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**CENTRE FOR CO-OPERATION WITH NON-MEMBERS
DIRECTORATE FOR FOOD, AGRICULTURE AND FISHERIES
COMMITTEE FOR AGRICULTURE**

**IMPEDIMENTS TO EFFICIENCY IN THE AGRO-FOOD CHAIN IN BULGARIA,
ROMANIA, AND SLOVENIA**

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FOREWORD

This study on impediments to efficiency in the agro-food chain in Bulgaria, Romania, and Slovenia was undertaken by the Directorate for Food, Agriculture and Fisheries within the framework of the programme of the OECD's Centre for Co-operation with Non-Members.

The agro-food sector is an important part of the economy in Bulgaria, Romania, and Slovenia. Mostly as a heritage from the socialist period, there are still serious structural, institutional, and policy deficiencies in the agricultural production and food industries that act as impediments to the development of an efficient sector. Market distortions arising from trade restrictions and from price and mark-up controls, managerial and technological shortcomings at agricultural downstream enterprises, and poor market infrastructure lead to a misallocation of resources and inhibit the development of an internationally competitive agro-food industry.

The study provides a comprehensive coverage of impediments to efficiency along the agro-food chain, as well as detailed information on market structures, performance, and price relationships for three agro-food systems, notably the wheat to bread chain, the milk to dairy product chain, and the livestock to meat chain. The information is thereby presented in a format that is self-contained for all of the three countries, but allows for cross-country comparisons. The main impediments to efficiency in individual countries are highlighted, and policies to address the underlying problems are suggested.

The Agricultural Policy Paper is based on information derived from three country reports prepared by consultants at Wye College, Wye/Kent, United Kingdom. While reviewing and editing these consultant reports was undertaken as part of the collaborative process in the OECD, the principal editor and author of the paper was Peter Walkenhorst, Division for Agricultural Policies in Non-Member Economies, Directorate for Food, Agriculture and Fisheries.

ACKNOWLEDGEMENTS

This study draws on country specific information gathered and reported by teams of consultants, based at Wye College, Wye/Kent, United Kingdom. Reports on Bulgaria, Romania, and Slovenia were submitted to OECD. The study on impediments to efficiency in the agro-food chain in Bulgaria was prepared by Allan Buckwell, Sophia Davidova, and Matthew Gorton. The Romania report was researched and written by Allan Buckwell, Sophia Davidova, Dinu Deaconescu, Cristina Esanu, and Matthew Gorton, and the Slovenia study was prepared by Allan Buckwell, Sophia Davidova, Emil Erjavec, Matthew Gorton, Ales Kuhar, and Vesna Valent.

Drafts of the Agricultural Policy Paper were reviewed by several economists within the OECD's Directorate for Food, Agriculture, and Fisheries. In particular, comments made by Wayne Jones, Michael Ryan, and Alexandra Trzeciak-Duval helped to improve the study.

*Impediments to Efficiency in the Agro-food Chain
in Bulgaria, Romania, and Slovenia*

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Executive summary

This paper describes and examines impediments to efficiency in the agricultural downstream sector in Bulgaria, Romania, and Slovenia. Particular attention is thereby devoted to the wheat to bread, milk to dairy products, and livestock to meat chains. The analysis focuses on structural developments and pricing policies in the milling, dairy, and meat industries, although other aspects, such as collection and handling systems and food quality, are also touched upon.

Impediments to efficiency appear at all stages of the agro-food chain, even though the situation varies somewhat from one country to another. Markets lack transparency, transport and storage facilities are sometimes deficient, competition is imperfect, agro-processing technology is often obsolete, and policy interventions interfere with marketing and processing activities. Most of these impediments, which tend to be interrelated, can be directly linked to the distortions and shortcomings in the agro-food system under socialism. The improvement of agricultural marketing and processing efficiency requires a continuation of sector-specific policies to restructure agricultural downstream enterprises as well as a strengthening of economy-wide policies to ensure competition and compliance with existing legislation. Moreover, a stable, investor-friendly policy environment seems crucial for attracting foreign investment and the managerial and technological know-how that comes along with it. The interrelatedness of many impediments requires that policy makers consider the implications of policy measures for the whole agro-food sector and not limit their attention to individual stages of the agro-food chain.

Food industry privatisation in Bulgaria, Romania, and Slovenia has progressed more slowly than in most other CEECs. However, by the end of 1997, it was largely completed in Slovenia, and Bulgaria and Romania had launched renewed efforts to convert remaining state enterprises into private firms by the end of 1998. Meanwhile, the break-up of large agro-processing complexes, under-utilisation of capacities at large-scale state enterprises, and the emergence of new private companies on the market has led to reduction in market concentration ratios. The exception is Slovenia, where, because of the small size of the domestic market, industrial concentration remains high. The small number of firms in the different food industry branches in Slovenia highlights the need for a competition policy that closely monitors enterprise conduct and punishes monopolistic behaviour, and a trade policy that ensures that domestic firms are not isolated from competition with foreign producers.

During the period 1994-96, comprehensive price and mark-up controls were still present in the three countries investigated. The dominant position of public procurement agencies or supplementary payments only available for delivery to state funds induced farmers to stay in the controlled market, even though private marketing channels were available in parallel. Yet, the price ceilings hampered competition, led to costly attempts to avoid regulations sometimes involving illegal activities, and proved expensive in the case of the disbursement of supplementary payments. In 1997, price controls were scaled down in Slovenia and removed in Bulgaria and Romania, so that agro-food products could be more freely priced and better allocated. The remaining price and mark-up ceilings should be reviewed in light of their appropriateness to reach the intended social policy objectives.

One common feature in the three Balkan countries is the considerable importance of small-scale farming for agricultural production. Slovenian agriculture was never collectivised, and state farm restructuring and land restitution has led to the emergence of millions of small-scale farms in Bulgaria and Romania. This fragmentation of agricultural production generates substantial problems in the agro-food chain, since collecting and handling produce from a multitude of farmers are cumbersome and costly. Also, monitoring the quality of supplies and differentiating payment according to quality criteria are difficult. Policy makers might find it appropriate to foster the establishment of producer co-operatives or associations that could assume a beneficial role in quality control, in particular.

The food quality problems carry further through the supply chain. Few agro-processing firms in Bulgaria, Romania, and Slovenia are able to meet EU food quality standards. In particular, the many small-scale dairies and meat processors that compete on price in local markets, try to reduce costs by cutting back on hygiene expenditures and quality controls. Yet, preparations for EU membership, and increased exposure to competition from international markets as a result of trade liberalisation, should lead to the adoption of higher food quality and safety standards in the three countries over time. Public authorities could support this process by raising awareness of the importance of food quality issues, by improving the training of dairy and slaughterhouse managers, and by enforcing standards more rigorously.

1. Background

The agro-food sector in Central and Eastern European countries (CEECs) has undergone large-scale change since the beginning of transition. Price and trade regimes had to be liberalised, collective farms and state-owned enterprises needed to be privatised, and new administrative and market support institutions had to be created. Progress towards these tasks has varied across countries, depending on the initial situation of the agro-food sector, the timing of reform, and the attitude towards change. In consequence, the economic situation and the remaining impediments to efficiency differ between countries as well as sub-sectors and the policy response should prioritise accordingly.

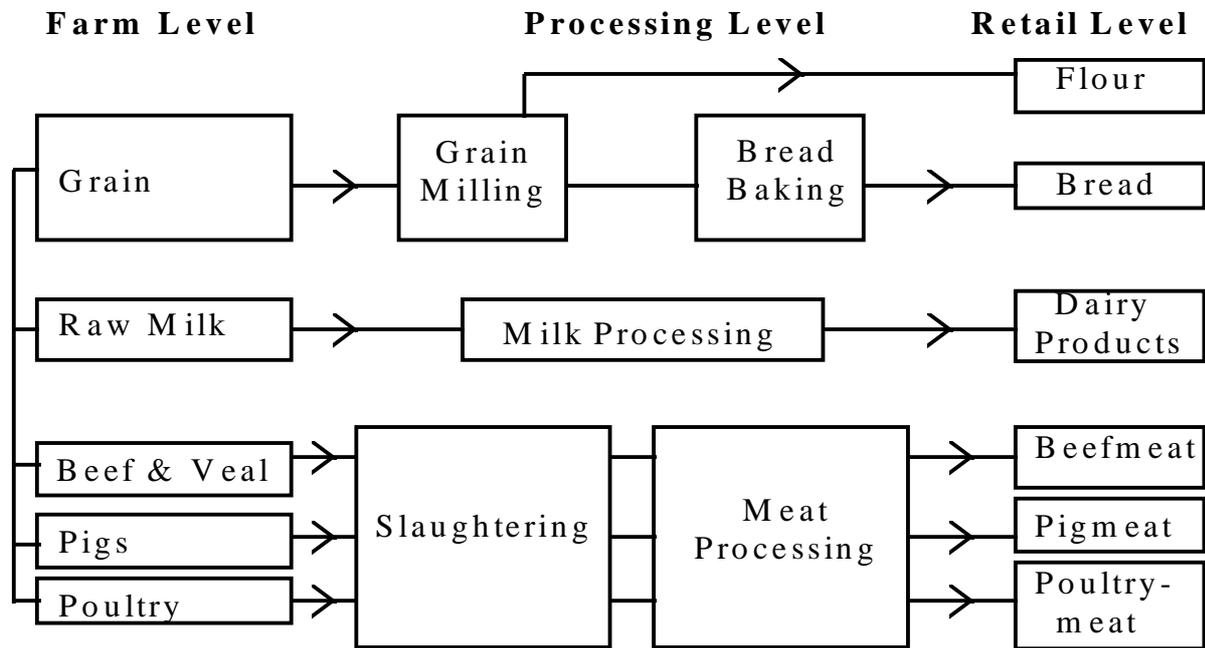
In general, reforms in the agricultural downstream sectors have been rather slow. Yet, improvements in the processing and distribution of agricultural products are crucial for the success of the agricultural transition. Agro-processing often acts as a bottleneck. Many agricultural products have to undergo some form of agro-industrial transformation before becoming consumable. Moreover, agricultural products tend to be bulky and perishable, so that they require substantial transport resources as well as careful handling. At any given retail price level, high marketing margins caused by inefficient treatment and processing result in low farmgate prices, thereby depressing the development of the agricultural sector.

Deficiencies in corporate control and management, market failures, and policy distortions still occur at many stages of the agro-food chain in transition countries. They result from lack of market transparency and market institutions, deficient transport infrastructure, inadequate storage facilities, managerial and technological shortcomings at processing enterprises, and policy interventions. These problems and deficiencies, which can generally be linked to shortcomings of the agro-food system under socialism, are often interrelated and mutually reinforcing. Alleviating or removing impediments to efficiency in the agro-food chain, and thereby reducing agricultural marketing and processing margins, would enable farmers to receive higher prices for their produce and/or consumers to buy food products at lower prices.

This paper discusses the main impediments to efficiency in the agro-food chain in three transition countries, namely Bulgaria, Romania, and Slovenia. These three countries share a number of characteristics, such as geographical location in south-eastern Europe, the political status of being non-OECD countries who have applied for EU membership, and the comparatively late start of the process of system transformation. In some other important aspects, however, the countries are quite different. Slovenia, for example, has a substantially higher per capita income, experienced a more stable macroeconomic development during transition, and has a much smaller agricultural sector than Bulgaria and Romania. Another crucial difference between the countries concerns the degree of agro-industrial integration during the socialist period, with Bulgaria having had more tightly organised agro-industrial complexes than Romania and Slovenia. Against this background of economic and institutional characteristics, the following analysis aims to highlight and compare recent developments and the economic situation in the food industries of the three countries.

The remainder of the paper is organised into an overview (chapter 2), and three country chapters, one each on Bulgaria (chapter 3), Romania (chapter 4), and Slovenia (chapter 5). The overview provides a short description of the food industry under socialism and of the main economic and agricultural developments during transition, as well as a general discussion of impediments to efficiency in the agro-food chain. The country chapters then contribute a more detailed analysis of three food chains, i.e. the wheat to bread, raw milk to dairy products, and livestock to meat chains. These handling and processing systems were chosen because of the importance of the corresponding food products for household expenditure in the three countries. Figure 1.1 provides an overview of the configuration of the agro-food chains studied.

Figure 1.1: Overview of agro-food chains studied



Source: OECD, based on Gorton *et al.* (1998a).

2. The food industry in central and eastern Europe during transition

In terms of income generation, employment, and land use, the agro-food sector is of substantial importance for the overall economy in the Balkan countries. This is particularly the case for Bulgaria and Romania, where agriculture accounts for almost one-fifth of GDP, roughly one-quarter of total employment, and more than one-half of total land use (Table 2.1). Moreover, households in Bulgaria and Romania on average spend a much larger share of their income on food products than consumers in most OECD countries.

Table 2.1: Economic importance of agriculture in the Balkan countries, 1997*

	Share of agriculture in gross domestic product	Share of agriculture in total employment	Share of agricultural land in total land	Share of household expenditure on food
Bulgaria	18.8	24.2	55.0	54.3
Romania	18.5	39.7**	62.0	58.6
Slovenia	4.4	6.2	43.0	22.5

*) or latest available. **) includes employment in the food industry.

Source: OECD Secretariat.

With such a large share of productive resources engaged in agriculture and income spent on food products, the transition of agriculture and its associated downstream sector is crucial for the overall economic transformation in the Balkan countries. Policy makers in Bulgaria, Romania, and Slovenia initiated reforms during the early 1990s to liberalise markets, establish private property rights, and build market institutions, but the reforms have not been completed yet, and there still exist many impediments to efficiency in the agro-food chain. Most of these impediments can be directly linked to the distortions and shortcomings in the agro-food system under socialism.

2.1 The food industry under socialism

During the socialist period, the food industry in central and eastern Europe exhibited the typical features of a centrally planned economy, though with notable differences in style between countries.¹ Almost all transactions along the marketing chain were directed and controlled by state authorities. Trading and storage were mainly handled by state monopolies, and most processing was carried out at large-scale, state-owned facilities. Prices at each stage of the marketing chain were set by central planners and were in general only loosely related to costs. Incentives to adopt efficient production and distribution methods were weak. In consequence, labour and capital productivity was low.

Two of the central objectives of the socialist economic policy were self-sufficiency in agro-food products, and low retail prices for essential consumer goods. The reconciliation of these conflicting objectives, i.e. providing sufficient production incentives for agricultural producers while keeping consumer prices for food products low, required comprehensive price and margin controls in combination with governmental subsidies to the various entities involved in agro-food production in order to compensate the latter for losses made at the state administered input and output prices. As a result and in contrast, for example, to agro-food policies in the European Union, regulation and subsidisation in eastern Europe were not primarily directed towards the agricultural production sector, but extended throughout the entire agro-food

¹ A more comprehensive discussion of the agro-food sector in eastern Europe under socialism can, for example, be found in Wädekin (1982), OECD (1991), and Braverman *et al.* (1993).

chain. The drain on public resources was considerable and in the end contributed to the downfall of the system.²

The agriculture and food sectors in central and eastern European countries were much more integrated than in western countries. The large size of collective farms thereby facilitated the process of combining agricultural raw material production and processing. It was, for example, not untypical for state or co-operative farms to have processing facilities on site, in which they could convert their produce into consumer ready food. For other agricultural products, the process of industrialisation had created large processing complexes that essentially held a regional monopoly on the transformation and marketing of the respective agricultural raw materials.

Outside the Soviet Union, concentration and vertical integration in the food industry was most rigorously pursued in Bulgaria. After agricultural collectivisation during the 1950s and farm consolidation during the early 1960s, the industrialisation of the agro-food sector started in 1970. The objective of this process was to introduce industrial mass production and scientific management methods to the agro-food sector. Industrialisation involved the construction of large-scale agro-processing facilities, predominantly located in the north-west of the country, as well as the merging of several collective farms with upstream and downstream enterprises into agro-industrial complexes. In some cases, scientific research institutions were also integrated with agricultural production and processing activities. However, the resulting production entities suffered from severe management and co-ordination problems, and generally failed to reach their performance targets.

In Romania, the vertical integration and concentration of agro-food production and processing did not go as far as in Bulgaria, and rural markets for farm produce and household based processing activities were tolerated to a larger extent. Yet at the state-controlled agro-industry level, substantial operational problems persisted. Reliable quantitative evidence on agro-industrial performance during the socialist period is scarce, but a study of 217 Romanian plants in the meat, dairy, fruit and vegetable, edible oil, and animal feed sub-sectors, undertaken by western consultants in the late 1970s, found decaying buildings, poor hygiene, high spoilage rates, outdated technology, and low product quality (Gilberg, 1980: p. 142).

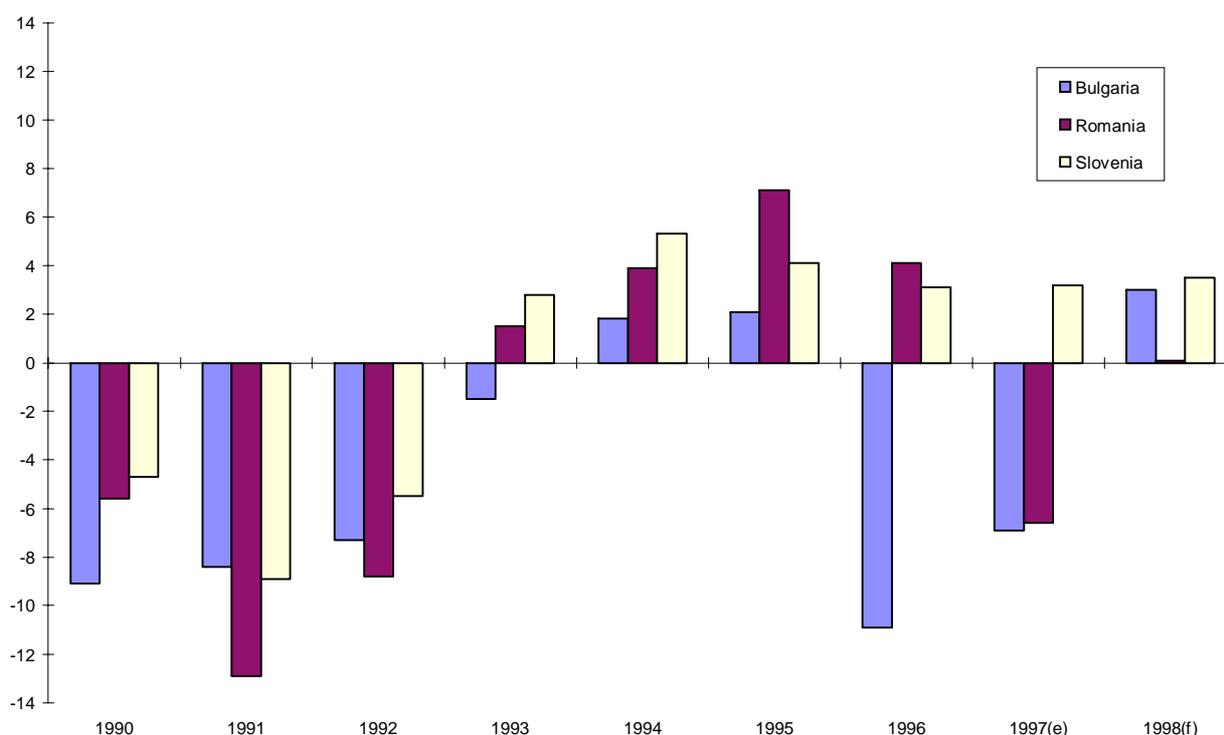
The situation of the food industry in Slovenia and former Yugoslavia in general was somewhat different from that in other eastern European countries, since the economic system, based on worker self-management and social instead of state ownership, allowed for more decentralised decision-making than Soviet-style socialism. Nevertheless, over time enterprises suffered from the same type of economic problems as other socialist economies, like poor financial control, nepotism, and lack of innovation. The considerable influence of workers on enterprise decisions, for example, led to wage increases irrespective of labour productivity, while the rationalisation of work processes and the modernisation of production facilities were neglected. Loss-making enterprises survived by building up payment arrears to suppliers or by accumulating loans from banks. Investment and plant location decisions were often highly political, and many agro-processing facilities were used as mere vehicles to provide employment in rural areas. To satisfy this function, they did not necessarily need to be of an efficient operational scale, so that a rather small-scale, fragmented agro-processing sector developed.

² Subsidies to the agro-food sector in the late 1980s have been estimated to have amounted to about 10 percent of GDP in Poland (World Bank, 1990: p. 32) and to about 12 percent of GDP in the USSR (World Bank, 1992: p. 138).

2.2 Economic and agricultural environment during the 1990s

The economic transition in most of central and eastern Europe has followed an imaginary “J-curve”, with an initial contraction of output, and a subsequent economic recovery. This pattern corresponds well with developments in Slovenia, where GDP dropped for several years at the beginning of transition, but has grown from 1993 onwards (Figure 2.1). In Bulgaria and Romania, the economies also started to grow again in the mid-1990s, but fell back into recession in 1996 and 1997, respectively. The renewed slump was the result of partial and incomplete economic liberalisation during the early stages of transition that left large parts of the economies under state control and stifled private initiative through extensive regulation.

Figure 2.1: Annual change in gross domestic product, 1990-98
(per cent)



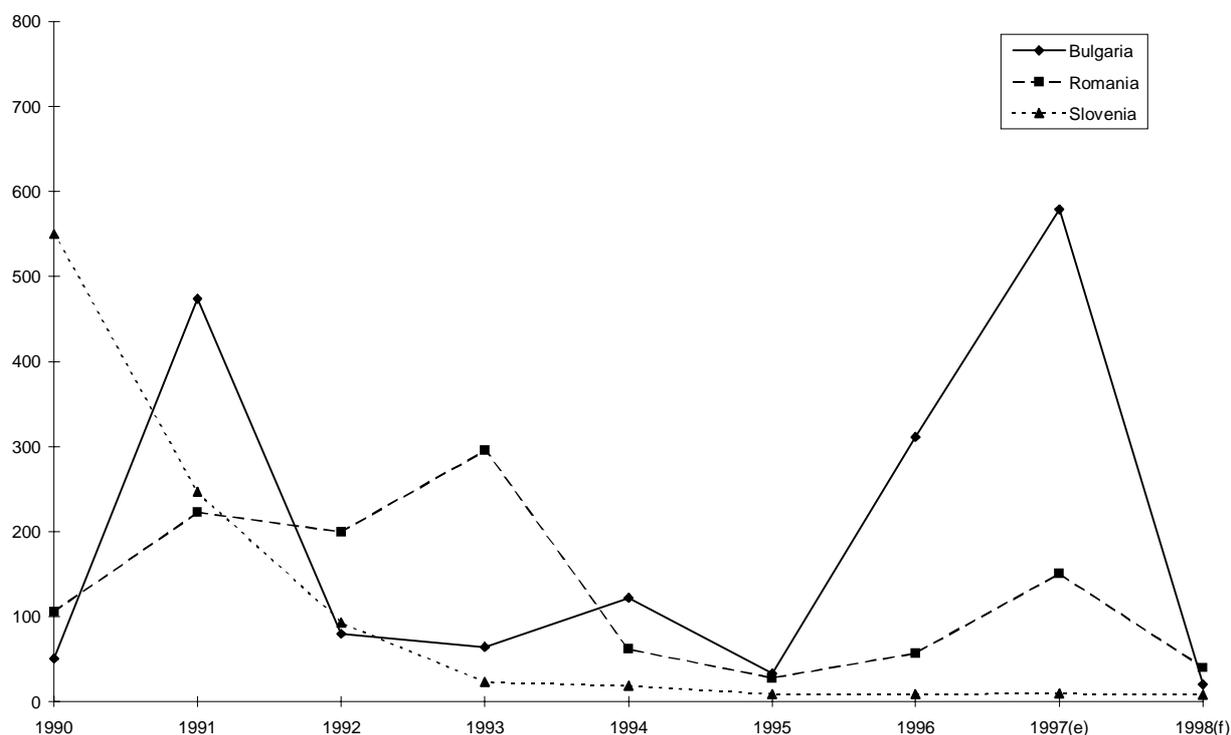
e: estimate, f: forecast.

Source: OECD (1998).

The highly regulated economies of Bulgaria and Romania were not able to supply the domestic market with sufficient quantities of goods and services, so that shortages prevailed and prices on the black market shot up. In early 1997, large-scale policy reform efforts were launched in Bulgaria and Romania to address the structural deficiencies and to combat the re-emergence of very high inflation rates (Figure 2.2). The Bulgarian government, for example, initiated a comprehensive macroeconomic stabilisation programme with assistance from the World Bank and the International Monetary Fund. The centrepiece of the programme consisted of the creation of a currency board, which pegged the Bulgarian Leva to the Deutschemark. Moreover, structural reforms called for an acceleration of the privatisation process, banking and enterprise reform, and price and trade liberalisation. The removal of price controls initially contributed to a further increase in inflation during 1997, but in 1998 the macroeconomic situation started to stabilise.

After earlier initiatives to privatise state-owned companies had had rather limited success, both Bulgaria and Romania launched ambitious privatisation programmes at the beginning of 1997, but fell short once again of reaching their policy targets. In Bulgaria, only 19 per cent of productive assets had been privatised by November 1997, while in Romania just half of the 2 700 companies slated for privatisation had actually been converted into private enterprises by the end of the year. In Slovenia, privatisation and restructuring efforts started relatively late also and are not as advanced as in the Czech Republic and Hungary, for example. But nevertheless, by the end of 1997, the vast majority of productive assets were in the hands of private owners.

Figure 2.2: Inflation rates, 1990-98
(per cent)



e: estimate, f: forecast.

Source: OECD (1998).

During the first years of transition, agricultural output declined substantially in almost all CEECs. Reasons for this development were the price-cost squeeze that farmers experienced, uncertainty over property rights to land and other farm assets, and adverse weather conditions.³ The fall in output was particularly pronounced for livestock products. But since 1993/94, output has been stabilising or increasing again in most CEECs as the adjustment to the market-oriented environment continued (Figure 2.3).

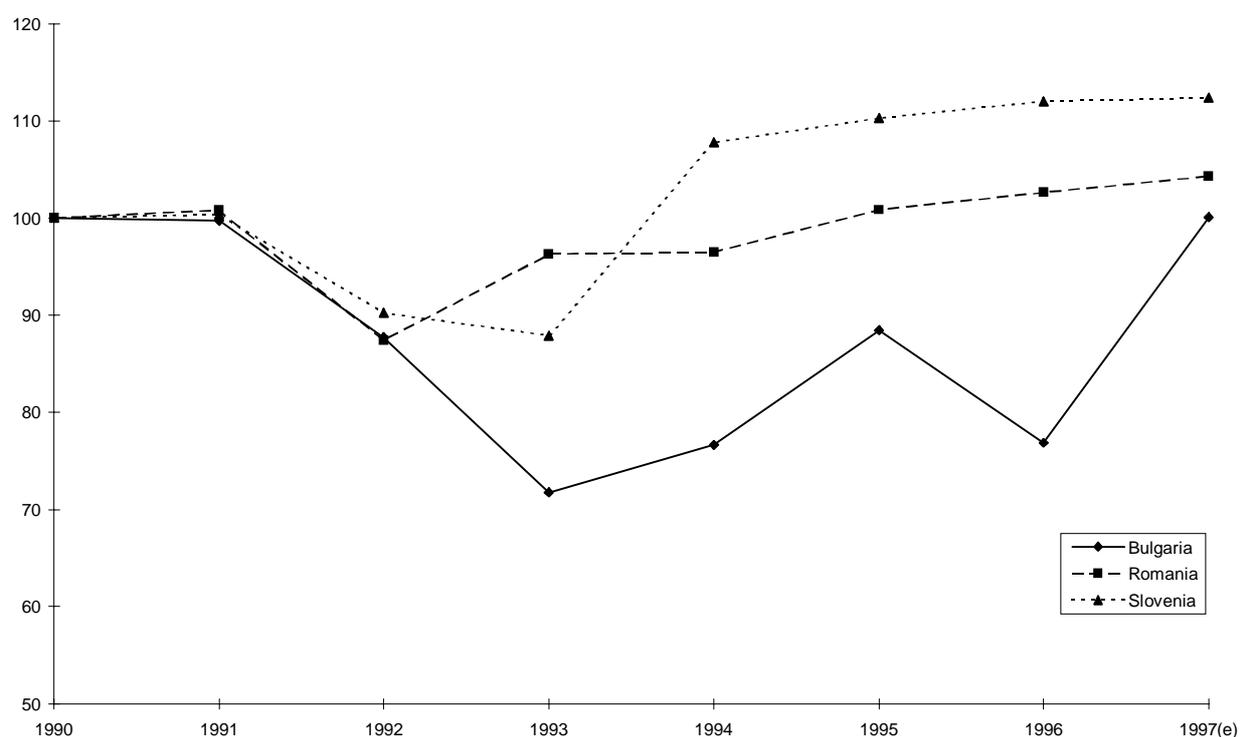
In part as a result of depressed levels of domestic production, the agro-food trade balance in the CEECs deteriorated in the early 1990s. The disruption on traditional export markets in the former Soviet Union and the strong import demand for branded food products from the West also contributed to the reduction of the traditional agro-food trade surplus of the CEECs. Indeed, Bulgaria and Hungary are the only

³ See Macours/Swinnen (1997) for a detailed analysis of the causes of agricultural output decline in CEECs.

countries in central and eastern Europe that maintained a positive trade balance in agro-food products during 1990-97.

All CEECs have launched programmes of land privatisation and farm restructuring. The process has, however, been slower and more difficult than initially expected. Nevertheless, the shift from collectivised to private agriculture has been almost completed, and supplementary changes in farm structures and management are under way. In the medium term, however, most CEECs are likely to maintain a mix of large corporate farms, new farming co-operatives, and private family farms.

Figure 2.3: Development of gross agricultural output, 1990-97
(1990 = 100)



e: estimate.

Source: OECD (1998).

Border protection for agricultural producers in CEECs is in general considerably lower than in the European Union, for example. The exception is Slovenia, where the government grants considerable support to farmers through high import tariffs.

Following price liberalisation, governmental involvement in agricultural markets declined markedly. Later, policy makers reintroduced market support policies and adjustment aid. Credit subsidies, for example, have been widely used to help farmers purchase production inputs and to promote investments.⁴ However, the rather persistent inefficiency of the agricultural downstream sector has rendered many policy efforts to improve the situation of agricultural producers unsuccessful.

⁴ For a discussion of agricultural policy formation during the early phase of transition, see Swinnen (1996).

2.3 *Impediments to efficiency in the agro-food chain*

Despite several years of institutional and policy reforms in the agro-food sector, the agro-food systems in central and eastern Europe still suffer from the rigidities and deficiencies of the socialist period. Impediments to efficiency arise at all stages of the agro-food chain. They concern deficiencies in corporate control, management, and technology, market imperfections, and policy distortions. The following overview touches on all of these aspects while focusing on those impediments that are particularly pertinent for Bulgaria, Romania, and Slovenia.⁵ Chapters 3 to 5 discuss and elaborate on individual agro-food chains in the three countries.

2.3.1 *Deficiencies in corporate control, management, and technology*

Since the onset of transition, privatisation programmes have been launched in almost all CEECs and even among the late and more hesitant reformers progress is under way. In Romania, for example, 184 out of 424 agro-processing firms had been privatised by the end of 1997, even though most of the larger enterprises still remain in the state sector. However, privatisation in itself does not guarantee the improvement of a company's competitive ability. Many enterprises in CEECs that have been transferred into private hands have indeed continued to operate in much the same way as under socialism, since the new owners often lacked information or interest to push for improvements in performance.

Privatisation methods and procedures have varied among countries. Yet, one common aspect of many programmes, namely the reservation of a large fraction of shares in the newly privatised agro-processors for farmers, workers, and managers, has inhibited subsequent attempts to restructure enterprises, to improve their efficiency, and to attract much needed foreign investment. Insider-shareholders have generally not been able to provide food producers with the financial capital to modernise processing lines. Also, resistance of agricultural producers to the closure of processing facilities located close to production activities has prohibited a consolidation of processing-plants in the face of aggregate over-capacities so far.

Under-utilisation of capacity at existing large-scale processing facilities has indeed emerged as a widespread problem in many CEECs, after agricultural production dropped markedly in the first years of transition. Many agro-processors have thereby found themselves unable to reduce their labour force to the same extent as output, so that over-staffing and increased per-unit labour costs act as impediments to marketing efficiency in most transition countries. Also, debts inherited from the socialist period still have to be serviced. These fixed costs now fall on a reduced output, so that the capital costs per unit of output have increased.

Many agro-processing enterprises in transition countries continue to operate with technology that is obsolete or in a poor state of repair. In some cases it has been possible to upgrade facilities by removing particular technological bottlenecks. Also, those firms that have formed joint ventures or have foreign shareholders have in general had better access to investment capital than enterprises without any participation of foreigners. Indeed, in some countries with substantial inflows of foreign direct investment, agro-industry has undergone considerable upgrading already, although not all sub-sectors have benefited to the same extent from modernisation investments (Box 2.1).

In parallel to existing large-scale processing enterprises, a rather vibrant sector of small agro-processors has emerged in many CEECs. In Bulgaria, for example, a multitude of small milk and meat processing firms have emerged to supply local markets with livestock products. Such small enterprises are not able to reap benefits from economies of scale and often supply products that are at the lower end of the market in terms of quality. However, over time some of the nascent firms might be able to grow into formidable competitors for the more established agro-processors.

⁵ For a more comprehensive country coverage, see chapter III.2, "Impediments to Efficiency in the Agro-Food Chain in Transition Economies", in OECD (1998).

Box 2.1: Foreign investment in the agro-food sector in transition economies

Foreign direct investment (FDI) not only provides much needed capital for the restructuring and modernisation of industries in transition countries, but it also brings managerial and technological skills to the region, which are also in short supply. During 1991-97, agro-food FDI accounted for a substantial share of total FDI in transition countries. In Bulgaria, for example, the agro-food sector attracted about 25 per cent of all foreign investments, which exceeded the share of any other sector in the economy.

The vast majority of FDI funds has been directed into the agro-processing industry, rather than into primary agriculture. This development is similar to the experience with agro-food FDI in OECD countries. Within agro-industry, most FDI has been directed into the sugar and confectionery, the tobacco, and the soft drinks sub-sectors (Box Table 2.1). Alcoholic beverages, and milk and dairy production also attracted substantial FDI. Meat processing, on the other hand, has received relatively little attention from foreign investors.

Box Table 2.1: Cumulative inflows of agro-food FDI in selected transition countries by sub-sector, 1990-97
(in million US\$)

	Milling & baking	Sugar & confectionery	Veg. oils & fats	Fruit & veg.	Milk & dairy	Meat & ready meals	Alcoholic beverages	Soft drinks	Tobacco	Other processed food	Total food processing	Per capita (US\$)
Albania ¹	-	-	-	-	4.0	-	-	10.0	-	-	14.0	4.0
Bulgaria ¹	46.8	18.6	6.8	27.7	12.3	-	37.0	40.9	0.9	-	191.0	22.7
Croatia	-	-	-	3.0	-	-	33.0	31.2	-	0.4	68.0	15.1
Czech Rep. ¹	49.0	23.0	32.0	-	3.0	4.0	157.0	237.0	420.0	72.0	997.0	96.8
Estonia	9.0	-	-	5.0	11.0	1.0	16.0	15.0	17.0	11.0	85.0	57.4
Hungary ¹	41.8	173.0	-	230.5	167.3	9.6	123.9	21.8	32.0	32.4	832.2	80.8
Lithuania	12.0	23.0	-	-	15.0	2.0	25.0	-	64.7	8.2	150.0	40.4
Poland	107.6	765.9	110.6	28.2	123.1	70.8	226.6	454.2	730.0	298.2	2 915.0	75.7
Romania ¹	-	42.4	-	-	-	-	166.0	31.0	-	0.5	239.9	10.6
Russia ¹	65.0	692.7	-	-	138.6	57.0	121.9	294.2	90.0	-	1 459.4	9.9
Ukraine ¹	-	42.5	91.5	4.4	50.0	50.0	6.8	116.0	-	-	361.2	7.1
Total	331.2	1 781.1	240.9	298.8	524.2	194.4	913.2	1 251.3	1 354.6	422.7	7 312.8	24.2

1. The information on the sub-sectoral breakdown of agro-food FDI is derived from a press survey, which might not be comprehensive.

Source: National Statistics; Agra Europe, East Europe Agriculture and Food, several issues.

When comparing FDI flows across countries, Poland, Russia, the Czech Republic, and Hungary attracted the highest amount of agro-food investments. On a per capita basis, the Czech Republic, Hungary and Poland stand out as the recipient countries with the highest level of agro-food FDI, while FDI inflows into the agro-food sectors in the large NIS countries, Russia and Ukraine, look less impressive when related to the size of their populations.

Analysis of the determinants of FDI decisions reveals, that expectations of future protection in those CEECs in line for EU membership, as well as low agricultural producer prices seem to have motivated some agro-industrial FDI, but the majority of foreign investments have apparently aimed to position the investors on CEEC and NIS markets so as to enable them to satisfy growing local demand for high value-added food products, such as for confectionery, ice-cream, and beverages. Acquiring local brand names as well as establishing Western brands in transition countries seem to have been additional considerations (see chapter III.3 in OECD (1998) for a more detailed discussions of foreign investor motivation).

The quality of food products in many transition countries generally falls short of western European standards. An example is Bulgaria, where the State veterinary service inspected 609 dairies during 1997, and forced 104 of these plants to close down because of poor hygiene. The inspectors also investigated 3 864 milk sales outlets, of which 1 306 were forced to stop operations as they lacked refrigerating equipment, thermometers to control milk temperature, and equipment to measure fat content. The European Union suspended imports of white cheese from Bulgaria as a result of these findings (Agra Europe, November 1997: p.29).

One of the most serious impediments to efficiency in the agro-food chain is the lack of managerial expertise, particularly in the area of marketing. Accustomed to operating in a shortage economy where producers could passively wait for customers, managers at agro-food companies are now forced to learn active sales skills. Marketing has become a favourite buzz-word in transition countries, but few managers of agro-processing companies have a credible marketing strategy, a profound knowledge of their competitors, or a clear idea of how to create brand images. When discussing markets, many managers still think of satisfying wholesalers rather than the demands of consumers. On the other hand, the emerging small-scale agro-processing sector testifies to the fact that entrepreneurial skills are developing in the region.

2.3.2 *Market imperfections and structural problems*

The efficient functioning of the market mechanism requires that market participants be able to rely on appropriate public infrastructure, be well informed about prices, and face sufficient competition. These requirements of a market economy are not always entirely met in transition countries, and policies should be devised to improve the framework for the economic system. Lack of investment in transport and storage systems, insufficient marketing infrastructure, and tolerance of anti-competitive behaviour will otherwise result in private economic agents receiving distorted price signals, so that the market will fail to deliver the socially optimal allocation of resources.

Weaknesses in the transport system can arise from lack of transport connections, poor state of repair of roads and railways, insufficient supply of transport vehicles, or high per-unit shipping costs. The current situation with respect to rural transport facilities in transition countries is diverse. In some CEECs, such as in Slovenia, the transport network does not represent an impediment to agricultural marketing efficiency at all, while in other countries low road density, poorly maintained roads and railways, and lack of transport vehicles are major problems. Throughout the region, a shift from rail to road transport of agro-food products can be observed in order to satisfy increasing demands for flexibility and timely delivery.

In general, transition countries do not face a shortage of basic transport vehicles, such as lorries, tractors, and tractor trailers. However, a considerable share of the vehicles is rather old or in poor state of repair. Moreover, specialised trailers to transport livestock or lorries with cooling facilities to ship meat, dairy products, or fruit and vegetables are often in short supply. Also, equipment to load or unload agricultural products, such as fork lift trucks or conveyor belts, is frequently lacking. This shortage becomes particularly constraining during peak harvest time.

Moreover, some countries like Bulgaria, Romania, and Slovenia have a large number of small-scale farmers. In these countries, farms with less than 5 hectares of land account for two-thirds or more of all farms. This share of small-scale farms is considerably higher than in most western European countries, although Greece, for example, also shows a rather fragmented farming sector (Table 2.2). As a result, costs for shipping and handling per unit of agricultural produce are high. Milk lorries, for example, have to stop and collect many times before reaching a full load that is then shipped to the dairy plant. Sugar

beet-processing plants have to co-ordinate delivery with thousands of beet-growers. However, in other transition countries rather large agricultural production units dominate the sector, so that farms tend to be in a rather good position to make use of economies of scale in transport and handling and to offer large quantities of homogenous produce to agro-processors.

Table 2.2: Farm size distribution in selected European countries, 1997*

	Share of farms < 5 ha		Share of farms 5-10 ha		Share of farms >10 ha	
	% of farms	% of land use	% of farms	% of land use	% of farms	% of land use
Bulgaria	99.0	29.9	0.8	3.4	0.2	66.7
Romania	91.6	54.5	8.1	19.7	0.3	25.8
Slovenia	65.7	31.2	24.8	34.3	9.5	34.5
Germany**	31.3	2.5	15.7	4.0	53.0	93.5
Greece**	75.3	32.3	14.9	23.6	9.8	44.1
United Kingdom**	14.4	0.5	12.4	1.4	73.2	98.1

*) Or latest available. **) Data does not include farms smaller than 1 hectare.

Source: European Commission (1997, 1998); Agra Europe (March 1998).

The situation with respect to storage facilities is similar to that regarding transport, in the sense that overall capacity is sufficient, but bottlenecks occur with respect to the availability of specialised equipment and the accessibility of facilities. There is a lack of on-farm storage units and of specialised units to accommodate fruit and vegetables, for example. Moreover, insufficient investment capital of the owners of storage facilities has prohibited an upgrading of the often aged and outdated facilities so far, even though some investment has been directed towards modernising existing or constructing new storage and handling capacity (Box 2.2).

Box 2.2: Upgrading handling facilities in transition countries: the new *Constanza* grain terminal

After extensive planning and various delays, a decision for the construction of a new grain terminal in the Romanian Black Sea port of Constanza was reached in early 1998. The new plant will have a storage capacity of more than 100 000 tonnes, and is likely to benefit from its location in the free trade zone of "Constanza South". Total investments are estimated to amount to 25-30 million US\$. A large share of the necessary funds were provided by the European Bank for Reconstruction and Development, which initially granted a loan of 13 million US\$ for the project, extended over eight years (Agra Europe, February 1998: p. 30).

The new terminal should greatly facilitate Romanian exports of grain, improve the connection between the domestic and the international grain market, and lower transactions costs. Previously, there existed only one sea export elevator in Romania, located also in Constanza, which was owned by a private trading company. Hence, the new facility should not only add to overall handling capacity, so that from the end of 1998 up to 3 million tonnes of grain a year could be exported from the Black Sea port, but it would also increase competition among facilities.

Furthermore, high per-unit storage costs due to high interest rates are a serious problem, particularly in those transition countries that recently experienced periods of high inflation. In some cases, the high costs of storing agricultural products even led to diversions of trade flows. In Bulgaria, for example, carrying

grain over time became so expensive that large quantities were exported immediately after the harvest and later re-imported on a month-to-month basis.⁶ Grain storage, thus, was carried out outside the country.

Also, in those transition countries that experienced a fragmentation of farm structures as a result of privatisation, the transaction costs of storage have increased in relative terms. In Romania, for example, the restitution of land to former owners has resulted in the creation of a dominating small-scale farming sector. These small-scale agricultural producers do not use public storage facilities to the same extent as former state farms did, since the handling charges are relatively higher for them than for farming enterprises that can supply large quantities of homogenous products to the operators of storage facilities.

The need to improve market transparency has been recognised by governments throughout central and eastern Europe. With technical and financial support from the World Bank, the EU, USAID, and other donors, projects to create and strengthen agricultural market information services have been launched in almost every country in transition. Regional market information is thereby generally collected on a weekly basis at the farm-gate, wholesale, and retail levels and disseminated through special sections in farm newspapers and journals, or through specialised reports, such as Bulgaria's *Agro-pari*. In some countries, agricultural price information is also broadcast by radio.

Despite the existing information services, non-transparent agro-food markets have remained an impediment to marketing efficiency in transition countries. In some cases, market information services seem primarily to supply the statistical databases of agricultural ministries and other state agencies rather than serve the information needs of private economic agents. The collected information does not get disseminated widely enough or is already outdated when it reaches farmers, traders, and agro-processors.

Also, other institutional means to facilitate price discovery and dissemination, such as wholesale markets, are only at an early stage of development. The concept of marketing fruit and vegetables or other agricultural products via centralised markets is a new one in transition countries. Producer organisations have to be set up as links between farmers and wholesale traders. These organisations are then charged with the co-ordination of the market's activities, such as registration of market participants, packaging, transport, and storage of products, and conduct of the auctions. The Romanian government, for example, initiated the establishment of seven fruit and vegetable markets in the Fall of 1997 with assistance from the European Bank for Reconstruction and Development (*Agra Europe*, October 1997: p. 30).

The development of producer co-operatives, farmers' organisations, and interprofessional organisations is at a similarly early stage as the establishment of wholesale markets. In countries with a rather fragmented farming structure, such as in Bulgaria, Romania, and Slovenia, co-operatives and farmers' organisations could play an important role as intermediaries between farmers and agro-processors by gathering and disseminating information on market prices and quantities traded. However, the idea of co-operation among producers is still largely discredited in transition countries, because of the experience of forced collectivisation in most CEECs. Also, interprofessional organisations which bring together farmers, traders, and agro-processors in order to exchange information, to establish business standards, and to co-ordinate professional activities are non-existent in most transition countries. The creation of such institutions is, however, under consideration in Romania.

The process of privatisation and restructuring has led to a de-monopolisation of the agro-food sector in most CEECs. Even in Bulgaria and Romania, where reforms started late and were rather hesitant, the four biggest firms in the grain-milling, dairy, and meat-processing industries no longer command a dominant

⁶ See Leach, M., M. Haley, D. Skully, M. Smith, R. Meekhof, N. Cochrane, and E. Young, *Bulgarian Grain Marketing and Management Reform*, USDA Agricultural and Trade Analysis Division, Washington, D.C., 1994.

position in the domestic market. Their joint market share is below 50 per cent (Table 2.3). In Slovenia, the four-firm concentration ratios are rather high, but this is to be expected for a relatively small country. The high market shares of only a few firms, however, highlight the particular importance of enforcing anti-monopoly provisions and pursuing liberal trade policies in order to ensure sufficient competition on the domestic market.

Table 2.3: Four-firm concentration ratios in selected European countries, 1996*

	Flour	Bread	Processed Meat
France	29.0	4.5	23.0
Germany	38.0	7.0	22.0
Italy	6.7	4.0	11.0
Bulgaria	47.6	6.9	15.1**
Romania	8.5	9.1	11.6
Slovenia	100.0	45.5	55.6

*) figures for western Europe relate to 1990; **) data for pork products only.

Note: Four-firm concentration ratios represent the combined revenue share of the four biggest firms in a sub-sector in total revenues in that sub-sector.

Source: Gorton *et al.* (1998c), OECD Secretariat.

With a relatively large number of agro-processors in most individual sub-sectors and a fragmented retail sector,⁷ country-wide competition at the retail end of the agro-food chain seems, in general, to be sufficiently intense. However, at the regional level, agro-processors still have some market power particularly *vis-à-vis* small-scale farmers and indeed seem sometimes to engage in anti-competitive behaviour. The dominant position of agro-processors on regional markets is reinforced by non-transparent agro-food markets and high costs for transport and storage of agricultural products (see above).

Barriers to entry for new competitors exist in some transition countries. Bulgaria, for example, operates a tax regime that grants reimbursement of VAT paid on inputs only to firms above a particular revenue threshold. Small, recently established enterprises that fall below the threshold are not able to claim VAT paid on inputs from the fiscal authorities and are, therefore, left at a disadvantage compared to large, established firms. Moreover, managers have often proven successful at lobbying for discriminatory regulations *vis-à-vis* outside investors in privatisation programmes in order to preserve dominant market positions for their companies. In some cases this has led to the transformation of former state monopolies into private monopolies.

2.3.3 Policy distortions

One aspect in the policy framework for the agro-food sector that obstructs the development of the agricultural downstream sector in countries like Slovenia is protectionist agricultural trade policy. High border tariffs lead to high domestic prices for agricultural produce and, hence, high raw material procurement costs for food companies. In some cases, the latter are compensated through trade protection for processed foods. Indeed, the effective rate of protection for many processed products in Slovenia is higher than for basic agricultural products, so that the food industry can realise excess profits on the domestic market. However, because of the protection from international competition, necessary structural and operational adjustments are postponed and internationally uncompetitive enterprises can survive.

⁷ In Bulgaria, for example, there were more than 30 000 retail firms offering bread, meat, and dairy products to consumers in 1995. The four-firm concentration ratio amounted to less than 0.5 per cent (Gorton *et al.*, 1998a). This low ratio stands in stark contrast to the high degree of concentration in many OECD countries.

Moreover, Slovenia uses an import quota system to allow food producers to supply foreign markets despite high domestic raw material costs. Food companies are allowed to import agricultural products tariff-free, if they export a corresponding quantity of the processed products. Also, the government budget has an allocation for export subsidies to help agro-processors that rely on domestically produced agricultural raw materials to sell their products abroad. But applying for import licences or export subsidies is cumbersome and places a heavy administrative burden on small food companies.

Rudiments of market intervention policies from the socialist period can still be found in some transition countries. Romania and Bulgaria started to remove their last price and mark-up controls only in February 1997 and July 1997, respectively. In Slovenia, state procurement systems and price controls remain in operation in the grain and milk markets. Overall, the extent of the regulations is less pervasive and distortive than under state socialism.

Instead of the direct influence of public policies on agro-food marketing, indirect policy effects, originating from the still fragile institutional and macroeconomic framework, have become more important as impediments to efficiency. Lack of enforcement of contracts, for example, is a problem in almost all transition countries. Late payments in conjunction with lack of fully developed civil and bankruptcy law and understaffed legal services turn the collection of payment claims into a risky and time-consuming venture. To avoid these risks and delays, agro-food producers often prefer to transact on a cash or barter basis rather than on credit terms. Also, traditional, trusted supply and delivery channels are often preferred to newly established intermediaries, even though the latter might offer better payment terms.

3. Structure and performance of agro-food chains in Bulgaria

In 1996, the food industry in Bulgaria accounted for about 21 per cent of industrial output, and about 17 per cent of total exports. Traditionally, Bulgaria supplied a substantial share of its food output to the Soviet Union and other CMEA countries. The collapse of these markets during the early 1990s led to a sharp drop in foreign demand for Bulgarian food products, which aggravated the slump on the domestic market. As a result, food industry output fell by about half between 1989 and 1996, leaving many agro-processors to utilise less than 40 per cent of their potential capacity.

The establishment of private property rights has been rather slow in Bulgaria. By the end of 1997, about two-thirds of all farmland had been restituted to former owners. But the creation of a proper cadaster has proven difficult, so that only 12 per cent of owners had received title deeds to their land. Privatisation in the food industry has similarly been subject to substantial delays. By the end of 1997, 172 out of 263 state food companies had been transferred into private ownership. The Bulgarian government entered into commitments with the World Bank and the IMF to have 85 per cent of food industry assets privatised by the end of 1998, but it remains to be seen whether this ambitious programme will be carried through.

Inflows of foreign investment in the agro-food sector increased continuously between 1993 and 1997, with the canning, brewing, grain processing, and confectionery industry attracting the bulk of funds (Table 3.1). Most investments thereby originated in OECD countries, with investors from neighbouring Greece being particularly active in Bulgaria. The overwhelming majority of FDI projects has been realised when state-owned companies were privatised.

Table 3.1: Major foreign investment project in the Bulgarian agro-food sector, 1993-97

Investor	Country of origin	Sub-sector	Investment (million US\$)	Year
Eaststarch	Netherlands	Grain processing	46.0	
Clarina Holding	Luxembourg	Beverages	40.9	1994-97
Brewinvest	Greece	Brewing	25.0	1995
Luxcraft	United Kingdom	Fruit & vegetables	19.1	1995-96
Kraft Foods	USA	Confectionery	12.1	1994, 96
Interbrew	Belgium	Brewing	10.3	1995-96
TKM	Greece	Fruit & vegetables	8.6	1996
Nestlé	Switzerland	Confectionery	6.6	1995
Danone	France	Dairy	5.8	1994, 96
Delta	Greece	Dairy	5.6	1993, 96-97
Helian	Netherlands	Vegetable oil	5.5	1997
Unibul	United Kingdom	Wine	1.6	1997
Nadodzanskie oil refineries	Poland	Vegetable oil	1.3	1997
Kremer	Germany	Grain processing	1.2	1997
Inter Assist	Switzerland	Grain processing	1.0	1996-97

Source: Bulgarian Foreign Investment Agency.

3.1 *The grain, flour, and bread chain*

Arable farming in Bulgaria is concentrated in the northern and eastern parts the country, with the most fertile land lying in the Danube's alluvial plain close to the Black Sea. In 1997, grain was sown on 2.1 million hectares, i.e. about 45 per cent of Bulgaria's arable area, with wheat, maize, and barley being the most important grain crops cultivated. Total grain production amounted to 6.2 million tonnes, which

was about a quarter less than production in 1990 (Table 3.2). Nevertheless, the grain harvest in 1997 was considerably better than that during the previous year, because of more favourable weather conditions and governmental support for farm input purchases.

Table 3.2: Grain production in Bulgaria, 1990-97

	('000 tonnes)							
	1990	1991	1992	1993	1994	1995	1996	1997(p)
Total grain production	8 216	9 072	6 644	5 717	6 462	6 572	3 581	6 218
<i>of which:</i>								
• Wheat production	5 292	4 497	3 443	3 618	3 754	3 438	1 788	3 556
• Coarse grain production	2 924	4 575	3 201	2 099	2 708	3 134	1 793	2 662

p: provisional.

Source: OECD (1998).

Bulgaria has a dual land use structure. In 1997, about 58 per cent of arable land was farmed by private farms, most of which are small-scale, and 42 per cent by large co-operatives. The state farming sector has become of negligible importance, after almost all state farms were split up and converted into co-operatives during transition (Table 3.3). The dual farming structure creates problems both for farm productivity and marketing logistics. The large co-operatives are often overstaffed and operate much in the same way as state farms did under socialism. On the other hand, the majority of private farms, which emerged as a result of restitution of farmland to the heirs of former private owners and have an average size of merely 1.5 hectares, is not able to use modern machinery and farming technology effectively. Also, small-scale farmers are charged with high marketing costs, because gathering and handling small quantities of produce from a multitude of producers is cumbersome and expensive for traders and downstream enterprises.

Table 3.3: Farming structure in Bulgaria

	Pre-transition			1997		
	State farms	Co-operatives	Private farms	State farms	Co-operatives	Private farms
Number of farms	300	0	1 600 000	27*	3 152	1 800 000
Average farm size (ha)	13 000	-	0	n.a.	621	1.5
Share of land use (%)	86	0	14	<1	42	58

*) data refers to 1996; n.a.: not available.

Source: European Commission (1995, 1998), OECD Secretariat.

Most grain in Bulgaria is sold immediately after harvest, because farmers lack adequate storage facilities. Also, since obtaining credit is difficult and highly expensive, farmers need the financial receipts from their crop to purchase inputs for the following campaign. Most farms are still dealing with the same mills they supplied before 1989. So while the old system of central planning has disintegrated, traditional farm-mill relationships have been maintained.

In 1996, there were 112 grain mills operating in Bulgaria (Table 3.4). The majority of these mills has a capacity of 200-250 tonnes per day. Most milling plants are 15-30 years old and use machinery that was built domestically or imported from former CMEA states. The one important exception is the *Melnichen Kombinat*, located in the Hadji Dimitur quarter of Sofia. This mill, which was constructed and equipped by a German engineering firm in 1986, is one of the biggest in Europe. It employs 305 people and has a capacity of 750 tonnes per day, which at current consumption levels means it could meet all the demand of Sofia and most of the surrounding region.

Table 3.4: Structure of the milling and baking industry in Bulgaria

Sub-sector	1994	1995	1996
Milling industry			
• Total production ('000 tonnes)	796	836	753
• Number of firms	79	n.a.	112
• Four-firm concentration ratio (%)	36	34	48
Baking industry			
• Total production ('000 tonnes)	270	287	346
• Number of firms	2 722	2 809	n.a.
• Four-firm concentration ratio (%)	6	7	n.a.

n.a.: not available.

Source: Gorton *et al.* (1998a).

The first major restructuring of the grain-flour-bread chain in Bulgaria occurred in 1991, when the state grain monopoly, *Zarneni Hrani*, was divided up into 74 independent state entities. The largest of these newly formed enterprises was *Zarno*. This company was responsible for conducting public and commercial transactions related to grain storage, handling, processing, and trade. Initially, it had a monopoly on storage, and other flour and feed mills have been highly dependent on *Zarno* for supplies of grain (Meekhof *et al.*, 1994: p. 258-259). This situation has led to charges that *Zarno* has been able to strongly influence the price of flour by refusing to supply independent mills in wheat deficit regions, and funnelling supplies to its own plants (Swinnen, 1998).

Meanwhile, the ownership influence of the Bulgarian state on grain milling has decreased over time. The milling capacity in the state sector has fallen from just over 45 per cent in 1994 to below 26 per cent in 1996, as six state enterprises were privatised or liquidated during this time, while new private enterprises entered the industry. As part of a reform package launched in March 1997, the Bulgarian government intended to privatise all 49 grain mills remaining under state ownership by the end of 1997. However, the privatisation programme was delayed by legal challenges from people who owned the mills or the land on which the mills stand before 1944. Privatisation is now expected to be completed by the end of 1998.

The four-firm concentration ratio for the milling industry decreased slightly from 36 per cent in 1994 to 34 per cent in 1995, but climbed back up to 48 per cent in 1996. This increase reflected the severe grain shortage in 1996 (Box 3.1), which led the government to impose a centralised grain distribution system. Under this regime, grain was directed mainly to the larger state mills for processing.

The comparison of price relationships along the supply chain during the period 1990-96 shows some fundamental shifts in agricultural pricing policy over time (Tables 3.5 & 3.6). In the early 1990s, the agro-food regulations of the socialist period were still largely in place. In 1990, for example, farmgate prices for wheat exceeded flour prices and accounted for 90 per cent of bread prices at the retail level. By keeping bread prices down, policy makers wanted to benefit consumers. This, however, turned out to be highly costly, in particular within a context of imperfect competition in the food chain, as several studies have shown (Ivanova *et al.*, 1995; Swinnen, 1998).

Box 3.1: The Bulgarian grain crisis of 1996

A severe shortfall of supplies in the Bulgarian grain sector emerged in 1996 (Table 3.2). This 'crisis' had been precipitated by wheat exports of one million tonnes between July and September 1995. The exports were spurred by large differentials between domestic and world market prices, as well as a combination of a real appreciation of the Bulgarian Leva and high interest rates that made domestic grain storage expensive. Moreover, the summer 1995 was a rare period without grain export restrictions, so that supplies could easily flow out of the country.

Overall during transition, Bulgarian grain exports have been subject to frequent trade policy changes (see the chronology at the end of this chapter). Trade measures have ranged from a total ban on bread-wheat exports in 1991, 1993, and 1996/1997, over export quotas in 1992 and 1994, to the intermittent imposition of export taxes. Measures have thereby sometimes been replaced within a month or two of their enactment. Between 1992 and 1994, for example, twenty-two separate government measures were introduced concerning grain trade alone (Mishev *et al.*, 1994).

Despite the large outflows of grain during summer 1995, the Bulgarian government retained its policy of announcing relatively low guarantee prices for grain for the following growing season. Moreover, the 'announced' prices, which were supposed to be guaranteed through intervention purchases of the State Agricultural Fund, were not adjusted for inflation, so that they fell in real terms over time. As a result, grain farming became unattractive and many farmers decided to switch to other crops. And even those agricultural producers that continued to grow grains could often not afford to purchase necessary production inputs, because the previous harvests had left them with little financial resources. In consequence, grain area and yields collapsed, and adverse weather conditions further diminished the harvest in 1996, which was 45 per cent below that in the previous year.

The Bulgarian government reacted to the grain supply crisis by organising a centralised grain distribution system, by introducing an export duty of 15 per cent, and by raising the 'announced price' for wheat to US\$134 per tonne for the following harvest. So the failure of partial liberalisation with reforms in areas such as input pricing and cropping choice, while retaining controls on output prices and trade, led the government to reimpose more stringent and comprehensive regulations, at least temporarily.

In June 1997, controls of wheat and bread prices were removed and replaced by prices that had been agreed in negotiations between producers and retailers. The government, however, continued to 'monitor' prices along the wheat-flour-bread chain. Moreover, in line with requirements set by the IMF, grain export taxes were removed and trade in grains was liberalised in 1998. Instead of the previous regulations, programmes to subsidise working capital, and advance payments for future delivery of grains were introduced to ease farmers' liquidity problems (see OECD (1998) for a more detailed description of these programmes).

Table 3.5: Prices in the Bulgarian wheat-flour-bread chain, 1990-96
(in US\$ per tonne)

	1990	1991	1992	1993	1994	1995	1996
Wheat price (at farm gate)	172	76	65	83	61	67	123
Flour price (at mill gate)	140	99	131	131	116	137	184
Bread price (at bakery gate)	187	127	155	182	174	214	275
Retail price	192	135	179	215	201	258	341

Source: Gorton *et al.* (1998a).

Table 3.6: Price relationships in the Bulgarian wheat-flour-bread chain, 1990-96
(in per cent of retail price)

	1990	1991	1992	1993	1994	1995	1996
Wheat price (at farm gate)	90	56	36	38	30	26	36
Flour price (at mill gate)	73	73	73	68	58	53	54
Bread price (at bakery gate)	98	94	87	85	87	83	81
Retail price	100	100	100	100	100	100	100

Source: Gorton *et al.* (1998a).

Subsequently, the price distortions were slowly phased out, so that wheat and flour prices fell continuously relative to retail prices until 1995. In 1996, farm gate and mill gate prices picked up again under the conditions of grain shortages on the domestic market, even though prices in the wheat-flour-bread chain were still under control of the Bulgarian government.

3.2 *The milk to dairy products chain*

The number of cows fell by about 40 per cent between 1990 and 1995, but has stabilised since then (Figure 3.1). The decline in herd size was largely the result of the price-cost squeeze that milk producers experienced. Production costs rose faster than output prices, as input subsidies were phased out, while domestic demand plummeted due to falling real incomes. Moreover, the restitution of farm assets to the heirs of former private owners led to a fragmentation of cow holdings, with a multitude of milk producers owning just one or two cows. In turn, many beneficiaries of restitution decided to send their stock to slaughter, rather than to become small-scale milk producers.

The decline in herd size led to a reduction of milk output of similar magnitude. Total milk production in Bulgaria decreased from 2.5 million litres in 1990 to 1.5 million litres in 1997 (Table 3.7). The volume of production supplied to dairies declined even more sharply, because of an increase in self consumption. While in 1989 about 81 per cent of all milk had been delivered to dairies, this share had fallen to only about 31 per cent in 1995 (Gorton *et al.*, 1998a). As a result, dairies have been left with significant excess capacities, and the shortage of raw milk led to a sharp contraction in the production of processed dairy products, such as butter and cheese (Table 3.7).

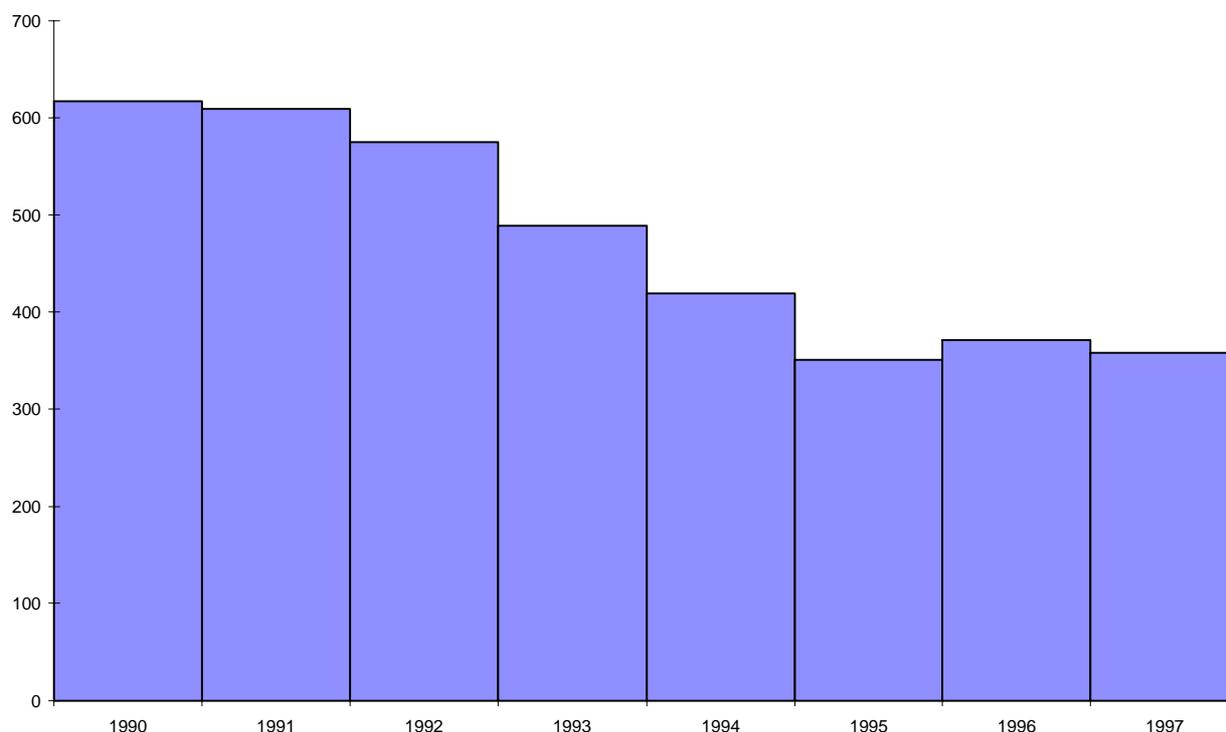
Table 3.7: Dairy production in Bulgaria, 1990-97
(‘000 tonnes)

	1990	1991	1992	1993	1994	1995	1996	1997(p)
Milk production	2 460	2 060	1 860	1 580	1 460	1 440	1 430	1 480
Butter production	22	12	9	5	2	3	2	2
Cheese production	144	120	84	67	60	43	41	27

p: provisional.

Source: OECD Secretariat.

Figure 3.1: Cow herd size in Bulgaria, 1990-97
(‘000 animals)



Source: OECD Secretariat.

Approximately 80 per cent of the milk supplied to dairies comes from small-scale producers. These farmers sell only the output that they do not use in their own households to dairies via milk collection points. About 100 farmers typically supply a collection depot. The quality of milk from small-scale producers is generally poor. Only 10 to 20 per cent of total supplies are considered suitable for cheese production, for example. Moreover, attempts to cheat collection stations by adding water to the milk to increase the volume, or by injecting lard to augment the fat content are commonplace. One dairy reported that in April and May 1997 they had bought 20 to 30 tonnes of “milk”, which was effectively just coloured water (Gorton *et al.*, 1998a). The quality of milk from co-operatives tends to be higher due to better hygiene and stronger relationships between farmers and milk processors.

There were 48 state-owned and about 500 private dairies operating in Bulgaria in 1995. While more numerous, the private dairies are much smaller than the ones in the state sector. A typical small-scale milk processing facility has a milk throughput of just about 5 tonnes per day, while most state dairies have capacities of 75 to 100 tonnes. The largest state-owned dairy in Bulgaria, which is located in Dobrich, processes 500 tonnes of milk per day. The dominance of the state dairies is also apparent in their domestic market share, which amounted to about three-quarters of marketed milk in 1995 (Mihaylova/Dimov, 1996: p. 4). Moreover, the four biggest state dairies combined accounted for about 44 per cent of total revenues in the milk sector. This four firm concentration ratio is substantially higher than the corresponding figures in Romania and most western European countries.

The financial situation of most state dairies has been difficult. In 1995, 36 out of the 48 state dairies were making losses (Mihaylova/Dimov, 1996: p. 10). Dairy managers blamed the costs of collecting and monitoring the quality of milk purchased for their poor financial results, as well as the nature of government intervention. Government price controls were widely viewed as unfair and distortive. The

'Price Law' of November 1995 determined that the mark-up of dairy enterprises were not to exceed the costs for producing and selling milk, yoghurt, and white cheese by more than 12 per cent. Moreover, the operation of the Price Commission caused major problems for dairies. Sets of new prices were established by the Commission only every 10 days. In the meantime, dairies had to work at the lower price until approval of the new price system was granted. In a macroeconomic environment of rampant inflation, this sluggish adjustment of milk and dairy prices turned out to be highly damaging for the financial health of the industry. The price controls were in place until 1997, and the analysis of price relationships during the earlier period 1994-96 does not reveal any clear trends of farm gate, dairy gate, and retail prices for milk (Table 3.8).

Table 3.8: Prices and price relationships in the Bulgarian milk to dairy product chain, 1994-96

	Absolute prices (in US\$ per tonne)			Relative prices (in per cent of retail price)		
	1994	1995	1996	1994	1995	1996
Raw milk price (at farm gate)	148	204	128	54	56	50
Pasteurised milk price (at dairy gate)	216	303	199	79	83	78
Retail price	274	365	256	100	100	100

Source: Gorton *et al.* (1998a).

Excess capacity and poor financial returns have largely deterred foreign investors from buying into the Bulgarian dairy industry. One exception has been the French multinational *Danone*, which established a joint-venture with *Serdica*, a Sofia based producer of dairy products, in 1994. The venture has concentrated on the domestic yoghurt market and has achieved a market share of over 25 per cent. Like many foreign investors in the CEECs, *Danone-Serdika* has targeted higher income groups who are willing to pay a premium for branded yoghurt. In order to obtain raw milk supplies of sufficient quality for its operations, *Danone-Serdika* has offered low interest or interest-free loans to milk producers in order to enable the latter to invest in upgrading milking technology, refrigerating equipment, and breeding animal stocks (Vicheva, 1997).

3.3 *The livestock to meat chain*

Livestock herds in Bulgaria shrank dramatically during transition. Between 1990 and 1997, the number of cattle and pigs dropped by more than 60 per cent (Table 3.9). The destocking was the result of the relative increase of input to output prices, and of a shortage of feedstuff. Meat production fell also, but to a somewhat lesser extent (Table 3.10). The ongoing destocking meant that more animals were slaughtered, thereby adding to meat output. Also, during the mid-1990s, up to 20 per cent of domestic meat was produced from imported animals.

Table 3.9: Livestock herd sizes in Bulgaria, 1990-97

	('000 animals)							
	1990	1991	1992	1993	1994	1995	1996	1997 ^p
Cattle (including cows)	1 575	1 457	1 311	974	750	638	632	582
Pigs	4 332	4 187	3 141	2 680	2 071	1 986	2 141	1 500

p: provisional.

Source: OECD Secretariat.

Table 3.10: Meat production in Bulgaria, 1990-97

	('000 tonnes)							
	1990	1991	1992	1993	1994	1995	1996	1997p
Total meat	791	659	650	565	447	481	505	450
<i>of which:</i>								
• Beef & veal	126	115	154	122	99	71	80	67
• Pigmeat	408	362	319	277	214	258	267	225
• Poultrymeat	182	100	89	97	74	97	92	n.a.

p: provisional; n.a.: not available.

Source: OECD Secretariat.

During the socialist period, the Bulgarian government encouraged the concentration of pig and poultry production in large state-owned complexes, holding thousands of pigs or hundred-thousands of poultry. In the mid-1980s, about 40 per cent of all pigs and more than 50 per cent of all poultry were kept on such large-scale farming enterprises. Despite the prevalence of farming units that allowed to use modern production techniques, livestock productivity was substantially below that of western countries. The reason for the poor performance of livestock enterprises was a shortage of high quality feed and poor feed conversion ratios. In 1992, for example, the Bulgarian Ministry of Agriculture calculated the ratio of feed consumption to live-weight gain for pigs to be about 6 to 1, which is nearly twice the level common in western countries (Cochrane *et al.*, 1994: p. 43).

The privatisation of pig production units has progressed much quicker in Bulgaria than in many other CEECs. Since 1994, state farms accounted for less than one per cent of total output. This privatisation has been accomplished without the level of fragmentation that has occurred in the dairy sector, for example, so that scale-efficient production units have been retained.

During 1994-96, a declining state-owned meat processing industry existed alongside an expanding private sector. In total, about 560 firms were operating in the Bulgarian slaughtering and meat processing industry. In 1995, 62 state slaughtering units were recorded in Bulgaria, but most of these typically large-scale facilities worked at much reduced capacities, if at all. Since then, the number of meat processors in the state sector has declined continuously due to privatisation or enterprise shut-down.

Private sector firms in the meat industry tend to be smaller and more heavily concentrated on second stage meat processing, rather than slaughtering. However, there were about 10 larger, privately-owned plants with integrated slaughtering and processing facilities in operation also. By 1995, private meat processors produced the vast majority of total meat, with their output share varying between 70 and 90 per cent by meat category. Four-firm concentration ratios for beefmeat and pigmeat in 1995 amounted to 23.1 per cent and 15.1 per cent, respectively, and were thereby roughly in line with corresponding figures for France and Germany, for example (Gorton *et al.*, 1998a).

Food quality problems have limited the sales prospects of many meat producers, particularly smaller firms. In 1997, only one Bulgarian meat company held a licence for exports into the EU. Moreover, a dual market structure has evolved on the domestic market with regard to meat quality. Larger processors tend to supply the main cities (Plovdiv, Sofia, Varna) and tourist resorts with relatively high quality products, while smaller firms focus on local markets in rural areas. These small processors typically sell a small range of meat cuts and low quality sausages. It has proven difficult for them to move away from the low quality segment of the market, as the overwhelming demand in rural areas is for low cost products. However, interviews with industry insiders revealed that enterprises in the meat processing sector have shown considerable determination and initiative in obtaining contacts and resources, modifying their

operations to exploit gaps in the market, and thereby refuting notions of a lack of entrepreneurial spirit or an unwillingness to take risks, which are often cited as major impediments to development (Gorton *et al.*, 1998a).

The development of livestock and meat prices and price relationships between 1990 and 1996 shows a similar pattern as in the grain-flour-bread chain (Tables 3.11 & 3.12). At the onset of transition, price relationships were heavily distorted, with chickenmeat prices at the processor gate in 1990, for example, exceeding retail prices. Later both farm gate and processor gate prices fell relatively to retail prices, even though the Bulgarian government loosened and removed price controls not before 1997.

Table 3.11: Prices in the Bulgarian livestock to meat chain, 1990-96

(in US\$ per tonne)

	1990	1991	1992	1993	1994	1995	1996
Beef & veal:							
• Farm gate price	2 536	522	588	779	713	1 283	732
• Processor gate price	2 453	775	1 079	1 586	1 277	2 503	1 641
• Retail price	2 757	1 581	1 962	2 782	2 970	3 129	2 217
Pork:							
• Farm gate price	2 809	553	590	682	616	1 093	546
• Processor gate price	2 718	820	1 081	1 388	1 104	2 133	1 225
• Retail price	3 053	1 674	1 965	2 434	2 567	2 666	1 656
Chicken:							
• Farm gate price	1 151	585	563	717	610	763	554
• Processor gate price	1 763	1 032	1 026	1 271	1 158	1 266	988
• Retail price	1 457	1 147	1 251	1 630	1 565	1 734	1 733

Source: Gorton *et al.* (1998a).

Table 3.12: Price relationships in the Bulgarian livestock to meat chain, 1990-96

(in per cent of retail price)

	1990	1991	1992	1993	1994	1995	1996
Beef & veal:							
• Farm gate price	92	33	30	28	24	41	33
• Processor gate price	89	49	55	57	43	80	74
• Retail price	100	100	100	100	100	100	100
Pork:							
• Farm gate price	50	34	30	29	23	32	28
• Processor gate price	68	57	51	48	41	52	53
• Retail price	100	100	100	100	100	100	100
Chicken:							
• Farm gate price	79	51	45	44	39	44	32
• Processor gate price	121	90	82	78	74	73	57
• Retail price	100	100	100	100	100	100	100

Source: Gorton *et al.* (1998a).

CHRONOLOGY

Government interventions in agro-food chains in Bulgaria, Jan. 94 - Jun. 97

Date	Decree	Measure
1st Jan. 94	No.241	Export of almost all grains remains banned. Some agricultural inputs are imported duty-free but within certain quotas.
5th Apr. 94	No.63	Export of all types of flour and mixed grain forage within certain quotas is permitted. Exports subject to licensing by MAFI and export taxes are levied.
30th Aug. 94	No.172	Export of wheat bran permitted with automatic licensing subject to export tax of 10 USD/t.
15th Nov. - 31st Dec. 94	No.205	Ban on export of grain seeds repealed and export taxes levied. Export tax on flour lowered to 5 USD/t.
1st Jan. - 15th Feb. 95	No.307	Export of wheat and feed barley is limited to certain fixed quotas.
6th Nov. 95	No.194	<p>Law for the Protection of Agricultural Producers introduced. Market price support includes guaranteed floor prices for 9 major agricultural products (wheat, maize, sugar beet, potatoes, beef, lamb, pork, cows' milk and sheep's milk).</p> <p>Guaranteed prices are based on the average production cost of individual commodities plus a profit margin. They cannot exceed 85% of the national currency equivalent of average export prices over the last 3 years. The state Agricultural Fund is told to intervene on the market if prices are below 95% of the established guaranteed floor prices or if they are more than 20% higher than guaranteed prices.</p> <p>According to the Law, the Fund signs contracts with producers for purchasing all production offered at guaranteed prices. Direct support to farmers is also outlined. The mechanisms for direct protection are: subsidies for some basic farm products, export subsidies, low interest investment credits, preferential credits for creation of new farms, subsidies for mountain and semi-mountain regions.</p> <p>Farmers and agricultural companies are also exempt from paying income and profit tax for 5 years from 1st July 1995. Total ban on grain exports imposed.</p>
5 th Jan. 96	No.34	In addition to the separate export bans on grain, flour, oilseeds and animal feed products, the system of registration was extended. Export registration required for all meat and dairy products and import registration for live animals, meat and dairy products. Export taxes increased to live cattle and animal skins.
Feb. 96	No.104	Government lifts its ban on maize and sunflower exports. Ban of grain and cereal products confirmed until the end of 1996.
4th June 96	No.152	Temporary import surcharge imposed, levied on all imports.

Date	Decree	Measure
4th Sep. 96	No.376	Minimum export prices introduced. For example minimum prices for pork (bone in) set at 1150 US\$/t and deboned pork at 1450 US\$/t.
17th Oct. 96	No.397	Ban on the export of vegetable oil lifted to finance wheat imports.
21st Mar. 97	No. 116	Determination of the price for imported wheat: A fixed price for 100,000 tonnes of wheat imported from Poland was established at 150\$/T. The revenue from the sale of imported wheat on the domestic market directed to a special account of Zarneni Hrani. Money used for covering the transport/delivery costs and exchange rate differences.
24th Apr. 97	No.169	Amendment to the Price law. The number of goods with ceiling prices decreased. Observed food goods are: wheat, flour, bread, pasteurised milk, yoghurt, white cow cheese, meat products good for consumption in a short period, sunflower oil. The upper threshold of 'normative' profit margins is established at 14% for the mentioned goods at retail and wholesale levels and up to 12% for production and processing.
19th June 97	No.269	Changes in regulations for applying the price act. Contract retail prices between producers (importers) and traders introduced. They replace the ceiling prices. Contracted prices should be stated on a good's label or in the price list and traders do not have rights to change the prices. Contracted prices are established for: wheat flour, bread, milk (pasteurised), yoghurt, white cow cheese, meat (pork, veal, lamb, chicken), sausages (malotraini), oil, butter, eggs, yellow cow cheese and sugar. For products for which minimum prices are established (for this year - wheat) contracted prices should not be lower than the minimum prices.
23rd June 97	No.270	<p>Change in trade regime. The ban on the export of cereals is replaced by export tax amounting to 15% of the world price on the major commodity exchanges. If world prices change by more than 5% the price on which the export tax is calculated is likewise changed. The ban on the export of flour is replaced by a 30\$ per tonne export tax. The export of sunflower oil is subject to a tax equal to 90\$/t and 320\$/1000 litres respectively.</p> <p>Customs duties for meat (chapter 02 from the tariff) are decreased. Import of wheat, sunflower and sunflower oil is duty free. For export of cereals and sunflower oil additional documents are required for quality assurance issued by the National Laboratory (Inspeccia) for grains. Contracts for buying grains including quality, quantity and price and conditions for delivery must be lodged. In addition, documents from the tax office stating that the exporter has paid all their taxes including a 15% deposit which was refundable after completing the export and export tax payments were also required.</p>
23rd June 97	No.271	The minimum price of wheat under the Price law is set at 230,000 leva/t.
Source: Gorton <i>et al.</i> (1998a).		

4. Structure and performance of agro-food chains in Romania

In 1996, the agricultural downstream sector in Romania accounted for 5.8 per cent of GDP and 9 per cent of total employment. Food industry output fell by about 50 per cent during transition, with the dairy and meat industries experiencing above average contractions of output. In parallel, imports of food products surged, as consumers preferred the superior diversity, quality, and packaging of western supplies over domestic products.

A mass privatisation programme was launched in 1995. Yet, the programme proceeded at a slower pace than expected. By the end of 1997, less than half of all state-owned food companies had been privatised (OECD, 1998). Privatisation had progressed the furthest in the edible oil, alcoholic beverage, and milling sub-sectors, and the least in the meat processing, wine and soft drinks, and sugar industries.

The legislative and institutional framework for foreign direct investment in Romania was established as early as 1991. The 'Law on Foreign Investment' provided for tax rebates and allowed for the repatriation of profits to attract foreign investors. However, bureaucratic rigidities, and an unstable political and legal environment left many potential investors undecided. A substantial number of joint ventures were established during the early 1990s, but these had generally only a symbolic foreign participation in order to ensure eligibility for tax advantages.

Inflows of foreign capital grew since 1995, as the privatisation programme created improved opportunities for investments. However, the agro-food sector benefited to a relatively small extent from the increasing number of FDI projects, as the pace of privatisation and restructuring was relatively slow. The only branches that attracted substantial FDI inflows up to the end of 1997 were the brewing, soft drinks, and confectionery industries.

4.1 *The grain, flour, and bread chain*

About two-thirds of Romania's arable area, i.e. about 6 million hectares, is planted to grains, in particular maize and wheat. During transition, the share of land used for grain production increased at the expense of industrial crops, dry pulses, potatoes, and vegetables. In 1997, total grain production amounted to about 20 million tonnes (Table 4.1). Despite the good harvest in 1997, grain yields remain low in Romania compared with western Europe, because farmers lack financial resources to purchase fertiliser and other production inputs, do not have easy access to advice from extension services, and have to rely on an irrigation system whose technical condition is deteriorating.

Table 4.1: Grain production in Romania, 1990-97

	('000 tonnes)							
	1990	1991	1992	1993	1994	1995	1996	1997(p)
Total grain production	17 108	19 275	12 250	15 457	18 169	19 859	14 177	20 058
<i>of which:</i>								
• Wheat production	7 289	5 473	3 206	5 314	6 135	7 667	3 144	6 643
• Coarse grain production	9 819	13 802	9 044	10 143	12 034	12 192	11 033	13 415

p: provisional.

Source: OECD (1998).

Romania has retained a diverse farming structure during transition (Table 4.2). State farms were transformed into commercial companies, but continued to exist as large-scale production units. The other type of large-scale farms during the socialist period, traditional co-operatives, were mostly broken up in 1990 and 1991, so that the share of the land farmed by private farms increased from one quarter in 1989 to about three-quarters in 1997. Private farms show a substantial variety in size and farming intensity, though. The range stretches from associations of family farms of an average size of more than 100 hectares to part-time farmers, who work only a fraction of a hectare.

Table 4.2: Farming structure in Romania

	Pre-transition			1997		
	State farms	Co-operatives	Private farms	Commercial farms*	Co-operatives	Private farms**
Number of farms	411	3 776	2 400 000	490	3 875	3 700 000
Average farm size (ha)	5 001	2 374	1.5	3 657	451	3
Share of land use (%)	14	61	25	12	12	76

*) Former state farms; **) Includes "family associations".

Source: European Commission (1995, 1998).

The large number of small-scale farmers in Romania, who are not able to supply large quantities of homogenous produce to handling companies, face high per unit conditioning, drying, and storage fees. These fees have sometimes amounted to up to 50 per cent of the grain price. Private farmers, therefore, often resort to handle and store grain on-farm using primitive facilities, which has the disadvantage of frequently resulting in substantial losses due to spoilage and quality deterioration.

Local peasant markets had been liberalised in 1990, and the formal obligation of farmers to deliver their products to the state had been abolished, even though the state procurement system based on the *Romcereal* agency continued to exist. By 1995, private farmers and co-operatives in Romania produced about 70 percent of all marketed wheat, but this share fell sharply in 1996 as output halved and on-farm consumption rose. The government responded to the output collapse by requiring all farmers to sell grain to state purchasers only. This regulation was intended to prevent scarce wheat supplies to slip out of the country.

Until 1995, *Romcereal* had been the state agency in charge of procuring and storing wheat in the "controlled" market. Established in 1991, *Romcereal* was assigned to collect wheat from agricultural producers according to previously-established contracts, to conduct the country's international wheat trade, to ensure an adequate distribution of wheat between surplus and deficit areas, and to monitor and maintain national grain reserves. *Romcereal* thereby played a dominant role in the domestic market, procuring between 75 percent and 87 percent of all marketed wheat during the period of its existence (Gorton *et al.*, 1998b).

In order to encourage competition in the sector, *Romcereal* was re-organised in 1995 into the National Agency for Agricultural Products (NAAP) and 44 *Comcereals*. NAAP inherited storage facilities for 3.5 million tonnes of grain, out of *Romcereal's* total capacity of 10.4 million tonnes, and took over many of the former activities of *Romcereal*, including wheat procurement from agricultural producers, commodity storage, import-export operations, and maintaining national grain reserves. The 44 *Comcereals*, which were established out of the territorial branch offices of *Romcereal*, were involved in the operation of "compensation funds". They bought cereals from farmers in exchange for the provision of various production inputs and services, such as loan advances, storage, agro-chemical and fuel supply, spare parts, and equipment rentals. They also maintained regional stocks for the national reserve.

In February 1997 the grain procurement system was revised again, with NAAP itself being broken up into 29 commercial societies. These are to be privatised under the conditions of the World Bank Agricultural Sector Adjustment Loan. Moreover, the *Comcereals* are also scheduled for privatisation during 1998.

Romcereal/NAAP played a crucial role in implementing the government's wheat pricing and subsidy policies. All wheat collected by *Romcereal/NAAP* was procured at officially fixed minimum guarantee prices. In addition, the government paid farmers a supplementary premium through *Romcereal/NAAP* since 1993. The price premia were introduced to provide farmers with incentives to supply the state procurement agencies, despite the low level of official procurement prices. Only state-owned collection agents, i.e. *Romcereal* and *NAAP/Comcereals*, were eligible to act as distributors of the supplementary payments. These premia represented between 10 per cent (in 1993) and 22 per cent (in 1996) of the minimum guaranteed prices. In 1995, expenditures on wheat premia accounted for about 0.7 per cent of total government spending.

Despite official guaranteed prices being below uncontrolled farmers' market prices, farmers had little opportunity to avoid the state procurement system. During times, such as in 1996, they were legally obliged to use state channels for their grain sales. Moreover, even when they were allowed to use other marketing channels, the monopolistic position of *Romcereal/NAAP/Comcereals* in terms of access to inputs and services made it difficult to avoid the state agencies. In exchange for receipt of inputs and services, contracts required farmers to deliver a certain proportion of their output to *Romcereal/NAAP/Comcereals* at the official prices.

In addition to controlling marketing channels, the Government also set fixed margins for collection, storage, handling, and transport of grain, carried out by *Romcereal/NAAP* (Table 4.3). These margins were determined in a process of negotiations between *Romcereal/NAAP*, the Ministry of Agriculture and Food, the Ministry of Trade, the employer association of state-owned agro-processors, and the agency for rural co-operation. The per unit margins of marketing and handling activities generally did not take into account changes or improvements in productivity, and, by and large, did not reflect the "true" costs of these activities.

Table 4.3: State determined collection and storage margins for *Romcereal/NAAP*, 1992-96

Cost item	(Lei/tonne of wheat, current prices)			
	August 1992	August 1993	September 1994	June 1996
Material expenditures	433	593	700	1 000
Wages & social security	300	391	4 215	5 903
Depreciation allowance	54	54	540	540
Interest	2 851	20 050	58 586	84 214
Fuel and electricity	154	229	271	323
Cost of transport to customers	2 837	4 538	5 000	7 000
Tax on buildings	-	650	650	650
Pension & research fund	-	60	3 950	-
Risk rate	-	-	-	2 700
Expenses for collection and transport	1 201	1 920	9 600	12 670
Net Profit	171	675	2 488	3 000
<i>Overall margin</i>	<i>8 000</i>	<i>29 160</i>	<i>86 000</i>	<i>118 000</i>

Source: Gorton *et al.* (1998).

The output share of private companies in the milling and baking sector has continuously increased during transition, as state-owned enterprises were privatised and new private firms established. Privatisation was

completed in 1996. The larger firms remained longest under state control, so that the share of private firms in the sector exceeded the share of private output in total output (Table 4.4).

Table 4.4: Private sector share in the Romanian milling and baking industry, 1994-96
(in per cent)

Sub-sector	1994	1995	1996
Milling industry			
• Share of firms in the private sector	80	85	100
• Share of marketed output in the private sector	55	70	100
Baking industry			
• Share of firms in the private sector	92	95	100
• Share of marketed output in the private sector	30	50	100

Source: Gorton et al. (1998b).

In 1996, there were about 700 firms operating in the milling industry and about 2 100 in the baking sector. Most of these enterprises were rather small-scale, often only one-person operations (Table 4.5). The four-firm concentration ratios for flour milling and baking amounted to 8.5 per cent and 9.1 per cent, respectively, and the largest producers in both the milling and baking industry had a market share of merely about 2.5 per cent. Concentration in first and second stage wheat processing is, hence, not as high as in many OECD countries. However, the small-scale of facilities does not allow processors to reap benefits from economies of scale, so that some consolidation is desirable in order to lower per-unit operational costs.

Table 4.5: Structure of the milling and baking industry in Romania, 1994-96

Sub-sector	1994	1995	1996
Milling industry			
• Total flour production ('000 tonnes)	2 725	3 030	2 531
• Number of firms	400	530	695
• Four-firm concentration ratio (%)	9	6	9
Baking industry			
• Total bread production ('000 tonnes)	2 129	2 270	2 360
• Number of firms	1 200	1 600	2 104
• Four-firm concentration ratio (%)	10	8	9

Source: Gorton et al. (1998b).

Until 1997, the Romanian government fixed a milling margin for the processing of wheat procured at official prices. These margins were calculated on previously-established norms for unit processing costs. There were two different types of consumer prices for bread and wheat-based products: (i) official prices established by public authorities; and (ii) unregulated prices, which applied to varieties of bread not included on the list of controlled products. The latter was however fairly extensive. In 1995, for example, the list included 72 items. State-owned processors had to use at least 80 per cent of the wheat they had purchased at state minimum prices for the production of bread products listed in the official register, which then was sold at regulated prices to consumers. Private wheat processors were for the first time allowed in 1996 to purchase wheat from NAAP, subject to the constraint that they used this wheat strictly for the production of goods for the domestic market and sold their output at official prices. However, the restrictions on the use of state-procured wheat were difficult to monitor and, indeed, did not prohibit widespread fraud (Box 4.1).

Box 4.1: Subsidy fraud in the Romanian bakery industry

A nation-wide survey by the Romanian Ministry of Finance revealed in 1996, that about 270 flour and bakery firms had misused state-procured grain and grain products. Firms bought wheat and flour from suppliers within the state sector at low official prices and, in violation of existing regulations, sold it to foreign buyers. One company in the northern Romanian province of Bistrita, for example, is reported to have purchased 100 tonnes of flour at official prices of 517 000 Lei/tonne and sold it on to a Bulgarian firm for 2.1 million Lei/tonne. Also, several bakeries sold bread made from state-procured and price regulated wheat on the free, uncontrolled market, where they could obtain a substantially higher price (Agra Europe, January 1997: p. 34).

The margins between official prices at different stages of the supply chain were calculated from norms for unit processing costs. These norms did not reflect changes in input costs or productivity over time, and hence were only loosely related to actual processing costs. The administratively fixed milling margins for white flour for the period 1993 to 1996 are shown in Table 4.6.

Table 4.6: Structure of administratively set milling margin for standard white flour (type 680)

	(Lei/kg, current prices)		
	Sept. 1993	Sept. 1994	June 1996
Total milling margin	69.0	106.3	127.5
<i>of which:</i>			
• Fuel expenses	8.8	10.9	12.7
• Electricity expenses	24.2	37.8	43.5
• Transport expenses	5.0	7.4	8.8
• Other material expenses	5.0	7.1	8.5
• Depreciation	2.0	2.6	2.6
• Wages and labour taxes	6.7	11.5	12.3
• Other taxes and interest	7.8	11.2	17.3
• Gross profit	9.5	17.8	21.8

Source: Gorton *et al.* (1998b).

Official consumer prices were likewise calculated on the basis of a cost-plus pricing method. Fixed margins for collection, storage, milling, and baking were added to the official "grain purchase" prices to yield official ex-factory consumer prices. These prices were negotiated annually by the Employers' Association of the state-owned and former state-owned wheat processors, the Ministry of Agriculture and Food, the Ministry of Finance, and the Ministry of Trade.

The analysis of prices and price relationships in the Romanian wheat-flour-bread chain shows a steady increase of flour prices, both in absolute and in relative terms, over the period 1994-96 (Table 4.7). On the other hand, farm gate, bakery gate, and retail prices changed little. In particular, bakery gate prices remained very high relative to retail prices, as the government intentionally restricted retail price increases in order to benefit consumers.

Table 4.7: Prices and price relationships in the Romanian wheat-flour-bread chain, 1994-96

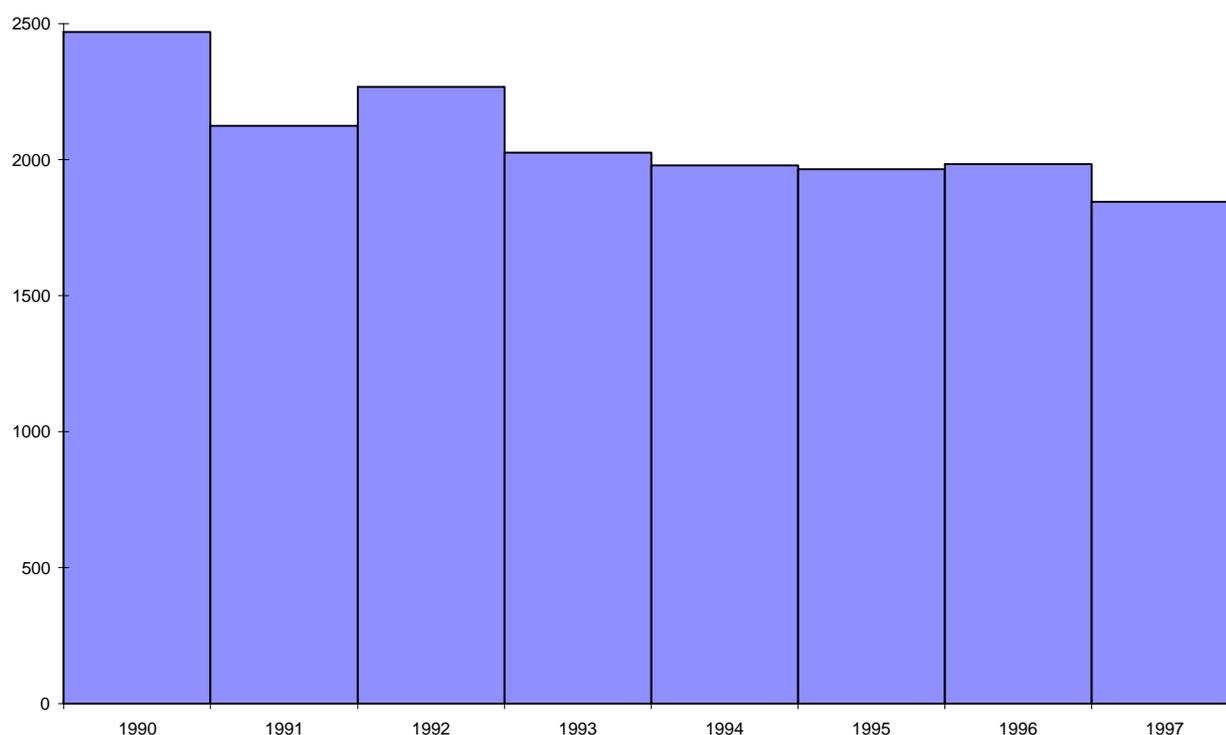
	Absolute prices (in US\$ per tonne)			Relative prices (in per cent of retail price)		
	1994	1995	1996	1994	1995	1996
Wheat price (at farm gate)	108	98	114	34	32	37
Flour price (at mill gate)	189	210	248	60	69	81
Bread price (at bakery gate)	295	282	285	94	93	94
Retail price	314	305	305	100	100	100

Source: Gorton *et al.* (1998b).

4.2 *The milk to dairy products chain*

In the early period of transition, cow numbers in Romania dropped significantly, but not as sharply as in Bulgaria, for example. The main reason for the destocking was the dismantling of former agricultural co-operatives, the distribution of their livestock to farm workers, and the subsequent sale and/or slaughter of animals. From 1993, overall herd size stabilised (Figure 4.1).

Figure 4.1: Cow herd size in Romania, 1990-97
(‘000 animals)



Source: OECD Secretariat.

Milk output in Romania increased over the period 1990-97 despite the destocking of cows, as productivity went up (Table 4.8). Moreover, the output rise was helped by the setting of minimum guaranteed prices by the Romanian government between 1993 and 1997. In addition to the guarantee price, farmers also received a premium payment of 30-52 per cent of the milk price from the government. The premia payments were disbursed to milk processors, which in turn were required to pass the transfer on to farmers. However, payments from the state budget were often delayed by one to two months, and high

rates of inflation eroded their real value. Thus, the premia payments never quite acted as the large production incentives they were intended to be. On the other hand, the support payments proved quite costly. In 1995, outlays for milk delivery premia accounted for about one per cent of total governmental expenditures.

Table 4.8: Dairy production in Romania, 1990-97
(‘000 tonnes)

	1990	1991	1992	1993	1994	1995	1996	1997(p)
Milk production	4 560	4 750	4 630	4 880	5 520	5 850	5 980	5 990
Butter production	33	23	21	18	14	16	13	10
Cheese production	94	71	49	50	47	51	48	46

p: provisional.

Source: OECD Secretariat.

The number of dairies and the market share of private sector firms increased continuously during 1994-96 (Table 4.9). Of the 421 companies active in milk processing in 1996, about 300 were relatively modern facilities (Gorton *et al.*, 1998b). Private dairy companies have been particularly successful in the cheese market, with their output rising from 6 300 tonnes in 1994 to 42 000 tonnes in 1996.

Table 4.9: Structure of the dairy industry in Romania, 1994-96

	1994	1995	1996
• Number of firms	100	350	421
• Marketed output from private sector (%)	47	54	57
• Four-firm concentration ratio (%)	19	18	31

Source: Gorton *et al.* (1998b).

Up to 1996, milk processors that purchased raw milk at the officially set minimum guarantee price, were required to sell their dairy products at fixed retail prices. These prices were established in negotiations between the Ministries of Agriculture, Finance, and Trade. Prices were thereby set according to a cost-plus formula, that consisted of a fixed margin for collection, handling, storage, transport, and processing activities, as well as a fixed profit mark-up (Table 4.10). The processing margins were estimated by specialised departments within the Ministry of Finance and the Ministry of Agriculture and Food, and were supposed to take into account inflation, seasonality in consumption and production, and existing credit facilities.

All state controlled milk and dairy prices were periodically revised and increased, but these adjustments tended to lag behind developments in the parallel, unregulated market. This meant that state procurement prices for liquid milk fell as much as 25 per cent below their free market equivalents. On the other hand, the production of other dairy products, such as cheese, was profitable, as producers were able to vary their ingredients considerably so that they could avoid strict controls. Hence, milk processors were able to cross-subsidise among the various dairy products they produced, and this allowed them to stay in business.

Table 4.10: Structure of fixed dairy gate sales price for liquid milk, 1995-96

Cost item	(lei/hl, current prices)			
	1995		1996	
	Summer	Winter	Summer	Winter
Raw milk	14 122	15 293	29 227	33 985
Packaging materials	3 520	3 520	4 927	4 927
Processing costs, of which:	8 538	8 538	11 440	13 552
• fuel	579	579	860	860
• electric power	598	598	897	897
• water	430	430	624	624
• transport	3 007	3 007	4 210	4 210
Gross profit	5 778	6 301	4 480	5 765
Ex-factory sales price	31 953	33 652	50 034	58 229
Retail margin	2 913	3 045	5 014	5 991
Value added tax	3 137	3 303	4 952	5 780
Retail price	38 000	40 000	65 000	70 000

Source: Gorton *et al.* (1998b).

4.3 *The livestock to meat chain*

Cattle and pig inventories decreased sharply at the beginning of transition as herds in the former agricultural co-operatives were sold off and/or slaughtered. In the mid-1990s, livestock numbers stabilised and in 1996 even increased (Table 4.11), as the stock increases on private farms more than compensated for herd reductions on state farming enterprises. In 1997, however, a renewed contraction of livestock herds occurred, after the Government decided to abolish all assistance and price support programmes that had previously been available for livestock producers. Furthermore, it was announced that all remaining state-owned livestock operations would be privatised or liquidated by the end of 1998. In parallel, import tariffs were cut in May 1997, so that livestock producers faced stiffer competition from imported products.

Table 4.11: Livestock herd sizes in Romania, 1990-97

	('000 animals)							
	1990	1991	1992	1993	1994	1995	1996	1997p
Cattle (including cows)	6 291	5 381	4 355	3 683	3 597	3 481	3 496	3 235
Pigs	11 671	12 003	10 954	9 852	9 262	7 758	7 960	7 093

p: provisional.

Source: OECD Secretariat.

Pork has traditionally been the main meat produced and consumed in Romania. In 1997, it accounted for about 55 per cent of all meat produced (Table 4.12). Up to 1995, more than 60 per cent of the domestically marketed pigs came from specialised state owned complexes. Many of these enterprises were vertically integrated firms, incorporating pig breeding, fattening, slaughtering, processing, and sometimes even retailing. However, such agro-industrial complexes, of which there were 49 in 1995, serve a declining share of the market, while small-scale private producers are becoming increasingly important. This is the result of the on-going privatisation of integrated state companies, and the emergence of private farms established after 1990. Most of these small-scale producers, however, only raise one to five pigs, and market only those animals that they do not slaughter for consumption in their own households.

Table 4.12: Meat production in Romania, 1990-97

	('000 tonnes)							
	1990	1991	1992	1993	1994	1995	1996	1997p
Total meat	1 491	1 346	1 256	1 279	1 215	1 221	1 234	1 141
<i>of which:</i>								
• Beef & veal	255	225	242	253	280	247	250	280
• Pigmeat	706	678	608	645	598	601	612	620
• Poultrymeat	561	459	406	376	325	367	379	231

p: provisional.

Source: OECD Secretariat.

Concentration in the Romanian meat industry represents no major concern. In 1996, there were 880 slaughtering houses and 980 meat processing firms operating on the domestic market. The four firm concentration ratio amounted to 12 per cent, which is low compared with most western European countries (Table 4.13).

Table 4.13: Structure of the meat industry in Romania, 1994-96

Sub-sector	1994	1995	1996
Slaughtering			
• Number of firms	550	700	880
• Share of private sector in output (%)	n.a.	n.a.	81
Meat processing			
• Number of firms	670	800	980
• Share of private sector in output (%)	n.a.	n.a.	88
• Four-firm concentration ratio (%)	n.a.	n.a.	12

n.a.: not available.

Source: Gorton *et al.* (1998b).

As in the grain and milk chains, a dual market structure prevailed in the Romanian meat market up to 1997, with a state controlled market for livestock and meat products operating alongside free peasant markets. In the controlled market, procurement for the so-called domestic consumption fund was made at a minimum guaranteed price, established once or twice a year by the Government. The setting of this price was supposed to take into account factors such as production cost norms based on conversion ratios for feed, developments in the international market, and domestic prices on the peasant market. However, since official procurement prices remained unchanged for months, they frequently fell short of prices in the non-controlled markets.

To nevertheless encourage farmers to supply their livestock to state marketing channels, supplementary payments that amounted to 32 to 45 per cent of the official procurement price were granted to marketing agents. The latter then were required to sell their processed meat products at state controlled retail prices. In 1995, premia payments for pork and poultry alone amounted to 462 billion Lei, i.e. about 2.7 per cent of total governmental expenditures.

The setting of price ceilings at the retail level revolved around conversions from live to carcass weights and determination of specific processing costs, to which a profit margin was added (Table 4.14). However, given the variety of meat products sold on the market, each of them with a different meat and complementary service content, the monitoring of compliance with the regulations turned out to be a major problem.

Table 4.14: Structure of Romanian fixed ex-factory price for pork carcasses, 1993-96
(Lei/kg, current prices)

	1993	1994	1995	1996
Procurement price (live animal)	750	2 200	3 100	3 700
Premia	(340)	(650)	(1 150)	(1 150)
Transport farm-gate to slaughterhouse	12	20	24	31
Value of by-products (organs)	(38)	(126)	(180)	(240)
Conversion factor (slaughter/live weight)	0.654	0.654	0.654	0.654
Value of the slaughtered animal	587	2 208	2 743	3 579
Slaughtering costs	92	145	220	400
Profit margin	66	100	282	321
Ex-factory sales price	745	2 453	3 245	4 300

Source: Gorton *et al.* (1998b).

To facilitate control and prevent leakages, all processors had to submit a complete list of the products they produced, and both wholesale and retail prices for every product were supervised by local representatives of the Ministry of Finance. This system created incentives for processors to shift to the production of highly processed products, for which the recipes could be “adjusted”. It was, for example, common that the fat content in salami and other sausages was increased, while the sale price remained equal to that negotiated for standard quality sausages. Such activities turned out to be impossible to control or to eliminate.

Table 4.15 shows the prices and price relationships in the Romanian livestock to meat chain during 1994-96. Farm gate prices increased in 1996 compared to the two previous years for beef, poultry, and in particular pork. Moreover, the fact that pork and poultrymeat is more expensive than beef in Romania is remarkable, since consumers in most European countries show a preference for beef over the two white meats.

Table 4.15: Prices and price relationships in the Romanian livestock to meat chain, 1994-96

	Absolute prices (in US\$ per tonne)			Relative prices (in per cent of retail price)		
	1994	1995	1996	1994	1995	1996
Beef & veal:						
• Farm gate price	843	983	813	64	65	67
• Processor gate price	1 067	1 225	1 092	81	81	90
• Retail price	1 317	1 512	1 213	100	100	100
Pork:						
• Farm gate price	988	903	1 128	47	44	57
• Processor gate price	1 198	1 456	1 622	57	71	82
• Retail price	2 102	2 051	1 979	100	100	100
Chicken:						
• Farm gate price	929	812	957	50	45	50
• Processor gate price	1 264	1 263	1 301	68	70	68
• Retail price	1 859	1 805	1 914	100	100	100

Source: Gorton *et al.* (1998b).

5. Structure and performance of agro-food chains in Slovenia

The food industry in Slovenia contributes more to aggregate output than primary agriculture. It accounted for 4.6 per cent of GDP in 1997, compared to agriculture's share in GDP of 4.4 per cent. Moreover, food companies employ 3.0 per cent of the labourforce. With the share in GDP exceeding that in total employment, labour productivity in the food industry at domestic prices is higher than the Slovenian average.

The output of Slovenia's agro-industry fell by almost a quarter between 1990 and 1993, mainly due to the disruption of traditional markets in former Yugoslavia. But since 1994, output has continually recovered as new export markets were found, and food production reached about 80 per cent of pre-independence levels in 1996.

Soon after independence, the Slovenian government embarked on a comprehensive privatisation programme (Box 5.1). Legislation on the conversion of enterprises from social into private ownership was passed during 1991-93. Because of uncertainties over the ownership of commercial assets, in particular land, little progress was made in implementing the programme until 1994. But at the beginning of 1998, private ownership had become the most important form of corporate control in Slovenia's agro-industry. Most firms that had been obliged in 1992 to undergo privatisation had been put under new ownership (Table 5.1). All firms in the sugar, fruit and vegetable, and animal feed sectors, for example, had been privatised. However, in other sub-sectors, such as in non-alcoholic beverage production, progress has been slower and a significant proportion of companies rests under state control. Overall, privatisation in agro-industry was not as advanced yet as in some other central European countries, such as in the Czech Republic and in Hungary.

Table 5.1: Privatisation progress in Slovenia's agro-industry

	Obligated to privatise (1992)			Privatised (1 Jan. 1998)		
	No. of firms	Value of output (mill. SIT)	No. of employees	No. of firms	Value of output (mill. SIT)	No. of employees
Milling industry	4	8.51	939	3	5.95	750
Bread and pastry production	18	15.17	3 581	14	10.83	2 199
Fruit and vegetable processing	4	15.42	1 793	4	15.42	1 793
Meat and fish processing	20	40.72	3 719	15	31.33	2 725
Dairying	6	29.94	1 680	4	8.71	458
Sugar production	1	5.15	426	1	5.15	426
Confectionery	3	5.52	283	2	4.36	211
Oil and fat production	6	0.32	606	2	8.17	692
Other food production	12	33.87	2 683	6	24.02	1 630
Alcoholic beverages	7	26.79	1 917	4	20.89	1 360
Non-alcoholic beverages	5	7.09	766	2	3.13	270
Animal feed production	3	2.32	79	3	2.32	79

Source: Gorton *et al.* (1998c).

Foreign investment in Slovenia's agro-industry has been modest so far. By the end of 1996, the total stock of foreign direct and portfolio investment in agro-industry amounted to US\$37.7 million, which corresponded to merely 2 per cent of all foreign investments in Slovenia. Like foreign ventures in Slovenia in general, foreign investments in the agro-food sector have been impeded by political instability in former Yugoslavia, the small size of the domestic market, and the preferences that were given to

enterprise managers and workers during the privatisation process. Moreover, the legislative framework for foreign ownership of Slovenian enterprises dates back to the pre-independence time.

Box 5.1: Procedures for food industry privatisation in Slovenia

Ownership transformation in Slovenian agro-industry followed two different models, based on the 'Law on Co-operatives' and the 'Law on Privatisations', respectively. The former applied to all those agro-processing enterprises that had a direct relationship with agricultural producers, while the latter provided the basis for the privatisation of other agro-industrial, as well as all manufacturing firms in general. Under the provisions of the 'Law on Co-operatives', up to 45 per cent of a company's capital was allocated to agricultural producer co-operatives. Associations of milk producers, for example, received 45 per cent of the shares in the dairies that processed the milk deliveries of their members. Furthermore, three government agencies, namely the Slovenian Development Fund, the Pension Fund, and the Compensation Fund, took in a total of 40 per cent of the shares. Up to 20 per cent of the assets were distributed to employees (Box Table 5.1). This form of privatisation covered about two-thirds of all socially owned food companies and was particularly dominant in the milk, meat, sugar, and wine sectors, where agricultural producer co-operatives exist.

Box Table 5.1: Procedures for food industry privatisation in Slovenia

Institution	Shares in capital according to 'Law on Co-operatives' (per cent)	Shares in capital according to 'Law on Privatisations' (per cent)
Associated co-operatives	up to 45	-
Internal and external investors	-	40
Government agencies:		
• Development Fund	20	20
• Pension Fund	10	10
• Compensation Fund	10	10
Internal distribution to employees	up to 20	20
Total	100	100

Source: OECD Secretariat.

The share distribution according to the 'Law on Privatisations' was somewhat different. The three governmental agencies received again 40 per cent of a company's assets and 20 per cent were distributed free of charge to enterprise employees, but the remaining 40 per cent were sold to internal or external investors instead of being distributed to co-operatives. This method of share allocation led to a strong dominance of managers and employees as company shareholders, since the Law allowed enterprise managers to influence the method of share sales. As a result, preference was frequently given to employees over external investors by allowing them to acquire shares, in addition to those they had been given free of charge, at a discount of up to 50 per cent of face value.

At the end of 1996, foreigners owned stakes of at least 10 per cent of enterprise capital in 17 food producing companies. These firms accounted for 9.5 per cent of total food industry turnover, and for 17 per cent of total food exports. Companies with foreign capital were, therefore, more export oriented than food producers without foreign owners.

Indeed, many of the firms with shareholders from abroad can best be classified as trading outlets rather than manufacturing enterprises. More than two-thirds of the enterprises with foreign investments have less than 10 employees and a turnover of less than US\$3 million. The only significant foreign investment in the Slovenian food industry has been the purchase of a controlling stake in the only sugar beet processor in the country by a Dutch firm (Agra Europe, January 1998: p. 31).

5.1 *The grain, flour, and bread chain*

In 1997, grains were cultivated on about 56 per cent of arable area in Slovenia. Annual grain production during the 1990s typically amounted to 500-550 000 tonnes (Table 5.2). The harvests in 1992 and 1993 were markedly below average, as droughts and disruptions due to the re-organisation of agricultural production following independence led to poor yields. Since then, yield levels have recovered and are roughly in line with averages in the European Union. Total grain output, however, falls short of that in the early 1990s, since some arable land was left fallow because of disruptions during the civil war.

Table 5.2: Grain production in Slovenia, 1990-97

	('000 tonnes)							
	1990	1991	1992	1993	1994	1995	1996	1997(p)
Total grain production	577	558	426	455	567	540	530	515
<i>of which:</i>								
• Wheat production	200	181	153	143	155	156	139	137
• Coarse grain production	377	377	273	312	412	384	391	378

p: provisional.

Source: OECD (1998).

Unlike in most other CEECs, agriculture in former Yugoslavia was overwhelmingly organised in small private agricultural holdings. Private farms up to a size of 10 hectares were tolerated according to the Land Property Law of 1953. Only about 8 per cent of agricultural area were farmed by large-scale, socially-owned farming enterprises. However, the latter played a prominent role in livestock production, and accounted for the majority of pigmeat and poultry supplies, for example. Since independence, there has been some consolidation among small private farms at the expense of previously socially owned, large-scale agricultural enterprises (Table 5.3). But in comparison with most countries in the European Union, the farming structure in Slovenia remains rather fragmented.

Table 5.3: Farming structure in Slovenia

	Pre-transition		1997	
	Socially owned farms	Private farms	Agricultural Enterprises	Private farms
Number of farms	119	112 000	108	91 000
Average farm size (ha)	239	4	165	5
Share of land use (%)	8	92	4	96

*) data refers to 1996; n.a.: not available.

Source: OECD Secretariat.

On the other hand, the milling industry in Slovenia continues to show a very high degree of market concentration (Table 5.4). Five large milling enterprises dominate grain processing and account for almost the entire flour sales on the domestic market. Four of the mills also engage in baking. But alongside these integrated bakeries, there exists a large number of small, family-owned companies in Slovenia, most of which have been established since independence. These small-scale bakeries have expanded their market share considerably over time, as they are more flexible in reacting to changes in market conditions than

their large integrated competitors, and not as thoroughly covered by stringent governmental regulation (see below).

Table 5.4: Structure of the milling and baking industry in Slovenia, 1991-96

Sub-sector	1991	1992	1993	1994	1995	1996
Milling industry						
• Number of firms	5	6	11	11	9	11
• Number of employees	1 561	1 354	952	955	749	918
• Four-firm concentration ratio (%)	100	n.a.	n.a.	n.a.	n.a.	97
Baking industry						
• Total production (tonnes)	n.a.	11 307	11 796	13 445	11 279	14 439
• Number of firms	36	50	75	89	95	108
• Number of employees	3 517	3 618	3 563	4 343	3 216	4 113
• Four-firm concentration ratio (%)	63	n.a.	n.a.	n.a.	n.a.	43

n.a.: not available.

Source: Gorton *et al.* (1998c).

A small number of firms in an industry, such as in Slovenia's milling sector and the food industry in general (see Table 2.3), does not necessarily mean that the latter engage in collusive, anti-competitive behaviour. But the high concentration ratios highlight the need for a competition policy that closely monitors enterprise conduct and punishes monopolistic behaviour. Yet, policy makers face the dilemma of having to allow enterprises to work at a sufficiently large scale, while at the same time ensuring enough competition on the small domestic market. Tolerating a series of company mergers in the food industry would lead to the emergence of a small number of large enterprises that could exert market power. On the other hand, prohibiting a consolidation of food companies would ensure more intense competition on the domestic market, but would deprive the enterprises and the whole economy of the benefits of scale economies and, hence, low operational costs. Trade policy liberalisation could contribute to overcoming this policy trade-off between scale of operation and intensity of competition by exposing domestic firms to competition from foreign producers, while encouraging food companies, perhaps through trans-national link-ups, to establish scale-efficient operations.

The privatisation of the large, socially-owned enterprises in the milling and baking industry has been largely completed. The shares in the privatised companies were allocated or sold according to the 'Law on Privatisations' (see Box 5.1). Hence, shares were not just distributed to employees, suppliers, and government agencies, but up to 40 per cent of the shares were sold to internal and external investors. However, little if any trading in the shares of the newly privatised companies has been observed so far.

The milling industry is subject to heavy regulation. The government sets a wheat price close to EU levels to support farm incomes, while regulating flour and retail prices such that consumers who purchase bread of basic quality can do so at a low price. Mills are supposed to cross-subsidise the unprofitable production of basic flour through profits made from sales of unregulated, higher quality grain products.

The government exercises control over the grain market through the Agency for Commodity Reserves (ACR). This agency has a monopoly for domestic wheat purchases and holds a market share of about 50 per cent. The remaining 50 per cent of domestic wheat is either consumed on farms or unofficially sold and processed in small-scale village mills. ACR also used to hold the monopoly for wheat imports. But from the beginning of 1998, commercial mills were allowed to import wheat on their own account. Nevertheless, ACR retained a substantial amount of control over foreign grain trade by being able to influence import volumes and the allocation of import quotas to mills.

Price controls and regulations along the agro-food chain, such as in the Slovenian grain sector, distort price relationships and lead to a misallocation of economic resources. The price controls were originally conceived to benefit consumers of basic quality bread. But given the economic costs of such measures and the relatively advanced stage of development of the Slovenian economy, the regulations might not be necessary any longer to achieve the desired political and social objectives.

An analysis of price relationships in the wheat-flour-bread chain in Slovenia does not reveal any substantial shifts in the share of retail revenue received by farmers, millers, and bakers between 1994 and 1996 (Table 5.5). It is remarkable, though, that the farmers' share of the retail price is significantly lower than in Bulgaria and Romania. Also, the very low retail margin reflects the fact that bread prices are subject to governmental regulation and that retailers are supposed to recover any losses incurred through sales of other bakery products.

Table 5.5: Prices and price relationships in the Slovenian wheat-flour-bread chain, 1994-96

	Absolute prices (in US\$ per tonne)			Relative prices (in per cent of retail price)		
	1994	1995	1996	1994	1995	1996
Wheat price (at farm gate)	194	225	240	17	17	19
Flour price (at mill gate)	338	410	377	29	32	29
Bread price (at bakery gate)	1 040	1 215	1 145	90	94	88
Retail price	1 156	1 298	1 294	100	100	100

Source: Gorton *et al.* (1998c).

5.2 *The milk to dairy products chain*

Milk production in Slovenia is overwhelmingly carried out by small-scale producers, even though some trend towards specialisation and large production units can be observed. The total number of cows fell from about 250 000 in 1990 to about 200 000 in 1997 (Figure 5.1), but the destocking process was not as pronounced as in most other CEECs. Milk yields per cow improved during transition to about 2 800 litres in 1996, so that total milk production remained stable even though the cow herd size had declined. Output of some processed milk products, such as butter and cheese even increased during the 1990s (Table 5.6).

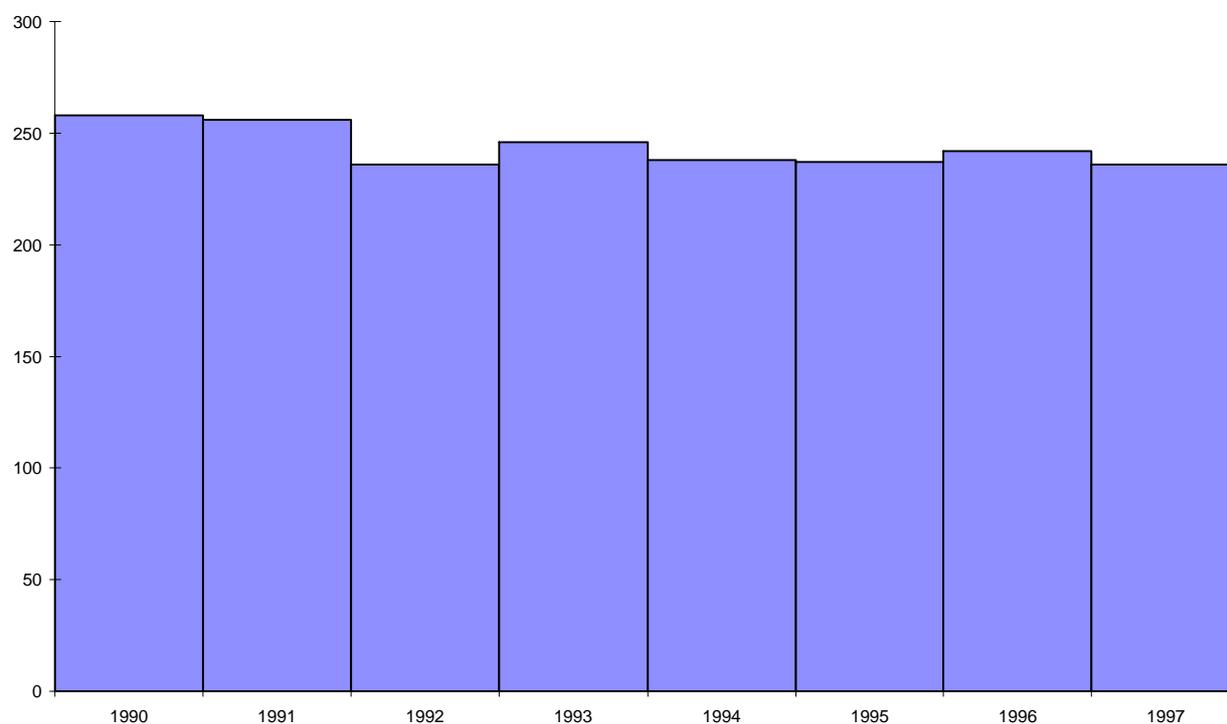
Table 5.6: Dairy production in Slovenia, 1990-97

	(*000 tonnes)							
	1990	1991	1992	1993	1994	1995	1996	1997(p)
Milk production	600	640	580	550	580	610	590	620
Butter production	2.0	2.0	2.0	2.0	1.5	2.1	2.1	2.1
Cheese production	11.2	12.3	12.4	13.9	15.2	15.8	15.5	15.7

p: provisional.

Source: OECD Secretariat.

Figure 5.1: Cow herd size in Slovenia, 1990-97
(‘000 animals)



Source: OECD Secretariat.

In 1996, there were 14 commercial dairies and 7 small-scale milk processing facilities at village level operating in Slovenia (Table 5.7). The biggest dairy, *Ljubljanske Mlekarne* located in Ljubljana, has an annual milk processing volume of about 150 000 tonnes and thereby accounts for about 40 per cent of the domestic market. Six dairies have capacities between 20 000 and 50 000 tonnes per year, while the remaining milk processing plants take in less than 10 000 tonnes of milk per year. For comparison, the 14 commercial dairies in Slovenia combined process as much milk as the twenty-second largest dairy in Germany.

Table 5.7: Structure of the dairy industry in Slovenia, 1991-96

Sub-sector	1991	1992	1993	1994	1995	1996
Number of firms	8	9	13	16	18	21
Number of employees	2 083	2 052	1 985	1 986	1 913	1 855
Four-firm concentration ratio (%)	84	n.a.	n.a.	n.a.	n.a.	78

n.a.: not available.

Source: Gorton *et al.* (1998c).

Those Slovenian dairies that were required to undergo privatisation, did so or are in the final stages of the process under the “Law on Co-operatives”. Milk producers through their co-operatives and dairy employees have become the majority shareholders in the newly privatised milk processing companies. This strong representation of local farmer’s and employee’s interests has inhibited the necessary consolidation of the industry so far, which would involve the closure of several small plants in favour of fewer, but more scale-efficient dairies.

Furthermore, the restructuring process is hindered through institutional arrangements that limit competition among dairy companies in the milk markets. According to an industry agreement, every dairy has a designated catchment area from which it procures its milk. There is no competition among dairies for milk supplies, and no possibility for individual milk processors to buy more milk in order to increase output and thereby lower per unit production costs. As a result, many dairies operate at less than full capacity, and the rationalisation and consolidation of dairy plants is impeded.

Another impediment to efficiency in the agro-food chain is the continuing intervention of the Slovenian government in markets for food products. The government regulates the farmgate price for milk as well as the consumer price for the pasteurised product. The farmgate price, which is set close to EU levels, applies uniformly throughout the country, favouring farmers in remote areas at the expense of their dairies, which incur considerable costs for shipping their milk products over long distances to the consumption centres. The pan-territorial pricing, therefore, not only inhibits the specialisation of primary production according to regional comparative advantage, but it also distorts the competition among dairies.

Moreover, the government regulates the price for pasteurised milk. The latter is set at a relatively low level in order to benefit consumers. Yet, with raw milk prices fixed at a high level and pasteurised milk prices at a low level, dairies find their margins squeezed. Indeed, most dairies in Slovenia are unable to make a profit from the production of pasteurised milk. Milk processors have to recover the losses by charging higher prices for other, unregulated milk products, which in the face of competition from imports is possible only to a limited extent. As a result, the dairy industry is among those food industry branches in Slovenia that show the lowest return on capital and on sales (Table 5.8). Under these conditions investors are discouraged of providing much needed capital for the consolidation and modernisation of milk processing facilities.

Table 5.8: Selected financial indicators for the food industry in Slovenia, 1996

Indicator	(in per cent)					
	Dairy industry	Meat industry	Milling industry	Baking industry	Fruit & veg. processing	Wine industry
Return on capital	3.5	4.1	2.9	4.5	4.9	2.4
Return on sales	1.4	1.2	2.0	2.9	3.8	1.6
Short terms assets to short-term liabilities	210.0	117.0	102.0	169.0	220.0	110.0
Debt to assets	26.6	45.8	34.7	22.8	24.1	48.3
Exports to total sales	9.7	8.2	7.0	2.2	29.3	13.2

Source: Lynton-Evans (1998).

Dairies in Slovenia are primarily supplied by small-scale farmers. The milk from about 24 000 farms is collected at about 3 500 gathering points every day, which means that the process of milk collection and quality control is cumbersome and expensive. In addition to the fragmentation on the procurement side, Slovenian dairies themselves lack focus on particular core activities. Even small milk processing companies tend to produce a considerable variety of dairy products, ranging from fresh milk to various types of cheeses, instead of specialising on some segment of the market for dairy products.

During 1994-96, the share of the milk retail price accruing to farmers remained stable at 55 per cent (Table 5.9). At the same time, retail prices were held relatively low compared to dairy gate prices by governmental price regulation. In absolute terms, however, milk prices along the entire milk to dairy product chain were relatively high when compared to prices in other transition countries, such as Bulgaria and Romania.

Table 5.9: Prices and price relationships in the Slovenian milk to dairy product chain, 1994-96

	Absolute prices (in US\$ per tonne)			Relative prices (in per cent of retail price)		
	1994	1995	1996	1994	1995	1996
Raw milk price (at farm gate)	275	330	309	55	55	55
Pasteurised milk price (at dairy gate)	459	504	483	92	84	86
Retail price	499	600	561	100	100	100

Source: Gorton *et al.* (1998c).

5.3 *The livestock to meat chain*

Livestock herds declined during transition in Slovenia, but not as sharply as in many other CEECs. Poultry flocks were most severely affected with a reduction of about 25 per cent between 1991 and 1996 (Table 5.10). However, productivity improvements allowed overall meat production to recover to pre-independence levels (Table 5.11).

Table 5.10: Livestock herd sizes in Slovenia, 1990-97

	('000 animals)							
	1990	1991	1992	1993	1994	1995	1996	1997p
Cattle (including cows)	546	533	484	504	478	477	496	484
Pigs	558	588	529	602	592	571	592	559
Poultry	n.a.	13 134	11 424	10 592	10 194	9 320	9 973	n.a.

p: provisional; n.a.: not available.

Source: OECD Secretariat.

Table 5.11: Meat production in Slovenia, 1990-97

	('000 tonnes)							
	1990	1991	1992	1993	1994	1995	1996	1997p
Total meat	181	165	161	164	157	165	172	177
<i>of which:</i>								
• Beef & veal	n.a.	n.a.	46	53	48	49	51	52
• Pigmeat	n.a.	n.a.	57	62	63	60	63	62
• Poultrymeat	n.a.	n.a.	57	49	45	56	58	61

p: provisional; n.a.: not available.

Source: OECD Secretariat.

Cattle is held primarily on family farms and the scale of production differs substantially from the pig industry, which is dominated by eight large-scale production units. These units were developed between 1958 and 1986 and are part of large integrated agro-food complexes that operate their own feed mills, for example. Each one of these pig farming enterprises has a turnover of between 10 000 and 100 000 pigs per year (Gorton *et al.*, 1998c)

Slovenia has more than 50 commercial slaughterhouses and meat processing plants (Table 5.12), but only 10 of these have more than 100 employees. Of the 20 socially owned meat companies that had been scheduled for privatisation, 15 had been privatised by the beginning of 1998, while the process for the remaining 5 had not yet been completed. As in the case of the milk industry, privatisation occurred according to the 'Law on Co-operatives', so that farmers and employees received the majority of company shares.

Table 5.12: Structure of the meat industry in Slovenia, 1991-96

Sub-sector	1991	1992	1993	1994	1995	1996
Number of firms	26	42	47	50	53	54
Number of employees	6 015	5 170	4 378	4 157	4 202	3 506
Four-firm concentration ratio (%)	75	n.a.	n.a.	n.a.	n.a.	47

n.a.: not available.

Source: Gorton *et al.* (1998c).

Slaughtering and processing capacities in the meat industry are in considerable excess of current production. Many facilities operate at no more than 30 per cent of their installed capacity. The low capacity use is mainly the result of the reduction of imports of live animals from other republics of former Yugoslavia. The latter used to send fattened cattle and pigs to Slovenia for slaughtering and processing, and took back cuts of fresh meat and processed products. After the change in the economic system and the break-up of former Yugoslavia, livestock and meat trade between Slovenia and other republics of former Yugoslavia decreased markedly, leaving Slovenian meat processors with oversized facilities.

Another impediment to an expansion of production besides the lack of supplies from traditional sources is the low quality of parts of the livestock material that slaughterhouses and meat processors receive from domestic farmers. While the quality of Slovenian grass-fed cattle is considered to be equal or even superior to imports from western Europe, pork from domestic pigs tends to have a very high fat content, and pig supplies to slaughterhouses are often rather heterogeneous with respect to animal weight and carcass characteristics. Because of the low quality of their products, Slovenian pork producers have difficulty maintaining their domestic market share, even though pork meat imports are subject to high tariffs and domestic pork prices are relatively high by international standards (Table 5.13).

Table 5.13: Prices and price relationships in the Slovenian livestock to meat chain, 1994-96

	Absolute prices (in US\$ per tonne)			Relative prices (in per cent of retail price)		
	1994	1995	1996	1994	1995	1996
Beef & veal:						
• Farm gate price	2 453	2 996	2 736	35	37	37
• Processor gate price	3 083	3 968	3 475	44	49	47
• Retail price	7 008	8 098	7 394	100	100	100
Pork:						
• Farm gate price	1 679	1 845	1 694	29	28	27
• Processor gate price	1 968	2 109	1 945	34	32	31
• Retail price	5 788	6 589	6 273	100	100	100
Chicken:						
• Farm gate price	1 156	1 194	1 291	37	31	33
• Processor gate price	2 437	2 850	2 817	78	74	72
• Retail price	3 124	3 852	3 912	100	100	100

Source: Gorton *et al.* (1998c).

The Slovenian government has endorsed a harmonisation timetable that calls for the full implementation of EU compatible veterinary and phyto-sanitary legislation by the year 2003. However, by 1997 many food production facilities were still falling short of meeting EU requirements. This is particularly true for small-scale enterprises that produce for their local markets. Overall, only a small number of establishments in Slovenia was certified to export food products into the European Union (Table 5.14).

Table 5.14: Number of Slovenian agro-food firms with export licenses to the European Union, 1997

Sub-sector	Number of firms with export licenses	Total number of firms in the sector
Beef and pork	6	n.a.
Meat products	4	54
Canned meat	10	54
Poultry products	2	n.a.
Canned fish	1	n.a.
Dairy products	6	21

n.a.: not available.

Source: Gorton *et al.* (1998c).

For example, only about one tenth of all veal calves, one third of all cows and pigs, and 40 per cent of young bovine animals were slaughtered in EU approved establishments. Not all companies in the meat industry might have sought certification from the European Union, because they are not interested in exporting into the western European market, but many of the uncertified facilities are not able to meet the hygienic and sanitary requirements demanded by EU inspectors.

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