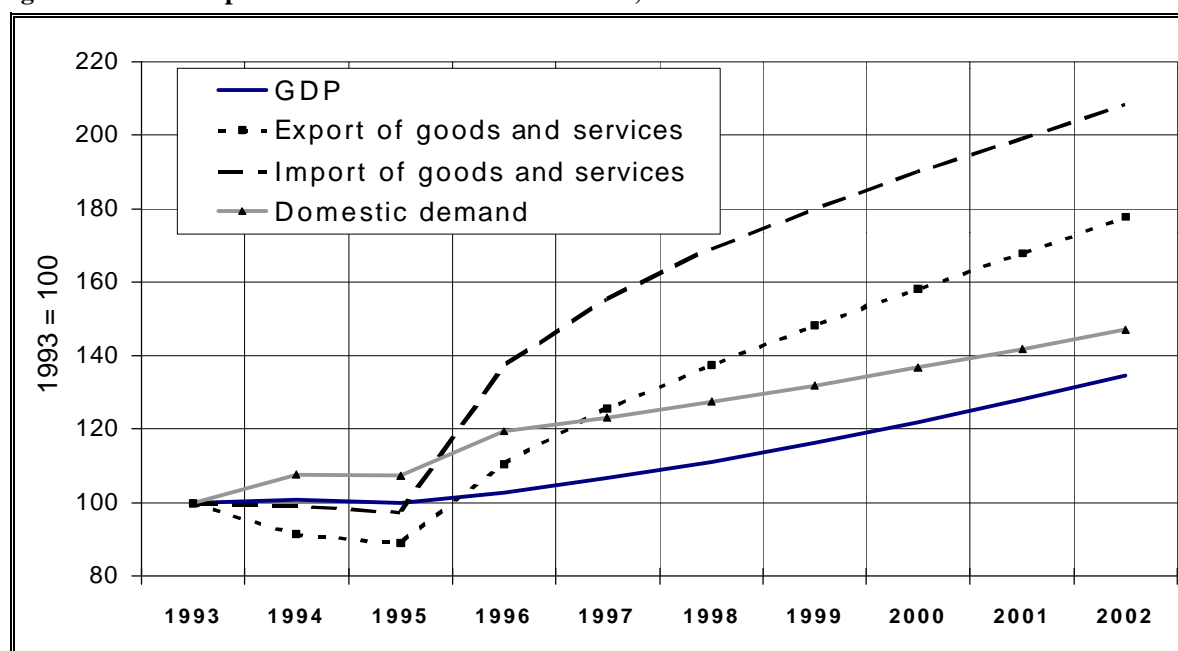
Over the last few years, Latvia has undergone a process of economic reform. The institutions needed for a functioning market economy have been established, and steps have been taken to ensure macroeconomic stability. Macroeconomic indicators show that the economic situation in Latvia has stabilised. In 1996, there

was growth in the country's GDP, and the decline in industrial output was halted. The positive trends of 1996 have continued in 1997. In the first seven months of 1997, there was growth in the country's important macroeconomic indicators, including the economic activity index, compared to the same period in the previous year². The Latvian government has preserved fiscal discipline, and the Bank of Latvia has implemented a strict monetary policy, allowing Latvia to considerably reduce inflation. Latvia currently has a lower inflation rate than the other two Baltic states.

3.1.1 GDP growth and investment

To describe the possible macroeconomic development, forecasts from the Ministry of Finance were used. In the graphs and tables, data for 1997 are preliminary, for the years 1998 to 2002, forecasts elaborated by the Ministry of Finance have been applied. The consequences of the 1995 banking crisis were successfully overcome in 1996, and macroeconomic stability achieved. In 1996, Latvia's **gross domestic product (GDP)** when compared to the previous year increased by 2.8 per cent at constant prices. Economic development continued to progress that year. Annual growth in GDP is expected to be on average 5 per cent between 1998 and 2002. There have been definite signs of development in the processing industries, with the volume produced and exported slightly increasing. According to predictions, the increase in economic activity will be fuelled by domestic and foreign investments, as well as by the restructuring of the economy, which is a result of privatisation. Investment volumes in Latvia began to grow again in 1994. According to Ministry of Finance calculations, gross fixed capital formation in 1996 increased by 6.6 per cent at constant prices. Over the next five years, the growth rate in investment volume is expected to be higher than the GDP growth rate. This will be largely due to a more rapid increase in foreign direct investment (FDI), as well as to local (including government) investment. The share of investments in GDP is expected to increase from 17.5 per cent in 1997 to 19.5 per cent in the year 2002.

Figure 3.1: Development of macroeconomic indicators, 1993 = 100



Source: 1993-96 CENTRAL STATISTIC BUREAU OF LATVIA: Macroeconomic indicators 1997 no. 4, p.16, 60 - 77.
 1997 CENTRAL STATISTIC BUREAU OF LATVIA (forecasts).
 1998-2002 MINISTRY OF FINANCE (forecasts).

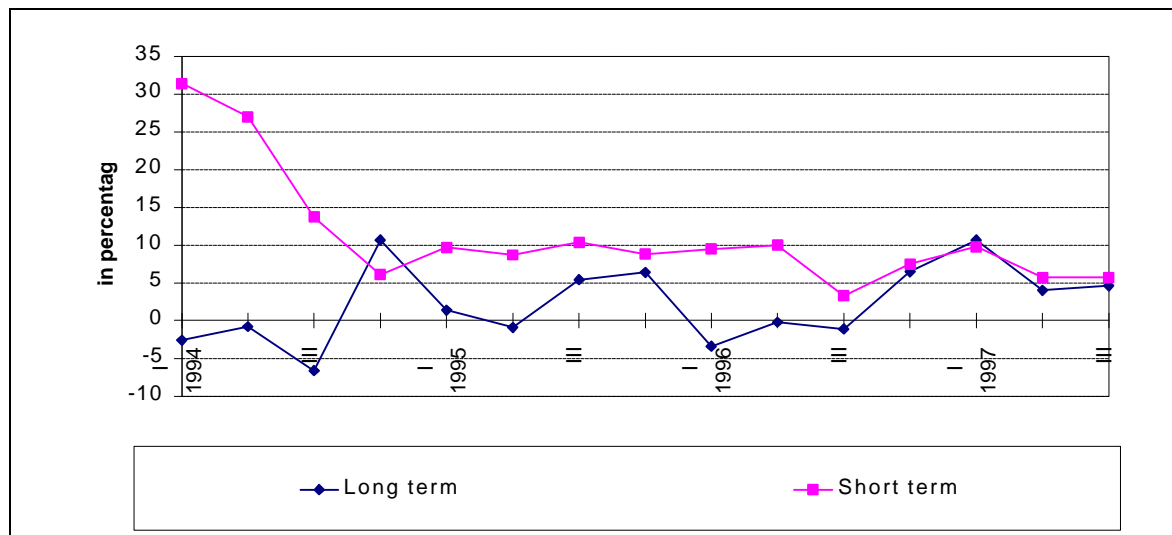
3.1.2 Capital market

The low levels of long-term bank loans and FDI have led to a lack of capital in the Latvian economy. This is probably having the worst effect on the development of the private sector and on economic activity including development of the food industry. The volume of loans in 1996 to domestic companies and private individuals

² This index is computed as the unweighted geometric mean of five economic variables: retail trade, industrial output, the public sector wage bill, currency in circulation (net of vault cash balances), general budget revenues. It is deflated by the average of consumer and producer price inflation.

increased only by 3.5 per cent. In the first half of 1997 growth was more rapid; in June, the volume of loans had increased by 32.1 per cent compared to the same month in the previous year. The reason for this positive development is a cut in real interest rates in 1997, especially for short-term loans. This has allowed commercial banks to expand their credit operations and let Latvian enterprises receive long-term loans to invest (see Figure 3.2).

Figure 3.2: Real interest rates for domestic companies and private individuals



Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (1997): Monthly bulletin of Latvian statistic 1996 no. 1 - no. 12, 1997 no. 1 - no. 7.

3.1.3 Inflation rate and foreign exchange policy

In 1996, consumer prices increased by 17.6 per cent (annual average, see Table 3.1). Between January and August 1997, the consumer price index (CPI) increased by 8.9 per cent, while, at the same time, the price index for food products increased only by 3.2 per cent compared to the same period in the previous year. This decline in the Latvian inflation rate is assumed to continue, but the level of developed Western European countries will not be reached in the medium term. As forecasts of the Ministry of Finance show, the inflation rate should reach a level of 4.6 per cent by the year 2002. These forecasts assume that strict monetary and fiscal policies will be maintained, that the currency exchange rate will remain stable, and that the money supply will be controlled.

Table 3.1: Consumer price indices, % of previous year

	1991	1992	1993	1994	1995	1996
Consumer price indices	272.2	1051.2	209.2	135.9	125.0	117.6

Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (several years): Latvia in figures 1996, p. 42.

Since February 1994 the exchange rate of a lat has been unofficially pegged to a Special Drawing Rights (SDR) currency basket (1 SDR = 0.7997 LVL). This policy of fixed exchange rates is a burden for Latvian exports, since the relatively high inflation rates in Latvia compared to the SDR currencies have led to a real appreciation of the lat. For the food industry the effects of the overvalued exchange rate are twofold. Raw material can be obtained at lower prices due to this distortion, but at the same time the prices in local currency received for the final product are depressed due the overvalued exchange rate. Thus, especially those food industries with high value added are hit negatively by this policy. Nevertheless, the government does not want to endanger the stability of the currency. In order to encourage exports, an increase in productivity through the acceleration of structural reforms is therefore considered necessary.

3.1.4 Employment

The unemployment rate, which amounted to only about 2 per cent in 1990, has risen to 7 per cent in 1997. There are different aspects which determine the change in employment opportunities in Latvia in the future. First, the fact that bankrupt companies have been liquidated as a result of privatisation may lead to an increase in officially registered unemployment, while at the same time so-called "hidden unemployment" will decline. Unemployment is also influenced by the general privatisation regulations. For many sectors including the food

industry, these regulations specify that existing workforce numbers must be maintained for a specific period of time after privatisation. While this helps to keep the unemployment rate from growing in the short term, it has a negative impact on the efficiency of the respective company and might be detrimental to employment in the medium to long term. Increasing investments in the food industry in the future can be seen as a mean of encouraging the creation of more new jobs. Employment in this sector is influenced by two opposite developments. On the one hand, rising incomes in Latvia will induce a shift from minimally processed products to higher value added food products (convenience food), and thus a rise in employment in the food industry. On the other hand, the increase in mechanisation might partly substitute labour by capital. An increase in imports due to further liberalisation of trade might also result in a drop in employment.

3.2 Privatisation in the food processing industry

Beside macroeconomic stabilisation, the implementation of a market-conform institutional framework is crucial for the creation of a viable market economy that is able to realise sustainable growth. The most important change of institutions in the process of transformation is the enforcement of private property rights, and especially the privatisation of state-owned enterprises. Privatisation in the processing industry and the food sector started in 1992-1993 and, generally speaking, was carried out in two different ways:

- Most enterprises were privatised according to the **general privatisation scheme** determined by the “Law on privatisation of state and municipal enterprises”, passed in 1992, and its new version which differed substantially from the first one and was adopted in 1994. The law was applied to most cases of privatisation of vegetable and fruit processing industries, beverages and confectionery production (excluding the bakery industry), as well as to the remaining enterprises from other (non-food) sectors of the economy.
- Some sectors of the food processing industry, namely the milk, meat, grain industries, bakeries and also the sugar industry, were privatised **according to so-called special legislation**. Special laws on the privatisation of state-owned enterprises in each particular branch were passed, which gave preferential treatment for agricultural producers.

3.2.1 General privatisation scheme

In both the 1992 and the 1994 versions of the general privatisation law, the shares of a privatised company were to be distributed between several groups of applicants: employees, the state and so-called private investors. Depending on the specific features of each particular enterprise, the law stipulated that employees could acquire between 5 and 20 per cent of shares, and 5 per cent of shares ought to be left in state ownership, to be used as a source of income for the State Pension Fund. This was created with the purpose of accumulating funds for social security. The remaining 75 to 90 per cent of the shares were to be offered to private investors. Especially the regulations governing the acquisition of shares by private investors were changed fundamentally in the 1994 revised version of the Privatisation Law, as will be discussed below. First, however, the general privatisation scheme of 1992, which was applied to some important food enterprises, such as “Laima” and “Uzvara” in the confectionery industry, “Rīgas Vīni” in alcohol production and some others, will be described. According to the general privatisation scheme (top-down approach) which was followed from 1992 to 1994, the business partners of enterprises under privatisation (suppliers of raw materials or main purchasers) could acquire 30 to 70 per cent of shares in an enterprise. The remaining shares could be offered to any other investor interested in such an acquisition. In most cases this meant that other possible applicants, e.g. banks or investment funds, had no real chance to acquire shares in the company during the course of privatisation. Only in the case of companies with operating difficulties were other investors accepted or even invited. Concrete rules of privatisation were elaborated by the privatisation commission, focusing on issues such as the value of the enterprise, the number of shares in different lots, and the form and terms of payment. The privatisation commission was appointed by the government for each individual enterprise.

This approach caused the following problems:

- a lack of flexibility concerning the terms of payment and the division of capital shares made it difficult for privatised enterprises to solve problems with large debts;
- financial funds acquired during privatisation were not used for the development of enterprises, but for fiscal purposes;
- as a result, a broad range of owners with conflicting interests emerged. None of them had preferential rights in the decision-making process. Very often this created serious obstacles for management, including decision-making about attracting investments;
- the privatisation process was very slow, since government had to decide on each enterprise individually. Concrete privatisation conditions had to be negotiated (co-ordinated) between various governmental institutions.

As a consequence, only a very limited number of enterprises were privatised in the years 1992 to 1994.

After 1994 the so-called bottom-up approach was applied. It provided solutions for several problems that had occurred while the previous version of the law had been in force. Instead of a decentralised management approach, with the privatisation process being organised by sectoral ministries, a permanent State Privatisation Agency was established. This seemed necessary to speed up privatisation, to strengthen its management capacity, and to centralise the money flow, so as to be able to cover state enterprise debts from the money earned. The privatisation agency is managed by a Board of Directors and supervised by a Supervision Council, consisting of representatives from different political groups.

A new term was introduced - the "strategic investor". This refers to any natural or legal person interested in acquiring management control over an enterprise after privatisation. As already mentioned, under the old version of the privatisation law, no "main" manager was envisaged for the privatised company. The total number of shares was distributed among many new owners, and none was given the majority of votes. Under these circumstances, agreement on issues of management, development strategy, and the investment needs and sources of financing for the privatised company could only be reached after privatisation, when the new owners met for the first time. Sometimes this was extremely difficult.

Thus, the first privatisation scheme had solved the private ownership problem, without being able to ensure an efficient management of the newly privatised companies. To avoid this, the new version of the law stated the need for an individual, a company or an organised group of persons, with a clear picture of the future development of the company after privatisation, and who would be ready to follow the rules agreed on for a particular company. The new version of the law also helped to improve the transparency of the privatisation process, which had in fact been one of the main reasons for revising the 1992 privatisation law. A third urgent problem solved by the updated law is the liquidation of insolvent state enterprises. For this purpose the 1994 privatisation law defines the procedure of how to liquidate a state company, sell its assets and cover its debts. The new law facilitates the acquisition of state property. Four possible main methods of acquiring property rights in a state company to be privatised are given:

- capitalisation of debts;
- long-term lease;
- public auctions where shares can be bought either for cash or for privatisation vouchers;
- issue of new shares and their sale to natural or legal persons.

These methods can also be combined, for example the capitalisation of debts, the sale of new shares to natural or legal persons, and public auctions of part of the shares. In the food processing sector this approach was for instance used to privatise breweries and other enterprises in the alcohol industry, and also the confectionery enterprise "Staburadze".

A very important issue in all privatisation legislation is the participation of foreigners. Principally both versions of the general privatisation law and also other privatisation concepts allow foreigners to participate in the privatisation process - either directly or through subsidiaries registered in Latvia. Sometimes foreigners were even given preferential treatment under the privatisation rules for individual companies. As a result, Scandinavians entered the brewery industry, Austrians and Germans the bakery industry, Americans the confectionery industry, and the British the sugar industry. In other cases, foreign companies entered the Latvian food processing industry after the initial privatisation had ended and private enterprises had been established. In the bakery industry, for instance, a joint venture was formed with *Cultor* from Finland, and investors from Estonia became involved in the meat and dairy industries. Special invitations to participate in privatisation were more typical in other industries such as energy and telecommunications.

3.2.2 Special legislation

In addition to the general privatisation laws, special legislation was introduced for specific branches of the food industry, namely the dairy, meat, sugar, bakery and milling industries. These special regulations were implemented for three main reasons:

- **to regulate the distribution of shares** among different groups of shareholders. The general privatisation law did not give preference to agricultural producers, although there was strong political pressure to do so. This request was taken up in the privatisation laws for the dairy and grain processing industries.
- **to speed up privatisation in the processing industry.** The special legislation was passed before the 1994 version of the general privatisation law. Privatisation in agriculture and the retail sector was largely concluded in 1992-1993. Food processing was the only link in the whole food chain to remain in state hand, causing additional problems and inefficiencies in the up- and downstream sectors.
- **to improve the management of the privatisation process in the processing industry.** One centralised privatisation commission was established for each particular processing branch, as opposed to the special commissions for individual enterprises provided under the general privatisation legislation until 1994.

Several concepts from these specific laws were used in the new version of the general privatisation law. Among them are the reorganisation of state enterprises into state joint stock companies and the sale of shares to this company, one privatisation commission for the whole branch, and the “strategic investor” concept. The main features of the special legislation governing the dairy, meat and milling industries, which are the most important branches of the Latvian food industry, are given below.

The dairy sector was privatised according to the “Law on privatisation of state milk processing enterprises”, passed in 1992. The creation of milk producers' co-operatives was one basic principle of the restructuring and privatisation process in this sector. It was privatised in two stages. First, large dairies were reorganised, and milk collecting and processing enterprises were offered to co-operatives free of charge. In the second stage, the remaining milk processing enterprises were privatised, including those units that were part of the former centralised milk processing system. This included reorganising state enterprises into companies and offering their shares to:

- milk producers' co-operatives,
- employees,
- other natural or legal persons,
- state pension fund.

In most cases joint stock companies were formed during this second stage.

Under the privatisation rules, milk producers' co-operatives had to be given preference in becoming the principal shareholders, with quotas of no less than 70 per cent of the shares being offered to them. Other persons were only allowed to take control of the enterprise in exceptional cases or in later stages of the privatisation process.

The meat processing sector was privatised according to the “Law on privatisation of state meat processing enterprises”, passed in 1993. The Central Privatisation Commission for meat processing enterprises was established under the Ministry of Agriculture, which was responsible for the entire privatisation process of state enterprises in this sector. The main method of privatising state meat processing enterprises was their reorganisation into state joint stock companies, followed by the sale of state-owned shares to individuals or companies. The majority of stocks (no less than 51 per cent) had to be offered in public tender to so-called principal investors, who could be natural or legal persons. Potential principal investors were required to present their business plans to the privatisation commission. Amendments to the law that were adopted later granted certain privileges to farmers and their co-operatives. However, agricultural producers did not utilise their rights to obtain the 20 to 30 per cent of shares allocated to them.

Under the “Law on Privatisation of Bakeries“ (passed in 1993) the same privatisation approach as in the meat processing sector was generally used in the grain processing and bread production enterprises.

3.2.3 Results of the privatisation

The privatisation process of the Latvian food industry was affected by political changes and political pressure from the farm lobby. Thus, privatisation did not take place under the same conditions for all enterprises in the food industry, which may well influence their competitiveness in the future. Despite the difficulties, privatisation was carried out in a relatively short time, and, by the end of 1996, privatisation of the food processing sector had essentially been completed. Today only one important enterprise in the whole food industry - the main alcohol company - has not been completely privatised, but privatisation tender has already been announced.

However, it must be stressed that the privatisation carried out in this sector so far can only be considered as the initial stage of restructuring. Further adjustments will be necessary and will be determined by market forces.

3.3 Institutional framework

The privatisation of state enterprises within a sector does not automatically make it competitive. A number of complementary institutions are necessary to secure the functioning of a market economy. Privatisation will only lead to the desired results if badly managed enterprises can go bankrupt; this requires bankruptcy legislation. Especially when a centralised economy is transformed, anti-trust legislation is also needed to ensure that the market will function well without being controlled by newly emerging monopolies. In the case of the food industry, the guarantee of phytosanitary standards is equally crucial, to protect consumers and to improve competitiveness on international markets. These three important areas of legislation will be discussed in this section to gain a better insight into the institutional framework of the Latvian food industry.

3.3.1 Bankruptcy legislation

The basic law regulating recognition of insolvency of all enterprises and companies registered in the Republic of Latvia except credit institutions is the “Law on insolvency of enterprises and companies”. Under this law, a court decides on the insolvency of a debtor and other, related issues, taking into consideration this legislation

and the code of civil procedure. The details of insolvency of state and municipal enterprises, as well as companies in the process of transition, are also governed by this law. The Ministry of Agriculture can make the notification on insolvency for the food enterprises concerned.

There are no differences between the liquidation procedures for the different sectors of the economy. In the food processing industry, the law has most frequently been applied to meat processing enterprises. If an insolvent enterprise is auctioned off, the applicant (bidder) is obliged to settle all debts to agricultural producers. If nobody is interested in acquiring the insolvent enterprise, agricultural producers can apply for the liquidation quota, which will be available only after the liquidation procedure has been completed. However, the cost of liquidation very often exceeds revenues from the sale of an insolvent enterprise, and farmers are thus unable to get any compensation for the raw materials they have delivered. Generally speaking, the above-mentioned law only outlines the liquidation procedure to be taken in the case of insolvency. Farmers are not guaranteed reimbursement for any debts; neither does the government take responsibility for them.

3.3.2 Anti-trust regulation

Several norms that are contained in the "Law on Competition" also apply to agricultural enterprises or companies. The Competition Council has to be notified of planned mergers, acquisitions and other types of agreements between enterprises that could possibly affect competition, and to adjust its decisions accordingly. These decisions regarding monopolistic practices or unfair competition are binding. The law prohibits conclusion of any agreement that causes or could cause significant production, marketing or trade restrictions, or could lead to a distortion of competition on the Latvian market. Where a merger or an acquisition would lead to a concentration of capital and the new company stands to gain at least 25 per cent of the market share for its respective product or service, the Council must be notified in advance.

3.3.3 Quality standards

The Europe Agreement, signed on 12 June 1995, established a bilateral association between the Republic of Latvia and the European Union. In this treaty both parties have expressed their interest in Latvia's membership in the EU. But in order to achieve EU membership, Latvia must bring its legislation, regulations and requirements in line with the EU. Especially the areas of food quality assurance and control represent great challenges.

The Ministry of Economy together with other institutions is responsible for the Quality Assurance National Program, that is implemented within the framework of the PHARE PRAQ 92 Regional Program. One of its components is food quality assurance. In Latvia different government departments (for health, agriculture, trade, industry, education, environment etc.) are responsible for food quality and safety issues. Government must ensure that food laws and other legislation and regulations are properly enforced. The most important laws and regulations which were issued in Latvia are:

- the "Law on Protection of Consumer Rights" adopted on 28 October 1992. It acted as an "umbrella law" that was followed by further legislation in the area of consumer protection;
- the "Law on Veterinary Medicine" adopted on 30 June 1992. Its main purpose is to ensure that agricultural raw materials and food are not harmful or unsafe for human health or consumption;
- the "Law on the Order and Surveillance of Food Handling" was adopted on 29 June 1995. It regulates the quality and safety of raw food materials at all stages of handling (production, storage, transportation etc.), as well as providing for state supervision and quality control.

At present, the latter two laws are harmonised with EU and FAO regulations and recommendations. Food processing enterprises must apply Hazard Analysis Critical Control Point (HACCP) system standards and the ISO 9000 series standards. Latvia is now in the process of adopting ISO 9000 series standards as national standards.

On 27 September 1995, the Technical Committee of Food standards was established, which is currently drafting regulations and requirements for food standards. One problem is the existing duplication of and overlap in inspection activities (veterinary, health, environment, food quality and trade inspection). Other difficulties exist in the analysis of food control. Testing laboratories do not have the necessary equipment to test for all additives and pesticides not allowed in the EU. Moreover, the necessary skills of the inspectorate to introduce modern approaches to food control and to assist food producers and processors is not always given at present. This, however, is necessary to ensure food safety and to improve product quality. The main problems in food safety currently are:

- microbiological contamination of food products and residues of antibiotics in milk;
- worsening of food quality due to food contamination;
- the most dangerous products from a microbiological point of view are bakery products with cream, dairy and fish products, meals from public catering establishments and hospitals.

4 BASIC CONDITIONS

4.1 Demand

Since the liberalisation of prices came into effect on 10 December 1991, prices for food and agricultural products have rapidly risen, outweighing the nominal increase in income and thus resulting in a persistent decline in real income since 1990 (see Figure 4.1). The dramatic decrease in purchasing power between 1990 and 1996 has led to a sharp increase in the household budget share spent on food, from 29 per cent in 1990 to more than 40 per cent in 1994 (see Tables 4.1 and 4.2)³. This share is significantly higher than in the EU, where people spend an average about 20 per cent of their budget on food.

Table 4.1: Development of the CPI, income and purchasing power in Latvia, 1990 to 1996 (1990=100)

Year	Consumer price index	Average net per capita* income	Average per capita purchasing power	Average gross wages and salaries	Average purchasing power
1990	100	100	100	100	100
1991	272	193	71	186	68
1992	2861	1292	45	1335	47
1993	5986	2552	43	2934	49
1994	8135	3751	46	4464	55
1995	10169	4527	45	5559	55
1996	11959	4804	40	6132	51

Note: * according to household budget research, the income includes all revenues in monetary and kind, "in kind" referring to material goods that are used for personal consumption.

Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (several years): Statistical Yearbook 1995, p. 94, 1996 (p. 88); National Accounts of Latvia 1995 (p. 10), Report about results of household budget research in 1996 (p. 6).

Table 4.2: Consumer expenditure shares for food and beverages

1990	1991	1992	1993	1994	1995 first half	1996
29.4	37.8	48.2	44.4	42.5	40.6	52.2

Note: The household budget survey system was changed in 1995.

Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (1995): Household budget in 1994 (p. 23 - 24), first half 1995 (p. 22), 1996 (p. 62).

Low income households spend a particularly high share of their total expenditure on food. For instance, according to the results of household budget surveys, expenditures for food exceeded 65 and 75 per cent of total expenditure in the poorest ten and the poorest 20 per cent of the population in 1996 respectively (see Table 4.3).

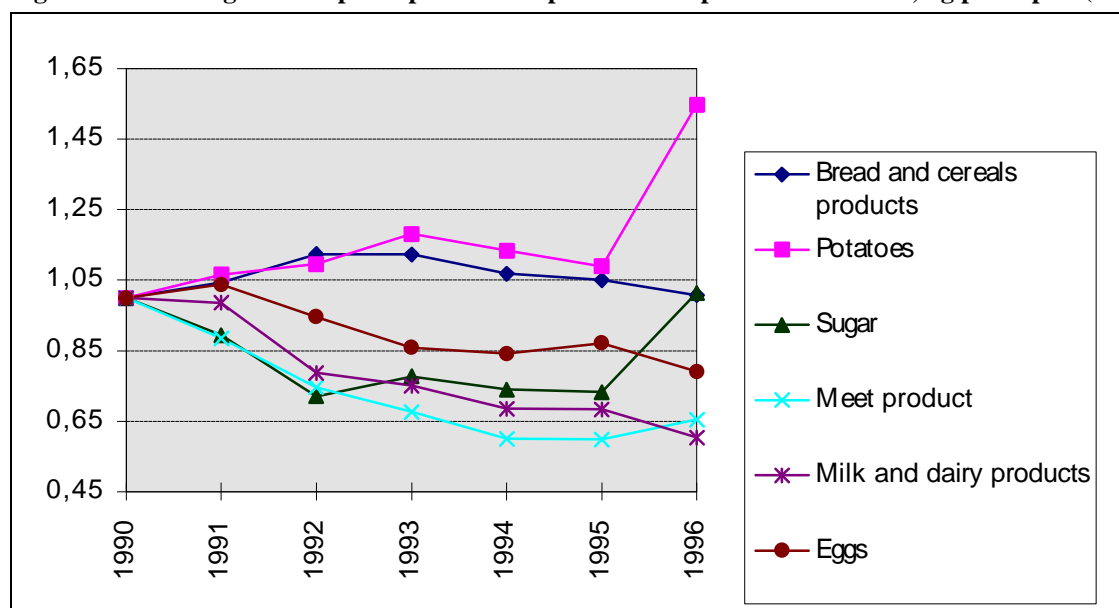
³ 1994 data was taken for comparison, since the main principles of survey systems for household budgets have been changed since the second half of 1995, following EU requirements.

Table 4.3: The level of total expenditures and the share of food expenditure in total expenditure in different income groups of the population in 1996

Income group of population	Average monthly expenditures per adult person, Ls	Share of food products, %
1st group (the lowest)	21.51	74.5
2nd group	33.72	64.9
3rd group	41.39	63.5
4th group	47.62	59.5
5th group	53.62	57.5
6th group	60.60	54.3
7th group	67.98	53.3
8th group	78.30	50.7
9th group	94.70	46.9
10th group (the highest)	146.48	36.6

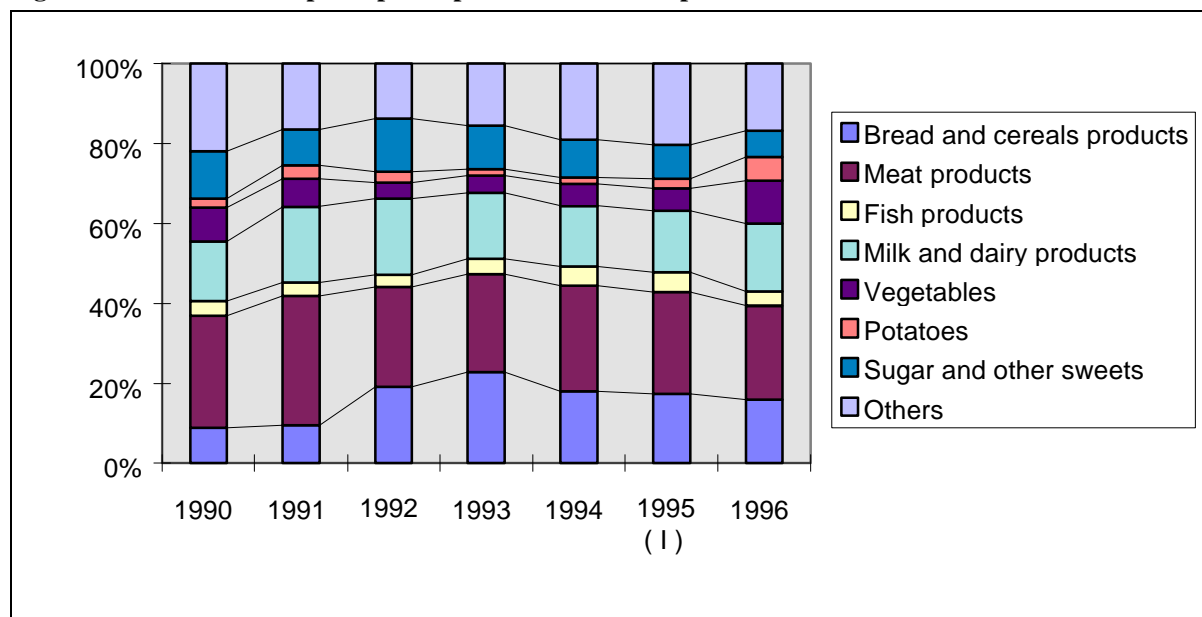
Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (1997): Report about results of household budget research in 1996, p. 14.

During the 1990-1997 period, radical changes in food consumption patterns took place. The consumption of milk, meat products and eggs considerably fell, whereas development trends for the consumption of the main staple food products were the reverse (see Figure 4.1). Thus per capita consumption has shifted away from the more expensive livestock products towards less expensive crop products. Only since 1995, when prices stabilised, has the consumption of meat, eggs and sugar started to increase again, with a simultaneous decline in the consumption of bread and cereals.

Figure 4.1: Changes in the per capita consumption of food products in Latvia, kg per capita (1990 = 1)

Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (several years): Household budgets in 1994 (p. 28), Report about results of household budget research in 1996, p. 13.

During the period 1990-1996, the structure of food expenditures also changed (see Figure 4.2). According to the results of the household budget survey, the share spent on bread and cereals rapidly increased in 1992-1993. After 1994 this development was partly reversed again.

Figure 4.2: Structure of per capita expenditures for food products

Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (1995): Household budget in 1994 (p. 23 - 24), 1996 (p. 60), information of LATVIJAS VALSTS AGRĀRĀS EKONOMIKAS INSTITŪTS on the basis of unpublished data from the Latvian Statistic Bureau.

4.2 Input supply

The efficient functioning of the agricultural sector is of the utmost importance for the food industry. Since the beginning of transition, the agricultural sector has undergone considerable structural changes. Table 4.4 reveals that, since 1990, a large number of private farms have been established, while the number of state farms has decreased by more than 60 per cent. By now, the private sector has the leading position in Latvian agriculture, irrespective of whether the number of farms, the area sown or the share in livestock numbers are used as a criterion.

Table 4.4: Sown area and animal numbers by type of farm

	1990	1994	1995	1996
Number of farms:				
State farms	210	95	92	81
Statutory companies	424	656	617	474
Peasant farms, household plots and private subsidiary farms	7500 ⁴	307700	200200 ⁵	268200
Sown area, 000 ha				
State farms			23.2	
Statutory companies	1482.7*	293.0*	198.8	192.7*
Peasant farms, household plots and private subsidiary farms	144.3	901.6	708.2	793.4
Share of peasant farms, household plots and private subsidiary farms in total number of animals, %:				
cattle	22.0	66.7	73.7	76.0
of which cows	29.8	76.4	79.8	80.9
pigs	14.2	54.6	63.4	63.0
poultry	9.5	33.0	32.2	34.2

Note: * including state farms

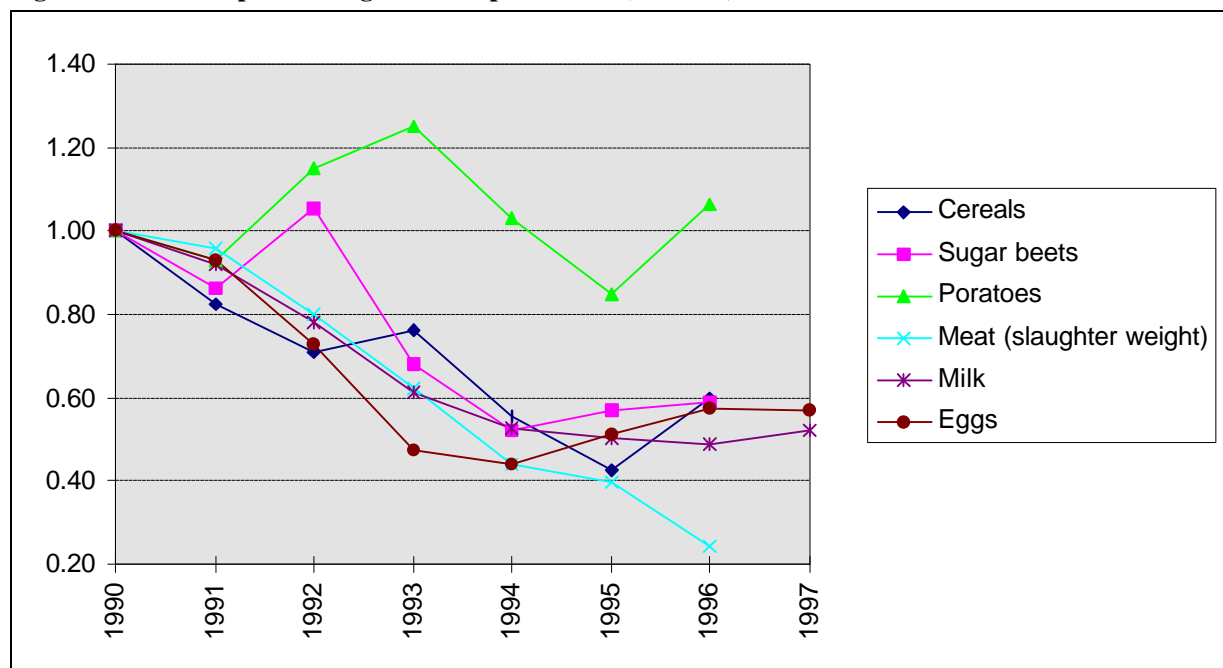
Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (several years): Agriculture in Latvia, p 7, 14, 32, 34; Statistic Yearbook of Latvia p. 195.

This considerable restructuring process in the agricultural sector, together with the widening gap between output and input prices following the elimination of subsidies, has led to a dramatic decrease in agricultural production since the beginning of transition. According to information from the Central Statistic Bureau, the real volume of agricultural output in 1996 reached only 42 per cent of the 1990 production level. Production of all main agricultural products de facto decreased until 1994/1995, when a certain stabilisation was achieved for most products (see Figure 4.3). Only meat production has shown a continuous decline, even in 1997 when the level of meat production was 6 per cent⁶ less than in the previous year.

⁴ Only peasant farms.

⁵ Peasant farms and household plots.

⁶ According to unpublished data from the Central Statistic Bureau of Latvia, meat production was 97,000 tons (live weight) in 1997.

Figure 4.3: Development of agricultural production (1990 = 1)

Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (several years): Agriculture in Latvia, p 20, 37; Latvia in figures 1996, p. 77, 80.

The stabilisation process in agricultural production has been accompanied by a gradual rise in productivity. As is shown in Table 4.5 the 1990 level almost approached that of 1996.

Table 4.5: Productivity of livestock and yield of agricultural crops and in Latvia

	1990	1994	1995	1996
Average milk yield per cow, kg	3437.0	2923.0	3074.0	3237.0
Average egg production per laying hen, pieces	210.0	154.0	192.0	205.0
Yield of agricultural crops, 100 kg per ha:				
Cereals and pulses	23.6	18.4	16.9	21.5
Wheat	26.3	21.1	22.2	24.0
Sugar beets	299.0	190.0	264.0	259.0
Potatoes	127.0	130.0	115.0	138.0

Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (several years): Agriculture in Latvia, p. 24, 37 .

The development in the agricultural sector has had significant implications for the food processing sector. The decline in agricultural production has considerably reduced raw material availability for the processing sector and has thus been a major reason for the low capacity utilisation in this sector. Another is the restructuring of the agricultural sector that encouraged the creation of many very small peasant farms, many of them primarily engaged in subsistence farming. The lack of alternative employment opportunities has encouraged these farms to engage in processing activities themselves inducing a decrease in the procurment share of total production.

Table 4.6 shows this decrease in the procurement share for important livestock products.

Table 4.6: Procurement share in total production of livestock products, %

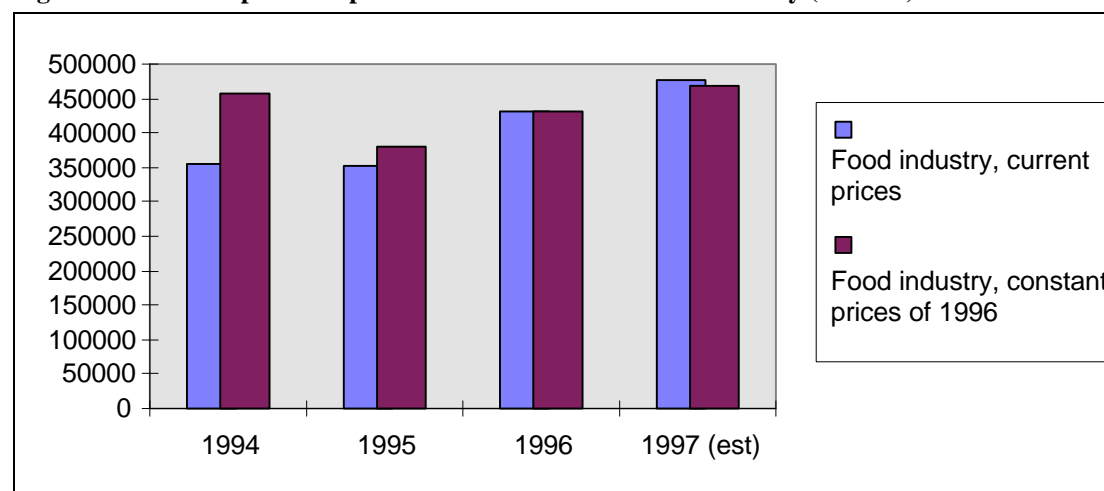
Product	1990	1994	1995	1996	1997 ⁷
Meat	87.1	37.2	32.1	40.4	38.4
Milk	85.1	37.1	33.9	39.1	36.5

Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (several years): Agriculture in Latvia, p. 37, 43 - 44.

4.3 Developments in the food industry

Following a sharp drop in production in the early 90s, the Latvian processing and food industry now seems to have overcome the economic crisis. In 1995, production volumes started to increase again (see Figure 4.4), and for 1997 a further growth in production is expected. These first signs of positive development reveal an improvement in competitiveness. Growing Western imports have forced the Latvian food industry to reorient towards meeting consumer requirements by increasing the quality and variety of food products, as well as improving the packaging. But even though first steps have been taken, a number of problems still remain to be solved. One important limitation is the quality of Latvian food industry outputs; although improved, it still varies greatly, reducing the export possibilities for such products, especially to the west. The outdated machinery and the lack of access to capital also hamper the competitiveness of this sector. In addition, the existing average overcapacities of the food industry, which vary between 40 and 70 per cent compared to 1990, have resulted in an increase in processing costs; this reduces the sector's competitiveness.

Figure 4.4: Development of production in the Latvian food industry (1000 Ls)



Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (several years): The main indicators of Latvian industry in January - June 1995 (p. 3), 1996 (p. 6), no. 2/1997 (p. 9).

The production structure of the food processing industry has substantially changed since the early 90s (see Table 4.7). Production volumes of more expensive products such as a processed meat and sausages, butter and cheese have fallen dramatically. There are two reasons for this; first, demand for these products has declined considerably, and second, domestically produced goods often cannot compete with cheaper imports from West European countries. However, some sectors of the Latvian food industry seem to be able to compete on the domestic market and on the markets of the FSU countries. These include the dairy, fish, milling, beverages and confectionery industries, which have strengthened their position on the domestic and eastern markets and are even starting to expand into the EU market.

⁷ According to Ministry of Agriculture forecasts, procurement of meat and milk will be correspondingly 37,300 and 359,200 tons in 1997.

According to unpublished data from the Central Statistic Bureau of Latvia, production of meat was 97,000 tons (live weight) in 1997.

Table 4.7: Manufacture of food products, beverages and tobacco in 000 t unless otherwise stated

	1993	1994	1995	1996	1997 (I-IX)
Meat (including 1st class edible offal), total**	96.1	49.6	29.7	21.9	13.6
Sausages	40.9	37.3	33.0	24.9	18.9
Preserved meat	1.8	1.3	0.6	0.8	0.6
Prepared fish	34.7	16.1	14.4	8.9	11.9
Preserved fish	23.2	29.9	38.7	53.7	58.8
Preserved fruit and vegetables (including mushrooms)	8.2	6.1	5.3	3.3	7.9
Vegetable oil	3.9	0.8	0.5	0.4	0.5
Butter	18.9	9.8	6.4	7.0	5.1
Cheese	12.0	9.9	9.4	8.7	8.3
Whole milk products (converted into milk)	202.6	210.6	212.9	201.4	162.4
Ice cream	4.5	5.6	6.1	5.6	4.8
Preserved milk	6.9	8.0	7.2	12.2	11.8
Flour	109.6	173.5	143.2	144.3	91.9
Groats	3.8	4.6	2.8	4.0	1.7
Composite forage	245.4	174.0	214.4	199.1	134.9
Bread	177.4	161.5	145.4	121.6	87.7
Granulated sugar	47.8	54.6	87.3	94.6	48.5
of which from sugar beet	26.0	15.8	29.3	31.2	1.3
Chocolate and sugar confectionery containing cocoa	3.5	8.2	7.2	9.1	6.6
Sugar confectionery not containing cocoa	7.4	8.1	10.5	12.9	10.7
Pasta and similar farinaceous products	0.8	2.7	3.1	2.1	0.7
Beer, 000 dl	5459.0	6379.0	6528.0	6098.0	5700.0
Non-alcoholic beverages, 000 dl	1588.0	1948.0	2132.0	1210.0	1451.0
Mineral water, 000 dl	400.0	631.0	1592.0	1759.0	2233.0
Cigarettes, mill. pieces.	2589.0	2093.0	2101.0	1876.0	1278.0

Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (several years): Monthly bulletin of Latvian Statistic 1997 October (p. 84 - 85); 1996 December (p. 91 - 92); Statistical Yearbook of Latvia 1996 (p. 212 - 213).

5 STRUCTURE OF THE FOOD INDUSTRY

In this chapter, questions of ownership structure, market power, employment, vertical integration and market channels shall be discussed. One of the most debated issues in the transition process is the ownership structure that has resulted from privatisation and its impact on the further development of enterprises. This issue will be dealt with in section 5.1, while section 5.2 will analyse the market structure, as one important determinant for the degree of competition. Section 5.3 focuses on employment, outlining the importance of several branches of the food industry. For the transition process to be successful, changes in the degree of vertical integration might be necessary. The degree of and changes in vertical integration between the food industry and agricultural producers, as well as between the food industry and the distribution sector are therefore analysed in Section 5.4.

5.1 Ownership structure

Practically all formerly state-owned processing enterprises are now reorganised as joint stock companies, and the present owners are natural or legal persons. Each sector of the food and processing industry was privatised according to special legislation. Each sector and even each enterprise has a specific ownership structures. The basic division of shares in the different sectors of the food industry is reflected in Table 5.1.

Table 5.1: Basic ownership structures

	Percentage of shares					
	Agricultural producers	Employ-ees	State	of which pension fund	Others	of which strategic investors
Small local dairies	100			0		
Large milk processing plants	>70	<10	<10	0	<20	0
Meat processing	<30	<10	<10	5	>51-70	>51
Bakeries	0	<10-25	<5-10	<5-10	>65-85	>65-85
Grain processing (milling industry)	>51	<10	<10		20	

Source: Data of LVAEI.

Table 5.1 shows that the position of agricultural producers as shareholders of the newly privatised enterprises is very strong, especially in the dairy industry. The reasons for this, as well as the implications, will be discussed below for the milk, the grain and the meat processing sectors.

The process of privatisation in the milk processing industry has been completed in all 15 state processing enterprises. The structure of ownership in many of those enterprises immediately following privatisation was as follows: 70 per cent of shares belonged to dairy farming associations, 10 per cent to employees of the enterprises, and 20 per cent to other entrepreneurs. This structure resulted from the governmental decision during the privatisation process to strengthen the position of milk producers in privatised milk processing enterprises by returning small dairies to milk producers free of charge, as well as giving them the possibility to acquire the majority of shares (70 per cent) in the large milk processing enterprises at very favourable conditions. The main reasons for this were:

- an attempt to restore ownership, in order to re-establish the milk producers' co-operatives which had existed in Latvia in the 30s;
- to provide the milk producers with possibilities for selling their produce by establishing close links between milk producers and processors.

In this respect, the dairy farmers had a special advantage, since conditions to acquire property were not as favourable for agricultural producers in other processing sectors.

At the same time, there were a number of enterprises whose shares were not all sold during the process of privatisation. These shares became state property. During the following years, they were sold to different commercial enterprises including banks. As a result, in some milk processing enterprises, especially those based in the eastern regions of Latvia, more than 50 per cent of shares belong to commercial organisations.

The ownership structure also changed as a result of accumulated debts. As already mentioned in section 4.3, one of the main problem for milk processing enterprises was, and still is, a lack of capital. A number of enterprises that had taken out loans were not able to repay them. These credits were capitalised, meaning that a share of the enterprise capital proportionate to the sum of the loan including the interest rate was committed to the trust company. As a result, banks and other trust companies gained control over several milk processing companies. Since it was necessary to improve and modernise the technological process, enterprises were looking for new ways of acquiring capital. This also changed ownership structures. An investor who bought new equipment would receive a number of shares equivalent to the value of this equipment.

The double role of farmers as owners of milk processing enterprises and suppliers to the processing company created a conflict. It is interesting to note that farmers generally decided to sell their milk to the highest bidder rather than to an enterprise in which they had shares. The main reason is that income from milk sales is much greater than income from company profit. Another reason might be that identification with their role as owners of the processing enterprises is rather low. However, it should also be noted that in most cases farmers have not sold their shares to other investors, and generally are not doing it now. Thus, investors interested in acquiring shares often have to wait until new shares are emitted.

Dairy processing enterprises are more interested in co-operating with big agricultural associations or farmers' co-operatives than with small individual producers. This is because larger units are able to provide processors with better quality raw materials, and their deliveries are less affected by seasonality. Especially the first point is of great relevance, since many dairy associations or co-operatives have started to improve the final product's quality and diversity of assortments. However, their success in the new market environment is still hampered by a lack of capital and experience, as well as by inadequate management skills.

Given these problems, it is conceivable that a change in ownership structure could have taken place during the last few years. Information about this important issue is only available for the food industry as a whole. According to expert estimations, the ownership structures in place after privatisation (see Table 5.1) have changed only slightly during the last three years. Ownership has changed in only 10 per cent of the cases, where investors have acquired a company by purchasing shares from previous owners. In the past foreign companies were rather reluctant to invest in the Latvian dairy processing industry.

In the milling industry, state-owned milling enterprises have started to operate as independent separate producers since 1992, following the abolition of all regional procurement barriers and the introduction of free market price mechanisms. Before 1992, specifically defined procurement zones existed for each processing enterprise, and processors were obliged to procure their raw materials from only a specific range of centrally determined suppliers. These individual processing enterprises started to compete among each other. Compared to the milk and meat industries, privatisation of the milling industry was slow. In mid-1995, privatisation had only been completed in two out of seventeen grain processing enterprises. It is important to mention that grain production co-operatives have acquired a controlling part of the shares in practically all large milling enterprises. But agricultural producers' share is far less than 75 per cent, the share which had been assumed according to the law on privatisation. In some cases agricultural producer cooperatives had sold part of their shares to overcome the lack of finances. At the same time, foreign investors have acquired about 20 per cent of total shares, and thus an essential part of the enterprises in this sector.

As regards the large formerly state owned meat processing enterprises, the following ownership structure has emerged: three farmers own 51 per cent of the shares in the meat processing enterprise in Daugavpils; one individual owns the majority of shares in the processing enterprise in Jelgava; three people have acquired the majority of shares of the enterprise in Tukums; one co-operative is the principal owner of the enterprise in Valmiera. Only in one case did the principal investor change after the completion of privatisation, namely in the meat processing enterprise "Rīgas miesnieks" in Riga, one of the biggest meat processing enterprises in Latvia. The Estonian company "Rakvere" bought 67 per cent of the shares in this company. A lot of new small scale meat enterprises have been established during the last years. New 140 meat processing enterprises are in operation.

5.2 Market power

The benefits from privatisation in the downstream industries depend on the extent to which competition increases. If as a result of privatisation imperfect market structures remain in the food industry, this would allow food processing firms to increase their profits at the expense of both customers and input suppliers. Thus it is important to analyse the market structure in the food industry after privatisation. The following analysis will concentrate on the dairy and milling industries, two of the main sectors in food processing.

The Concentration Ratio (CR) is a widely used indicator to quantify the degree of horizontal concentration. This indicator reveals the market share that is captured by the k (4 and 10) largest firms in the sector.

$$CR_k = \frac{\sum_{i=1}^k X_i}{\sum_{i=1}^n X_i},$$

- with X_i = procurement of firm i , where the procurements of different firms (X_1, X_2, \dots, X_n) rearranged in ascending order;
- k = 4, or 10, depending on the coverage of the Concentration Ratio (CR_k);
- n = total number of firms in the sector analysed.

The concentration indices calculated on the basis of volume of sales show that the four biggest milk processing enterprises captured 46 per cent of the entire domestic milk market in 1996 (see Table 5.2), while there are in fact 73 officially registered dairy enterprises in Latvia. This relatively large number is due to the fact that during privatisation a splitting of enterprises took place in the dairy industry. With the privatisation of small dairies, a large number of independent milk processing enterprises was created, but many of them were not able to survive. However, the milk processing industry was practically an exception in this respect, because privatisation of the food sector was generally not accompanied by a strong disintegration of enterprises.

Table 5.2 also shows an upward trend in the development of concentration ratios for the biggest Latvian enterprises; especially the market shares of the 4 largest enterprises have grown from 36 to 46 per cent. Therefore, an enlargement of market shares among the strongest firms in the dairy sector can be expected in the near future. This rise for the biggest enterprises was accompanied by a reduction in operations of the small dairies in 1996-1997. Some of them were acquired by other milk processing companies, and others stopped operating.

Table 5.2: Market shares in % in the dairy processing sector in Latvia measured by the Concentration Ratio, 1994 to 1996

Concentration ratio	1994	1995	1996
Combined market shares of 4 largest milk processing firms	36	41	46
Combined market shares of 10 largest milk processing firms	58	68	68

Source: Own calculations.

In the Latvian milk and dairy sector there are five major and quite powerful milk processing enterprises, namely the milk processing plants in Riga, Valmiera, Tukums, a canned milk factory in RĶzekne and the joint stock company "Kurzemes piens". The biggest milk processing plant in Riga controls about 40 per cent of the packed milk market and 55 per cent of the entire ice cream market in Latvia. Its total turnover was around 17.95 million lats in 1996, which represents about 23 per cent of the total turnover of all milk processing companies in Latvia. New processed products are introduced at this plant every year. For instance, only two years ago, production of a new type of pasteurised, flavoured fluid milk in packages under the name "Lāse" started, using new and modern technology. Now this product dominates, accounting for about 30 per cent of all fluid milk in packages on the Latvian market. New Danish technology for the production of ice cream was also installed recently. The milk processing plant in Riga produces more than 55 varieties of dairy products and 30 varieties of ice cream. Approximately 15 per cent of its output was exported to Moscow, St. Petersburg, Kaliningrad, as well as to Estonia and Lithuania.

The canned milk factory in RĶzekne occupies a particular place on the Latvian market, since it is the only enterprise that produces canned milk. In 1996, it achieved a turnover of 9.01 million lats (11.5 per cent of the Latvian total). On the Baltic market, this enterprise competes only with the Lithuanian Mariampoles milk processing plant, whose capacities are three times higher. Both enterprises continue to target mainly the eastern market (Russia, Uzbekistan, Kazakhstan).

The joint stock company "Rīgas piensaimnieks" maintains a very strict marketing policy. In 1995, the annual turnover of this company was 6.75 million lats; 1996 turnover has already exceeded 8.95 million while it reached more than 11 million lats in 1997. The main products this company offers on the Latvian market are several types of soft cheese, curd and cottage cheese, desserts and Greek yoghurt (kefir).

Milling industry

Altogether approximately 2/3 of the storing capacities were located on collective farms. These capacities and corresponding technological equipment became the basis for establishing the regional grain processing and storing enterprises which are now mostly co-operatives. Thus, independent grain production, storing, processing and trade organisations now form the Latvian grain market. Among them, 17 milling enterprises currently exist in Latvia, the biggest of them are “Rīgas dzirnavnieks”, “Daugavpils dzirnavnieks”, “Rezeknes dzirnavnieks” and “Dobeles dzirnavnieks” which control the Latvian market.

The concentration ratio for the ten largest milling enterprises in Latvia shows that they gained market shares in the period 1994 to 1996 and dominated the market in 1996. Only 1 per cent of the market was left for the remaining 7 enterprises (see Table 5.5.). The concentration ratio of the four largest milling enterprises has remained rather stable with a market share of 60 per cent.

Both the dairy and the milling industries reveal growing concentration. This is due to strong competition on the domestic market, which has created a situation where processors are obliged to be more powerful in order to survive. Only the bigger companies are able to acquire the necessary capital for modernising technologies, inventing new products as well as implementing marketing strategies to conquer new markets in Latvia and abroad. At the same time enterprises have started to specialise, targeting a definite segment of the consumer market with their production activities. The milk processing sector has specialised in either whole milk or products such as cheese or ice cream.

Table 5.3: Market shares in % in the milling processing sector in Latvia measured by the Concentration Ratio, 1994 to 1996

Concentration ratio	1994	1995	1996
Combined market shares of 4 largest firms in milling industry	0.60	0.62	0.62
Combined market shares of 10 largest firms in milling industry	0.75	0.90	0.99

Source: Own calculations.

5.3 Vertical integration

With the introduction of the economic reforms, vertical co-ordination in the food marketing chain, until then organised by state planners, collapsed. This led to high levels of instability and insecurity for farmers, and also for primary food processing enterprises. Farmers now face the problem of how to market their produce in order to obtain good prices and avoid delayed payments. For food processors the main problem is the procurement of a sufficient amount of high quality raw materials at the right time. The bulk of Latvian farmers has been unable to provide such deliveries. To hedge against these risk factors, new forms of market-conform vertical integration have to be established. At present two forms of vertical integration between farmers and processors can be observed. One is to give farmers a share in the ownership of food enterprises. This form of vertical integration is mainly the result of a political decision as laid down in the privatisation laws for primary food processing enterprises (see 3.2). The other form of vertical integration, which is the result of a rational decision made by the individual economic agent who takes into consideration the specific economic factors and conditions valid in specific cases, are written contracts. These contracts not only contain clauses about the delivery of raw materials; often they also have agreements about support to the farmers, for instance in the form of loans. Loans and extension services are given to the farmers by the processors, to help them fulfil their obligations. The processing industry can thus help to improve the quality of raw materials and the promptness of delivery.

Farmers as shareholders in privatised processing firms are common, especially in the dairy sector. However there are two major problems for the development of farmer-owned dairies: one is the lack of capital of the owners, which makes it almost impossible to undertake efficiency-improving restructuring measures. The other problem is the lack of obligation for farmer-shareholders in a dairy firm to sell their milk. Each farmer can conclude a procurement agreement with a dairy company and sell milk to the enterprise that offers the highest procurement price. With this arrangement, the problem of getting constant deliveries of raw materials persists in farmer-owned dairy companies.

5.4 Marketing channels

The channels for the marketing of food products have become far more diversified than they were in the Soviet period. Food processing enterprises tend to sell their produce through retail outlets, direct deliveries to the consumer via local markets, their own retail network and to other processors. Moreover, some processors market their products abroad either through export companies or by exporting themselves.

On the domestic market, sales through the own retail network and through retail outlets are the most important marketing channels. Many processing enterprises have their own small retail network; at least one retail unit is situated either near the processing plant or even in the same building. In the retail sector itself many small private food retail enterprises have appeared since the beginning of transition. In 1996 there were 4236 food shops. This figure includes all shops with a minimum of 80 per cent of food in their total turnover.

As a result the concentration ratio in this sector is very low, although it increased slightly from 1995 to 1996. In 1996 the market share of the four largest retailers was only 11 per cent, and that of the 10 largest enterprises 17 per cent (Table 5.6).

Table 5.4: Distribution of market shares between the largest retailing enterprises in Latvia

Concentration indices	1995	1996
Combined market shares of the 4 largest firms in the food retailing industry	0.05	0.11
Combined market shares of the 10 largest firms in the food retailing industry	0.09	0.17

Source: Own calculations.

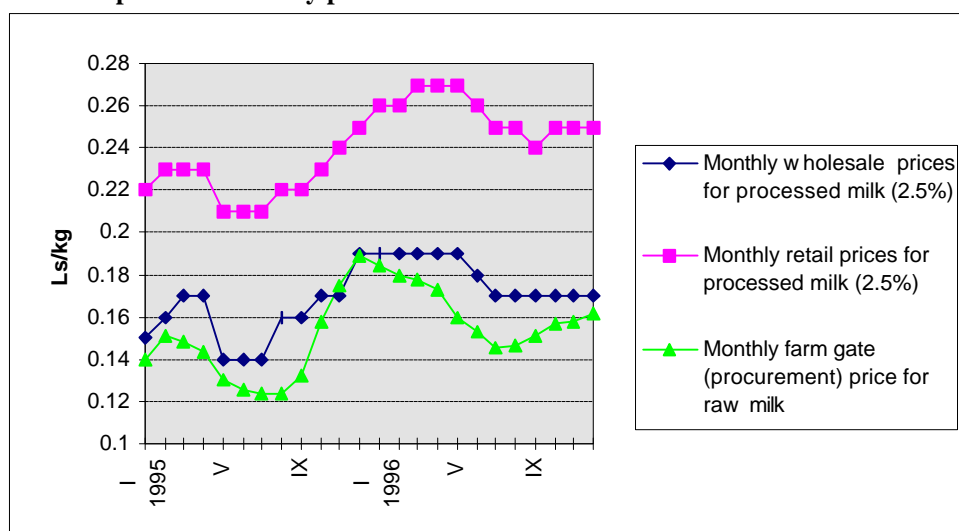
6 CONDUCT OF THE FOOD INDUSTRY

6.1 Price behaviour

The discussion about market structure in section 5.3 indicated that concentration has increased in the dairy and milling industries. Thus, market power might be a problem in the milk and grain processing sectors, at least at the regional level. Unfortunately conclusions cannot be drawn that easily from the market structure about the potential for market power. Even where there is a high degree of horizontal concentration, this does not necessarily imply that markets operate imperfectly. What matters for the degree of competition is the conduct of firms. Thus it seems worthwhile to take a closer look at the price behaviour of food processing firms, as will be done in the following section, where the dairy industry will be studied.

Figure 6.1 shows the development of milk prices at different levels of the food chain. The figure indicates that there is a large margin between wholesale and retail prices, while the margin between farm gate and wholesale prices is rather small. This could indicate that retailers are able to take advantage of their market power. At this point it should, however, be noted that the large difference between wholesale and retail prices could also be the result of high costs in the distribution of products, due to a lack of efficiency in this part of the food chain. This seems more likely, given the high number of retailers as discussed in section 5.4.

Figure 6.1: Development of monthly prices for milk



Source: CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (several years): Monthly bulletin of Latvian Statistics 1997 October, p. 68; 1996 October p. 72; information of LVAEI calculated on the base of unpublished data of Latvian Statistic Bureau.

The low margins between farm gate and wholesale prices, however, are an indication that farmers and processors have no influence over prices. Thus a profit-maximising producer in the dairy industry will adjust

his production so that marginal costs of production equal marginal benefits. In the Latvian dairy industry variable production costs have risen significantly since the beginning of transition. This increase can be attributed mainly to an increase in the costs for raw materials, energy, wages, and interest rates. Since producers were at the same time confronted with a decline in demand, it was not possible to compensate this rise in variable costs fully by an increase in output prices, and consequently dairy processors have had to cut production.

As regards the grain processing industry, the level of world market prices plays a major role for the internal grain market in Latvia. Grain imports, especially for human consumption, still dominate the Latvian grain market, leading to price alignment between domestic and world market levels. Thus, grain processors have no influence over market prices either, and thus have to adjust their production according to the prices given. In general this can be assumed for most food processing industries. Where there is no competition from domestic firms, international competitors will ensure the functioning of the market. This holds, especially with an increasing trend towards liberalisation; the Baltic Free Trade Agreement, for instance, has meant that producers from Lithuania and Estonia can freely enter the Latvian market.

6.2 Foreign Direct Investment

Foreign Direct Investment can help to accelerate industrial restructuring and favour the implementation of new technologies, new management and new organisational techniques. Since the transition to a market economy, Latvia has experienced a growing inflow of foreign capital. Much of the foreign capital went into the food industry (Table 6.1).

The volume of FDI in the food industry in 1996 was 30.7 million LVL (~55 million US\$), accounting for 8.2 per cent of total FDI. However, most investments have gone to enterprises that do not use agricultural raw materials, for instance in the tobacco, beverages and confectionery industries. The low attractiveness of primary food processing firms can probably be attributed to their ownership structures. Since a high volume of shares has been given to agricultural producers on preferential terms, outside foreign investors have been crowded out, who could otherwise have injected much of the needed investment capital for improving the efficiency of the sector.

Table 6.1: Foreign investments by kind of activity (in % unless otherwise stated)

	1992	1993	1994	1995	1996
Total (in 000)	22497.3	50295.1	173298.2	274175	371528.5
of which					
- Agriculture	0.1	1.8	0.0	0.0	0.1
- Forestry	0.0	1.1	0.1	0.1	0.1
- Food and beverages industry	3.2	4.3	11.3	10.1	8.2
- other industries	12.9	13.6	11.3	8.0	7.5

Source: LATVIAN STATISTIC BUREAU (ed.) (several years): Investments in Latvia no. 2/1997.

Most FDI in the Latvian food processing industry originates from Scandinavian countries and Austria, and also from the USA. The importance of other EU countries is significantly lower (Table 6.2).

Table 6.2: Structure of foreign direct investments in the food industry by country (%)

	1993	1994	1995
EU-12	18.5	13.2	12.5
EU-3*	53.2	12.3	25.2
USA	9.3	71.7	60.2
CIS	5.5	0.4	0.5
CEEC	10.8	0.2	0.1
others	2.7	2.2	1.5
Total (000 LVL)	2171	19513	27804

Note: * Sweden, Finland, Austria.

Source: LATVIAN STATISTIC BUREAU (ed.) (several years): Investments in Latvia no. 2/1997.

The growth in foreign direct investment (FDI) in the economy as a whole and in the food sector in particular can mainly be attributed to the acceleration of the privatisation process and the liberalisation of the privatisation certificates market, the removal of remaining restrictions from the Law on Foreign Investments,

and the liberalisation of the land market. Further positive impacts on the attraction of FDI result from an educated labour force with relatively low wage rates, as well as relatively low costs for some input materials. In addition, the Latvian government has undertaken further steps to improve the investment climate in the country. The bilateral investment treaty between the United States and Latvia on the subject of FDI is of major importance in this respect. It helps to reduce uncertainties as well as business costs by indicating the country's commitment to a predictable code of business behaviour.

7 CONCLUSION

The central objective of this study was to identify the most important obstacles to the development of an internationally competitive food processing sector in Latvia. Firstly, the macroeconomic situation, as well as the basic demand and supply conditions that shape the economic environment for food producers in Latvia, were studied. It has been shown that the macroeconomic environment has put the food industry under severe pressure. Macroeconomic fluctuation has introduced uncertainties that reduce the efficiency of the market mechanism. Most notable in Latvia were the high rates of inflation, especially during the first years of economic transition. Later, however, they were brought down, from 959 per cent in 1992 to 24 per cent in 1995, as a result of a stricter monetary and fiscal policies.

During the first years of economic transition, real purchasing power of consumers deteriorated quite rapidly. Consequently, household budget shares spent on food almost doubled between 1990 and 1996, with low income households spending between 65 and 75 per cent of their income on food products. The consumption pattern also changed. Whereas consumption for potatoes increased by 50 per cent within one year alone, meat, milk and dairy consumption declined by approximately 35 per cent over the course of the first six years of economic transition. For bread and cereal products, however, the changes in consumption were only slight.

Further adjustment pressures for the food industry originated from the sharp drop in agricultural production, which reduced raw material availability for the processing sector. This has been a major reason for the low capacity utilisation in this sector. The shortfalls in raw material supply were intensified by the fact that the share of procurement in reduced agricultural production also fell.

A precondition for the proper functioning of a market economy is the existence of a sufficiently large number of independently operating, and therefore competing, private firms. State-owned firms typically do not compete, but follow directions from a governmental authority. But privatisation also requires the introduction of a horizontally dispersed market structure that stimulates competitive rather than monopolistic or monopsonistic behaviour. Today, all formerly state-owned food processing enterprises have been privatised, and the government ownership share is less than 10 per cent. Consequently, an essential precondition for the emergence of a competitive market has been met.

The empirical examination of the market structures in some selected subsectors of the food industry shows that, for a small country like Latvia, there are a relatively large number of meat, dairy, and mill processing firms (140, 73, and 17 respectively). At the same time, however, the degree of horizontal concentration, as measured by the CR4 of procurement quantities, and therefore the potential to exercise monopsonistic market power, was around 50 per cent in the milk processing sector and around 65 per cent in the milling sector in the period 1994 - 1996 (see Tables 5.2 and 5.3). Thus it cannot be ruled out that such market concentration can give rise to static inefficiencies (i.e. dead weight loss of monopoly). Nevertheless, it has to be acknowledged that, in a transition economy like Latvia, this concentration process reflects the inevitable adjustment of an inefficient industry structure to the changed institutional and macroeconomic environment, as well as to new basic conditions. The elimination of loss-making enterprises that are too small thus contributes to the creation of a more efficient industry structure. The discussion of the conduct of the food industry, especially the price behaviour of food processing firms (see section 6.1) supports the view that market power is not prevalent in the core sectors of the Latvian food industry.

Privatisation not only determines the horizontal but also the vertical structure of an industry. In section 3.2 it was mentioned that agricultural producers could buy 30 to 70 per cent of the shares in a processing firm. The aim of giving preferential treatment to agricultural producers was, firstly, to dilute monopsonistic power in the downstream sector and secondly, to guarantee processors the supply with agricultural raw materials. The result of these efforts was shown in Table 5.1. Whereas agricultural producers have only a small share in the ownership of meat processing plants (less than 30 per cent), they completely own small local dairies and nearly half of the grain processing plants. In the meat industry, however, a higher degree of vertical integration has occurred through the establishment of small processing facilities by agricultural producers.

Although ownership of a processing firm by agricultural producers can be an effective measure to countervail potentially monopsonistic local market power, it may also result in a highly dispersed ownership structure for individual processing firms, thus making decision-making far more cumbersome. Examples for this were mentioned in section 3.2. Another problem arising from farmer-ownership of a processing firm is that farmers

typically lack the capital to restructure and modernise that firm. In addition, they crowd out other investors, including foreign investors, who could inject much of the needed investment capital.

This phenomenon can be observed in Latvia. Most foreign direct investments in the food industry have gone into secondary rather than primary processing branches where farmers own a high volume of shares. As a result, the economic performance of the subsectors considered here continues to be quite poor. Major problems are still low capacity utilisation rates, outdated and worn out equipment, and slow renovation caused by the lack of investment. Consequently most processing firms in these branches lack competitiveness on internal and external markets, which again contributes to their weak financial situation.

REFERENCES

- CENTRAL STATISTIC BUREAU OF LATVIA (1997, October): Monthly bulletin of Latvian Statistic, Riga.
- CENTRAL STATISTIC BUREAU OF LATVIA (1996, October): Monthly bulletin of Latvian Statistic, Riga.
- CENTRAL STATISTIC BUREAU OF LATVIA (1995): Household budget in 1994, Riga.
- CENTRAL STATISTIC BUREAU OF LATVIA (1996): Household budget in 1st half of 1995, Riga.
- CENTRAL STATISTIC BUREAU OF LATVIA (1997): Household budget in 1996, Riga.
- CENTRAL STATISTIC BUREAU OF LATVIA (1996): The main indicators of Latvian industry in January - June 1995, Riga.
- CENTRAL STATISTIC BUREAU OF LATVIA (1997): The main indicators of Latvian industry in 1996, Riga.
- CENTRAL STATISTIC BUREAU OF LATVIA (1997): The main indicators of Latvian industry in 2nd quarter of 1997, Riga.
- CENTRAL STATISTIC BUREAU OF LATVIA (1996): National Accounts of Latvia 1995, Riga.
- CENTRAL STATISTIC BUREAU OF LATVIA (1997): Report about results of household budget research in 1996, Riga.
- CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (1996): Statistical Yearbook of Latvia 1995, Riga.
- CENTRAL STATISTIC BUREAU OF LATVIA (ed.) (1997): Statistical Yearbook of Latvia 1996, Riga.
- LATVIAN MINISTRY OF FINANCES OF THE REPUBLIC OF LATVIA (1997): Economic survey 1996 Latvia, Riga.
- LATVIAN MINISTRY OF FINANCES OF THE REPUBLIC OF LATVIA (1997): Report on the Proposed 1998 Central government budget for the Republic of Latvia, Riga.
- LATVIAN STATE INSTITUTE OF AGRARIAN ECONOMICS (1997, 1st quarter): Description of market situation and prices` development, Riga.

ANNEX

Input statistical data for the project

	1994	1995	1996
General data			
Inflation rate (CPI)	136	125	117.6
GDP (in constant prices) at average prices of 1993, thsd. Ls	1476523	1453235	
GDP (in constant prices) at average prices of 1995, thsd. Ls		2349223	2414858
GDP (in current prices), thsd. Ls	2042555	2349223	2768372
GDP in current prices (added value) of the food sector only	150161	170444	203847
Interest Rate for short-term loan (one year)	52	34.7	24.7
Consumption			
Consumers' expenditure share for food and beverages, %	42.5	40.6 ⁸	52.2
Per capita consumption (quantities) of milk and dairy products, kg	344	163.5 ¹	311.28
Per capita consumption (quantities) of meat products, kg	51	26.33 ¹	57.36
Per capita consumption (quantities) of bread and bakery products, kg	89	44.47 ¹	86.28
Per capita consumption (quantities) of sugar, kg	23	11.72 ¹	32.88
Per capita retail food expenditures all food products	184.77	114.06 ¹	294.12
Per capita retail food expenditures for milk and dairy products	27.93	15.86 ¹	49.44
Per capita retail food expenditures for meat products	48.83	26.33 ¹	68.76
Per capita retail food expenditures for bread and bakery products	33.27	17.87 ¹	47.04
Per capita retail food expenditures for sugar	17.59	8.68 ¹	8.88
Employment (thsd.population)			
Employees total economy	1204.6	1189	973
Employees agriculture	209	201	3
Employees in food processing industry	N.A.	34.5	36.7
Employees in milk processing industry	N.A.	6.3	6.3
Employees in meat processing industry	N.A.	4.7	4.9
Employees in milling industry	N.A.	N.A.	1.142
Employees in sugar beets processing industry	N.A.	N.A.	1.2
Foreign Trade			
Import (value) of milk and dairy products, Ls	1009	1854	1424.5
Export (value) of milk and dairy products, Ls	6789	8576	14572
Import (value) of grains, Ls	3214	4249	23881
Export (value) of grains, Ls	1716	634.7	8.4
Import (value) of flour, Ls	1479	9.5	134.4
Export (value) of flour, Ls	19.7	0	7.9
Import (quantities) of milk and dairy products, tons	2881	2754	1850.5
Export (quantities) of milk and dairy products, tons	24350	21964	37002
Import (quantities) of grains, tons	48776	54353.2	234438.4
Export (quantities) of grains, tons	67611.7	24424.3	22.7
Import (quantities) of flour, tons	12102.6	27.6	657.4
Export (quantities) of flour, tons	133.3	0	32.7

⁸ Data for the first half of the year 1995.

Market Structure			
Number of farms and agricultural production firms (at the end of year)	308451	200909	268755
Average milk output per year per farm, tons*	15.4	12.7	9.7
Average number of pigs produced per year per farm*	10.2	9.7	4.8
Average number of cows produced per year per farm*	4.4	2.7	1.2
Average sugar beet output per year per farm*	3.5	3.3	2.7
Average wheat output per year per farm, tons*	3.1	3.3	3.7
Number of food processing firms	N.A.	N.A.	929
Number of dairy processing firms	N.A.	N.A.	73
Number of sugar beet processing firms	N.A.	N.A.	3
Number of milling firms	N.A.	N.A.	17
Number of meat processing firms	N.A.	N.A.	140
Number of retailing firms	N.A.	N.A.	351
Number of newly founded firms in the dairy processing industry	N.A.	N.A.	4
Number of newly founded firms in the milling industry	N.A.	N.A.	0
Number of private firms in the dairy processing industry			73
Number of private firms in the milling industry			17
Number of bankrupt and closed firms in the dairy processing industry	N.A.	N.A.	8
Number of bankrupt and closed firms in the milling industry	N.A.	N.A.	0
Concentration indices based on the procurement quantities of individual processing firms			
CR4 (combined market share of the four largest dairy processing firms)	0.57	0.45	0.52
CR10 (combined market share of the ten largest dairy processing firms)	0.92	0.75	0.77
Herfindahl-Index (sum of squared market shares) in the milling industry			
CR4 (combined market share of the four largest dairy processing firms)	-	0.63	0.67
CR10 (combined market share of the ten largest dairy processing firms)	-	0.91	0.99
Herfindahl-Index (sum of squared market shares) in the milling industry			
CR4 (combined market share of the four largest firms in the food retailing industry)	N.A.	0.05	0.11
CR10 (combined market share of the ten largest firms in the food retailing industry)	N.A.	0.09	0.17
Herfindahl-Index (sum of squared market shares) in the milling industry			
Vertical Integration			
Total quantity of raw milk domestically produced, thsd tons (incl.goat milk)	1001.1	947.7	922.7
Total quantity of sugar beets domestically produced, thsd. tons	228.2	250	257.8
Total quantity of cereals and pulses domestically produced, thsd. tons	900.6	693.7	968.6
Total quantity of wheat domestically produced, thsd. tons	199.4	243.7	357.5
Total number of pigs domestically produced, thsd	665.7	725.7	457.1
Total number of cattle domestically produced, thsd	288.4	199.2	110.0
Total procurement of raw milk (quantity) through registered processing or distribution channels, thsd tons	371.8	321.5	360.8
Total procurement of sugar beets (quantity) through registered processing or distribution channels	131.8	245.00	232.2
Total procurement of cereals (quantity) through registered processing or distribution channels	83.5	158.8	238.9
Total procurement of cereals (quantity) through registered processing or distribution channels	-	124.1	165.7
Performance			
Total profits (before taxes) of all firms of the dairy processing industry, thsd Ls	564513.9	575996.4	379029.6
Total profits (before taxes) of all firms of the milling industry, thsd Ls	68626.7	51720.7	138347.1
Existing overcapacities in the dairy industry (in %)	70 ⁹	60 ²	50 ²
Existing overcapacities in the meat processing industry (in %)	60 ²	65 ²	70 ²
Existing overcapacities in the milling industry (in %)	55 ²	40 ²	30 ²

Note: *Average output (or number of animals) in commercial farms.

Source: CENTRAL STATISTIC BUREAU OF LATVIA .

⁹ Estimations by experts.

**DISCUSSION PAPERS
DES INSTITUTS FÜR AGRARENTWICKLUNG
IN MITTEL- UND OSTEUROPA (IAMO)**

**DISCUSSION PAPERS
OF THE INSTITUTE OF AGRICULTURAL DEVELOPMENT
IN CENTRAL AND EASTERN EUROPE (IAMO)**

- No. 1 FROHBERG, K., HARTMANN, M. (1997):
Promoting CEA Agricultural Exports through Association Agreements with the EU - Why is it not working?
- No. 2 FROHBERG, K., HARTMANN, M. (1997):
Comparing Measures of Competitiveness: Examples for Agriculture in the Central European Associates
- No. 3 POGANIETZ, W.R., GLAUCH, L. (1997):
Migration durch EU-Integration? Folgen für den ländlichen Raum
- No. 4 WEINGARTEN, P. (1997):
Agri-Environmental Policy in Germany - Soil and Water Conservation -
- No. 5 KOPSIDIS, M. (1997):
Marktintegration und landwirtschaftliche Entwicklung: Lehren aus der Wirtschaftsgeschichte und Entwicklungsökonomie für den russischen Getreidemarkt im Transformationsprozeß
- No. 6 PIENIADZ, A. (1997):
Der Transformationsprozeß in der polnischen Ernährungsindustrie von 1989 bis 1995
- No. 7 POGANIETZ, W.R. (1997):
Vermindern Transferzahlungen den Konflikt zwischen Gewinnern und Verlierern in einer sich transformierenden Volkswirtschaft?
- No. 8 EPSTEIN, D.B., SIEMER, J. (1998):
Difficulties in the Privatization and Reorganization of the Agricultural Enterprises in Russia
- No. 9 GIRGZDIENE, V., HARTMANN, M., KUODYS, A., RUDOLPH, D., VAIKUTIS, V.,
WANDEL, J. (1998):
Restructuring The Lithuanian Food Industry: Problems and Perspectives
- No. 10 JASJKO, D., HARTMANN, M., KOPSIDIS, M., MIGLAVS, A., WANDEL, J. (1998):
Restructuring The Latvian Food Industry: Problems and Perspectives

Die Discussion Papers sind erhältlich beim Institut für Agrarentwicklung in Mittel- und Osteuropa (IAMO).
The Discussion Papers can be ordered from the Institute of Agricultural Development in Central and Eastern Europe (IAMO).